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NATIONAL GUARD MEMBERS WITH SUICIDAL IDEATION: THE IMPACT OF STIGMA, MENTAL HEALTH, AND TRAUMA HISTORY ON TREATMENT-SEEKING OUTCOMES

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Social Work
at the University of Kentucky

By
Amy Elizabeth Brown
Lexington, Kentucky

Director: Dr. Julie Cerel, Professor of Social Work

Lexington, Kentucky
2020

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ABSTRACT OF DISSERTATION

NATIONAL GUARD MEMBERS WITH SUICIDAL IDEATION: THE IMPACT OF STIGMA, MENTAL HEALTH, AND TRAUMA HISTORY ON TREATMENT-SEEKING OUTCOMES

Background. Veterans are overrepresented among suicide deaths in the United States, representing 20% of annual suicide deaths but only about 1% of the U.S. population (Department of Veteran Affairs, 2010). Of all military suicide deaths in 2016, one-third (33.4%) were in the National Guard or Reserves (Department of Defense, 2018). Previous suicidal ideation or behavior (SIB) has been shown to increase risk of subsequent ideation or behavior in both active duty and veteran samples (Bryan, Rudd, & Wertenberger, 2016; Hazlett et al., 2016) but studies of SIB specific to National Guard service members were not found.

Access and Barriers to Care. Only 44% to 53% of National Guard service members use mental health services (Gorman et al., 2011; Kehle et al. 2010). Continuity of care may be impacted due to different eligibility requirements, and different electronic medical records systems between systems of care (Martis, 2014). Stigma has been shown to increase feelings of burdensomeness and decrease sense of belonging, thus increasing risk for SIB (Lusk et al., 2015). Stigma has been shown to impact treatment seeking (Gorman et al., 2011), and perpetuate mental health challenges and suicide risk (Lusk et al., 2015). The sub-concepts of “Public Stigma” and “Self-Stigma” (Brown & Bruce, 2016; Rodrigues et al., 2014) are discussed.

Mental Health. Studies have shown that greater challenges with mental health and suicide ideation facilitated treatment engagement (Gallegos, Streltzov & Stecker, 2016). Additionally, studies show a relationship between trauma exposure and negative mental health and SIB. Gradus et al. (2013) found in a 10-year longitudinal study of Marines, that childhood and military trauma and history of suicide attempt were primary risk factors for suicide attempt, and half of those in the study who were lost to suicide had reported at least one such stressor.

Trauma. Adverse events during childhood have predicted post-deployment onset of depression in soldiers with no pre-deployment history of depression or PTSD (Rudenstine et al., 2015). For National Guard service members with Military Sexual Trauma (MST), childhood sexual trauma was a stronger risk factor for suicide attempt than sexual trauma during military service. Though trauma history is an important consideration relating to mental health issues, no studies were identified specifically focusing on National Guard with SIB within the last year.

Research Aims. This dissertation will be focused on three factors that have been shown to influence mental health treatment seeking, and independently examine each factor in a separate manuscript to contribute new knowledge to the field. This dissertation aims to examine stigma, access to care and seeking services among National Guard with recent SIB, assess the relationship of PTSD, Depression and seeking services among

National Guard with recent SIB, and explore Pre-military trauma and treatment seeking in National Guard with recent SIB.

Method. This study was based on secondary data collected via survey of military personnel in the Army and Air National Guards in Utah, and Idaho. The original survey was conducted by the National Center for Veteran Studies, administered online and promoted via links on National Guard websites, as well as through command email distribution and social media. Measures included the Self-Injurious Thoughts and Behaviors Interview (Nock et al., 2007) to assess suicidal behavior, a modified Stigma and Barriers to Care, indications of use of twelve resources for seeking care, the PHQ-9 for depression, the PCL-5 for PTSD, and the LEC-5 for traumatic exposure.

Results. A total of 997 respondents completed the survey and of those, 120 reported SIB within the last year and were the focus of these studies. Most respondents were in the Army National Guard (81.5%; n=97), male (81.5%; n=97), and Caucasian (83.1%; n=98). Age was asked in ten-year intervals with the largest prevalence (43.2%; n=51) between 31 and 40 years old. Over half of survey respondents were married (68.3%; n=82), and most fell within the enlisted ranks (80.8%; n=97). Results and implications of analyses are discussed.

KEYWORDS: Military, Veteran, National Guard, Mental Health, Treatment Seeking, Suicide

Amy E. Brown

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10-15-2020

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NATIONAL GUARD MEMBERS WITH SUICIDAL IDEATION: THE IMPACT OF STIGMA, MENTAL HEALTH, AND TRAUMA HISTORY ON TREATMENT-SEEKING OUTCOMES

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CHAPTER 1: NATIONAL GUARD MEMBERS WITH SUICIDAL IDEATION: THE IMPACT OF STIGMA, MENTAL HEALTH, AND TRAUMA HISTORY ON TREATMENT-SEEKING OUTCOMES

Introduction

The Problem of Suicide Among U.S. Military and Veterans

The suicide rate among U.S. military personnel and veterans has been on the rise, and efforts to identify suicide risk and create interventions both in the U.S. Armed forces and Department of Veterans Affairs have yielded little impact on suicide losses (Kirsch, 2014). Between 2001 to 2011, the suicide rate among U.S. military personnel has increased nearly two-fold (Anglemyer, Miller, Buttrey, & Whitaker, 2016). Military service members represent an alarming proportion of suicide deaths, considering that they made up less than 0.5% of the overall U.S. population in 2016 (Council on Foreign Relations, 2018). A report by the Department of Defense (2018) found that 9.9% of suicide deaths in the U.S. in 2016 were military service members, including Active Duty, National Guard, and Reserves.

Among military veterans, the risk of suicide was found to be higher than non-veterans (Fortney et al., 2016). Specifically, the Department of Veterans Affairs (2016b) found that suicide risk was 21% higher for veterans as compared to their non-veteran counterparts, and that veterans are overrepresented among suicides in the U.S., making up 8.5% of the U.S. population but accounting for 18% of all suicide deaths. A recently published report (Department of Veterans Affairs, 2018) found that, when controlling for gender and age, the suicide rate for veterans was 1.5 times greater than for non-veterans.

State-specific fact sheets on veteran suicides (Department of Veterans Affairs, 2016a) indicated that the western region of the United States had a high number of states

with high veteran suicide rates when compared to regional and national suicide rates. Of thirteen states in the western region, more than half (n=7) had veteran suicide rates that significantly exceeded the national veteran suicide rate (30.1) and the national suicide rate (17.5), as well as being greater than the regional veteran suicide rate (35.0) and the regional suicide rate (19.0). These states were Nevada (veteran suicide rate=48.2), Idaho (veteran suicide rate=47.2), Arizona (veteran suicide rate=44.1), New Mexico (veteran suicide rate=44.1), Utah (veteran suicide rate=43.4), Colorado (veteran suicide rate=42.9), and Oregon (veteran suicide rate=39.4). These data highlight the necessity to focus further military and veteran suicide research in the Western region.

A recent study using Army Study to Assess Risk and Resilience in Servicemembers (STARRS) data (Nock et al., 2018) found that over half of suicide attempts occurred within a year of onset of suicidal ideation, and over 90% of attempts occurred within five years of onset of suicidal ideation. Bryan, Rudd, & Wertenberger (2016) found in a study of active duty service members, that those who had a history of suicide attempt and had not received treatment were more likely to make subsequent suicide attempts than those without a history of attempt. A study of veterans found that those with a history of multiple suicide attempts were more likely to have a subsequent attempt (Hazlett et al., 2016).

Army STARRS data were also used to assess treatment seeking behavior among suicide decedents, non-decedents matched on demographic and military history variables, and non-decedents with past-year suicidal ideation (Zuromski et al., 2019). This study found that compared to matched non-decedents, suicide decedents perceived more barriers to engaging in care including concerns about treatment negatively impacting

their military career, unit members losing confidence in them, and perceived weakness (Zuromski et al., 2019). Though these barriers were found (reported by next of kin of decedents), it was also noted that suicide decedents engaged in more treatment and used higher levels of care (ex: medication, inpatient mental health) than matched non-decedents. Suicide decedents and non-decedents with past-year suicidal ideation did not differ in perceived barriers or treatment seeking behaviors (Zuromski et al., 2019), suggesting that those with recent thoughts of suicide may require particular attention in research and clinical intervention efforts.

In summary, there is a substantial problem with suicide among military and veterans, and suicide rates are highest in states within the Western region of the U.S. Additionally research shows that those who have suicidal ideation or attempt within the last year or are not receiving mental health care may be at greatest risk for suicide. Military personnel with past-year suicidal ideation were found to seek more services despite higher prevalence of perceived barriers to care, and service seeking was similar to suicide decedents. These findings indicate the need for further investigation of service members associated with this geographical area, and highlight the importance of focusing research on those with suicidal ideation or behavior within the last year with an emphasis on exploring service use.

The Problem of Suicide in the National Guard

National Guard service is associated with the state in which the service members are assigned, and thus relevant to examine considering the geographic centrality of higher suicide rates in the United States. Among all military service members, about 21% of service members are National Guard personnel, and 17% are Reserve personnel (National

Academies Press, 2019). A report by the Department of Defense (2018) found that of all military suicide deaths in 2016, one-third (33.4%) were in the National Guard or Reserves. A significantly greater prevalence of National Guard suicides (compared to non-suicides) were service members living in the western Unites States (Griffith, 2017), which is consistent with state-specific data showing the higher suicide rates among veterans in many western states (Department of Veterans Affairs, 2016a).

Suicide exposure is prevalent in the National Guard and increases risk for suicidal ideation and behavior. A study of National Guard service members from Utah and Idaho (Bryan, Cerel, & Bryan, 2017) found that almost two-thirds (65.4%) of respondents knew at least one person that had died by suicide. Of those who reported suicidal ideation or attempt after the suicide exposure, most had previous suicidal ideation or attempt (Bryan, Cerel, & Bryan, 2017). A National Guard population-based study of SIB was not found, but previous suicidal ideation or behavior (SIB) has been shown to increase risk of subsequent ideation or behavior in both active duty and veteran samples (Bryan, Rudd, & Wertenberger, 2016; Hazlett et al., 2016).

Only 44% to 53% of National Guard service members use mental health services (Gorman et al., 2011; Kehle et al. 2010). Gorman et al. (2011) found in a study of treatment seeking by National Guard personnel and their significant others (spouse or partner), that though 40% of them met criteria for mental health diagnosis, only half of those meeting criteria sought treatment. Kehle et al. (2010) found similar results in a study of National Guard personnel who had been deployed, that over half of those with mental health problems were not engaged in treatment. A recent report from the Department of Veterans Affairs (2018) found that between 2005 and 2016 the suicide

rate increased over 25% among veterans not engaged in VA healthcare as compared to an increase of 13.7% for those engaged in VA services. The same report found that the number of suicides for National Guard and Reserve veterans (no longer in service) that were never activated for federal service increased by close to 150 deaths between 2005 and 2016. Of veteran suicide deaths in 2016, 14.8% (n=902) were National Guard and Reserve veterans that were never federally activated (Department of Veterans Affairs, 2018). This report suggested that due to never-activated status, these veterans may experience limitations in access to VA health and mental health care needed to address mental health and suicide related challenges (Department of Veterans Affairs, 2018).

National Guard suicide deaths represent a third of all military suicides, and a greater prevalence of these deaths are National Guard service members from Western states. Both suicide exposure and past suicidal ideation or attempt have been associated with increased risk of subsequent SIB. One glaring problem among National Guard personnel is that only about half of those with mental health challenges engage in mental health services, and this is a particular issue noting the increase in suicide rate for those not engaged in care. Thus, examination of whether available treatments are effective at reducing SIB is warranted.

Why Those Who Served Consider Suicide

The Interpersonal Theory of Suicide (ITS; Joiner, 2005) suggests that there are three components whose interaction activates suicidal ideation and behavior: thwarted belongingness, perceived burdensomeness, and acquired capability for suicide. As highlighted in a study of non-suicidal self-harm, (Joiner et al., 2012), the theory suggests that passive suicidal ideation can be inspired by a complete sense of lacking positive

relationships or being lonely (thwarted belongingness), or a complete sense of being a liability in the lives of loved ones (perceived burdensomeness). The combination of these two constructs increases risk for suicidal ideation (Joiner, 2005; Joiner et al., 2012). The third component that contributes to risk for suicidal ideation or behavior is acquired capability, understood as developing the capacity to override the human instinct of self-preservation. This is achieved by repeated exposure to events or stimuli that cause fear and/or physical pain (Joiner, 2005; Joiner et al., 2012). A meta-analysis of studies incorporating components of this theory (Chu et al., 2017) found first that thwarted belongingness and perceived burdensomeness were distinct constructs that were each significantly related to suicide risk, and in combination were associated with greater suicide risk. Chu and colleagues (2017) also found that the combination of all three components (thwarted belongingness, perceived burdensomeness and acquired capability) was associated with increased suicide risk and suicide attempt history, supporting all tenets of the theory.

The ITS has been used in multiple studies of Active Duty and National Guard military personnel to understand the alarming rates of suicide among these populations. Both perceived burdensomeness and thwarted belongingness were found to be the greatest indicators of suicide risk in military service members (Bryan, 2011; Silva et al., 2015). A study of military personnel recently returned from deployment (Lusk et al., 2015) found that negative thoughts of self, related to incapability of fully performing military duties, was correlated with perceived burdensomeness, thwarted belongingness, and a decreased desire to live.

In a study comparing prevalence of the three components of the ITS between Active Duty and National Guard personnel, Podlogar et al. (2017) indicated that National Guard service members had greater perceived burdensomeness and thwarted belongingness than their Active Duty counterparts. The co-occurring experience of these two perceptions increases suicidal ideation according to the ITS (Joiner, 2005; Joiner et al., 2012)

Pennings et. al, (2017) conducted an analysis of PTSD symptoms and components of the ITS in a predominantly National Guard sample, finding that PTSD depression-related-arousal symptoms and emotional numbing symptoms were associated with thwarted belongingness, and emotional numbing was also associated with perceived burdensomeness. PTSD hyper-arousal symptoms were associated with fearlessness about death, an aspect of acquired capability for suicide (Pennings et al., 2017).

Experiences in military training and during military service can desensitize service members to pain and death, thus there is a higher acquired capability for suicide among service members and veterans (Bryan & Anestsis, 2011; Bryan & Cukrowicz, 2011), and a higher risk of suicide if service members or veterans also experience thwarted belongingness and perceived burdensomeness (Chu et al., 2017; Silva et. al, 2015). A study of service members primarily representing the National Guard (Butterworth, Green, & Anestis, 2017), identified specific traumatic experiences during combat that were associated with thwarted belongingness, capability for suicide, and suicidal ideation. The experiences that were significantly associated with these factors related to witnessing others be injured or killed, being wounded, and killing or believing they killed someone (Butterworth, Green, & Anestis, 2017).

Effectiveness of Treatments for Suicidal Ideation or Behavior

Existing treatments have been found to reduce SIB. Evidence-based practices (EBP's) in mental health treatment have been shown effective at reducing suicide risk for those with a history of SIB and those with risk factors for suicide. Stanley (2017) described a basic model for EBP's including three phases: Assess, Intervene and Monitor for Suicide Prevention. Stanley suggested that this model encompasses the basic steps of suicide intervention, including asking about suicide and determining risk factors, intervening as necessary including safety planning and supports, and long-term and flexible monitoring for long term management and support.

Brodsky, Spruch-Feiner, and Stanley (2018) conducted a literature review of EBP's highlighting approaches that have been shown to reduce risk of suicide. Psychosocial interventions such as Cognitive Behavior Therapy and Dialectical Behavior Therapy (Zalsman et al., 2016), and Collaborative Assessment and Management of Suicidality (CAMS; Ellis et al., 2015), in addition to brief treatments, lethal means reduction, and ongoing monitoring after discharge from admission due to SIB were found to be effective approaches for reducing SIB (Brodsky, Spruch-Feiner, and Stanley, 2018). Of studies included in the review, Rudd et al. (2015) found that for active-duty service members with a history of SIB, usual treatment with additional brief CBT decreased likelihood of subsequent suicide attempt (during the 2-year follow up) by 60% (compared to usual treatment only). This demonstrates the possibility of CBT for suicide prevention in military personnel.

Multiple EBP's have been shown to be effective in reducing SIB, including CBT, DBT, CAMS, brief treatments, and lethal means reduction (Brodsky, Spruch-Feiner, &

Stanley, 2018; Ellis et al., 2015; Zalsman et al., 2016). Further investigation into barriers and facilitators to National Guard members engagement in services is warranted due to continued increases in suicide rates for this population, especially for those not engaged in care.

Barriers to Engagement in Services for National Guard Personnel

Access to care. National Guard personnel may experience limited access to DOD and VA services, limiting options for treatment. Access to health care services is important to consider for Reserve Component personnel, as their role as citizen soldiers means they could be considered both military personnel and veterans simultaneously. During non-deployment times and non-active duty service, Reserve Component troops are not eligible for military health care, but have unique health and mental health care needs compared to their civilian counterparts (Padden & Agazio, 2013).

Studies have shown that and that access barriers including transportation (Cheney et al., 2018; Spoont et al., 2014), cost concerns, and navigating VA healthcare (Cheney et al., 2018) are barriers to service engagement for veterans. A study of National Guard personnel returning from deployment (Valenstein et al., 2014) revealed that 30.8% of service members reporting barriers to care cited practical issues, the most prevalent of which was cost of care.

Reserve component military personnel are an increasing part of front-line military service and represent a greater proportion of those serving in the Global War on Terrorism (GWOT) than in the Korean or Vietnam wars, comprising almost half of combat troops (Coleman, 2004). Sariego (2009) suggested that one challenge with access to care for reservists is the “commonly held belief” among the general public that most

reserve troops have served in secondary or support roles and not in combatant or front-line positions, thus influencing the impression of these service members' need for treatment. In fact, reserve component troops experience injuries and casualties at a rate equivalent to that of Active Duty service members (Sariego, 2009).

The transition between active duty military service and civilian life with Reserve service provides an opportunity for mental health screening and engagement in care, but access to care may be challenging due to Reserve Component troops going back and forth between military and Veterans Administration (VA) or civilian healthcare, different requirements of DOD and VA for eligibility of services, and broken continuity of care due to different electronic medical records systems (Martis, 2014).

Though VA care may be available at no cost to the veteran for injuries sustained during active duty service of at least 30 days, National Guard and Reserve troops that served less time on active duty, or those that have healthcare needs unrelated to "line of duty" injuries, may not have access to any military/VA healthcare (Clauss, 2015). Though they may have access to a reserve-service-based healthcare program at a cost, this cost is often prohibitive to these service members (Clauss, 2015).

Stigma. In addition to access to care, stigma has been associated with not engaging in services. Stigma has been shown to increase feelings of burdensomeness and decrease sense of belonging, thus increasing risk for SIB (Lusk et al., 2015) Stigma can be separated into two types (Brown & Bruce, 2016; Rodrigues et al., 2014): 1) "Public Stigma", a negative reaction external to the individual or group toward those with attributes that are perceived as unfavorable, and 2) "Self-Stigma", a negative reaction internal to the individual that self-identifies with unfavorable attributes that are

negatively perceived either by the individual or the larger society. With either type of stigma, the stigmatized individuals or groups experience shame, discrimination and rejection (Schreiber & McEnany, 2015).

Stigma has also been shown to increase risk of SIB. A study highlighting self-stigma involving interviews with military personnel after deployment (Lusk et al., 2015) found that self-stigma associated with being incapable of fully performing military duties was correlated with both feelings of being a burden to others and decreased sense of belonging, decreasing respondents' desire to continue living.

Stigma has been identified as a barrier to seeking services for veterans (Cheney et al., 2018; Spoont et al., 2014) and National Guard service members (Valenstein et al., 2014). In a study of National Guard personnel meeting criteria for mental health diagnosis (Gorman et al., 2011), stigma-related concerns included not wanting mental health treatment in their records (45%), feeling they would be seen as weak (31%), and multiple other stigma-based concerns (ex: 29% were concerned about differential treatment by unit members, 28% thought leadership might treat them differently, 25% thought it might harm their career, 24% thought it would be too embarrassing). Valenstein and colleagues (2014) found in their study of National Guard personnel returning from deployment, that 34.4% of those that reported barriers to engaging in services indicated stigma-related concerns including mental health treatment showing in military records, harming their career, leaders treating them differently, being seen as weak, and unit members treating them differently. Wray et al. (2016) found that themes from military culture such as placing more meaning on continuing the mission than addressing one's own physical or emotional needs, self-reliance and minimizing needing

help, and expression of emotional fortitude persisted for veterans and acted as barriers to seeking treatment.

Anestis and Green (2015) examined disclosure of suicidal thoughts among National Guard personnel comparing a risk-assessment protocol where disclosure would be reported to command, and one that was not associated with the unit or command report. The study found that a greater proportion of the same National Guard personnel reported thoughts of suicide on the non-command protocol measure as compared to the command-reported protocol, and over half of respondents who reported current suicidal ideation on the non-command protocol measure denied suicidal ideation on the command-reported measure. This study represents an example of the impact that stigma can have on National Guard members' disclosure of mental health challenges, thus impacting their engagement in care.

Summarizing barriers to care, access to care may be a particular issue for National Guard personnel due to variations in qualifying for services in different healthcare systems depending on activated status and deployment history. Additionally, transportation challenges, concerns about cost of care, and confusion when navigating healthcare systems have been cited as barriers to engaging in services. Stigma, including how one's self and others perceive someone who seeks mental health services, was also cited as a barrier to care. Noted within stigma-related concerns were worry about care showing up in military records and impacting military careers in addition to changing the way one was treated by unit members and leadership.

Facilitators to Engagement in Services for National Guard Personnel

Mental health diagnosis and symptom severity. Studies have found a relationship between mental health symptoms and aspects of the ITS, indicating that specific aspects of mental health may increase risk for suicide. Silva et al. (2015) found that depressive symptoms and symptoms associated with social phobia or isolation were significantly associate with thwarted belongingness and perceived burdensomeness, and PTSD was associated with acquired capability for suicide.

Research has shown a relationship between mental health symptom severity and engaging in mental health services. Harpaz and colleagues (2014) examined reasons for initiating and continuing mental health treatment among Operations Iraqi Freedom and Enduring Freedom (OEF/OIF) veterans, finding that more combat exposure and greater severity of PTSD symptoms was associated with initiating treatment (attending an initial appointment), and greater symptoms of depression were significantly associated with ongoing engagement in care in the following year. A study using data from a national survey of suicidal ideation and behavior focused on prevalence of treatment seeking among veterans with and without suicidal ideation (Stanley, Hom, & Joiner, 2015). This study found that veterans reporting suicidal ideation, planning or history of attempt, and less social supports, engaged in mental health care more frequently, indicating that greater clinical severity was associated with treatment engagement (Stanley, Hom, & Joiner, 2015).

Psychiatric distress, including lower (worse) GAF scores and presence of a DSM diagnosis, was found to predict mental health treatment engagement in National Guard service members with a history of deployment to Iraq or Afghanistan (Primack et al.,

2017). Goodwin et al. (2014) found similar results among members of a Midwestern National Guard unit, that mental health need was the primary predictor of service use when controlling for demographics and other predictive variables. In addition, Interian et al., (2012) found that among National Guard members after deployment, readjustment stressors (job loss, divorce, family problems, financial problems, etc.) and depression were positively associated with treatment seeking, with multiple readjustment-based challenges increasing likelihood of engagement in mental health care.

While PTSD was significantly associated with seeking individual mental health care in a study of National Guard soldiers within 3 months after deployment, PTSD and supportive intimate relationships were found to collectively increase odds of seeking treatment, and marital distress was significantly associated with seeking family-related care (Meis et al., 2010).

Comorbidity of mental health diagnoses may increase likelihood of treatment seeking. A study of National Guard Soldiers previously deployed to Iraq or Afghanistan (Gorman et al., 2016) found that service members with at least one mental health issue (anxiety, depression, PTSD, self-reported suicide risk) were more likely to seek any treatment, and those with three comorbid issues (combination unspecified) were more likely than those with one issue to seek any treatment.

Literature shows that the primary facilitators to seeking mental health services include greater severity of symptoms of PTSD and depression, presence of a DSM diagnosis, and worse scores on Global Assessments of Functioning. Co-occurring mental health conditions and current life stressors were also associated with increased engagement in services.

Role of Childhood Trauma and Suicide Among National Guard Personnel

A study of soldiers deployed to Iraq or Afghanistan who sought behavioral health treatment found that 83% reported at least 1 type of adversity during childhood, and over half reported 3 or more types of adversity (Applewhite et al., 2016). Multiple studies show a relationship between trauma exposure during childhood and negative mental health outcomes including SIB. Gradus et al., (2013) found in a 10-year longitudinal study of Marines, that childhood trauma, suicide attempts prior to military service, and sexual harassment during training were the primary risk factors for suicide attempt. Half of those in the study who were lost to suicide had reported at least one such stressor (Gradus et al., 2013). A study of U.S. Army soldiers who had attempted or completed suicide (Perales et al., 2012) found that 64.7% of suicide attempt survivors and 43.3% of those that completed suicide had a history of childhood trauma. Youssef et al. (2013) found in a study of both military personnel and veterans, that when controlling for PTSD and combat related exposures, childhood trauma was significantly associated with depression and suicidal ideation.

In a study of National Guard service members, Rudenstine et al. (2015) found similarly that adverse events during childhood predicted post-deployment onset of depression in soldiers with no pre-deployment history of depression or PTSD. White et al. (2018) found that for National Guard service members with Military Sexual Trauma (MST), childhood sexual trauma was a stronger risk factor for suicide attempt than sexual trauma during military service. A study by Kline and colleagues (2016) of morbid thoughts and suicidal ideation (MTSI) in returning National guard personnel found that pre-deployment MTSI increased the likelihood of post-deployment MTSI 9-fold, and was

the strongest predictor of MTSI post-deployment among these troops. Having PTSD, depression, or pre-military civilian trauma history was also associated with post-deployment MTSI (Kline et al., 2016).

There is a strong connection in the literature between childhood traumatic experiences and suicidal ideation or attempt even when controlling for combat exposure, MST and PTSD. Pre-deployment traumatic experiences was significantly associated with onset of depression, and morbid and suicidal thoughts post-deployment. The role of National Guard pre-military trauma has been explored relating to outcomes of SIB, but the association between childhood trauma and seeking services has not been explored, and given the prevalence of childhood trauma among military personnel, further investigation of treatment engagement is necessary.

Understanding Service Engagement in National Guard Personnel

Previous research demonstrates that multiple EBP's are effective at reducing risk of SIB (Brodsky, Spruch-Feiner, & Stanley, 2018; Ellis et al., 2015; Rudd et al., 2015; Zalsman et al., 2016), but that only about half of National Guard personnel with mental health challenges are engaging in treatment (Gorman et al., 2011; Kehle et al. 2010). Given that the suicide rate for those not engaged in treatment increased by almost twice the suicide rate of those that had engaged in services over a 10-year period (Department of Veterans Affairs, 2018), research that develops and understanding of the low rate of National Guard personnel seeking mental health services is imperative.

Access to VA and DOD care are inconsistent and potentially limited for National Guard service members, as the transition between training or deployment status to reserve status. (Clauss, 2015; Padden & Agazio, 2013), and use of community or reserve-

service specific health care options may be cost prohibitive to these troops (Clauss, 2015).

Studies have found that transportation (Cheney et al., 2018; Spoont et al., 2014), cost (Cheney et al., 2018; Valenstein et al., 2014) and navigating healthcare systems (Cheney et al., 2018) are also barriers to service engagement, and almost a third of National Guard members were found to report such barriers (Valenstein et al., 2014).

In addition to practical barriers to engaging in services, previous research shows that stigma is a barrier to treatment engagement among National Guard service members (Gorman et al. 2011; Valenstein et al., 2014), and can also increase SIB (Lusk et al., 2015). A study examining disclosure of SIB (Anestis & Green, 2015) shows differential disclosure of suicidal thoughts when respondents knew information would be provided to command and when they were aware command would not be informed. This is an example of the impact of stigma on National Guard service members, potentially impacting their engagement in care.

Research has shown that greater mental health symptom severity facilitates engaging in mental health services in veterans (Harpaz & colleagues, 2014; Stanley, Hom, & Joiner, 2015) and National Guard service members (Goodwin et al., 2014; Primack et al., 2017). Specifically, greater depressive symptoms (Interian et al., 2012; Silva et al., 2015) and PTSD (Meis et al., 2010). Comorbid mental health conditions and current life stressors were found to increase likelihood of engaging in treatment (Gorman et al., 2016; Interian et al., 2012).

Prevalence of childhood trauma was found to be high among military personnel seeking behavioral health services (Applewhite et al., 2016), and childhood trauma has

been associated with depression and suicidal ideation in National Guard personnel (Rudenstine et al., 2015). Also pre-military trauma was a greater predictor than trauma during military service of mental health and suicide outcomes among National Guard service members (Kline et al., 2016; White et al., 2018). Though the association of childhood trauma and suicide has been well-documented, no studies were identified that examined the association of childhood trauma and seeking medical or mental health services among National Guard personnel. Given the importance of treatment seeking to decreasing suicide risk (Department of Veterans Affairs, 2018; Gorman et al., 2011; Kehle et al. 2010), further exploration of National Guard childhood trauma and engagement in services is warranted.

Gaps in current literature. Though previous research on National Guard members engaging in mental health services highlights key barriers and facilitators (including access to care, stigma, and mental health severity), no studies were found that explore service engagement among National Guard personnel with SIB within the last year. Given the relationship between previous SIB and subsequent SIB (Bryan, Cerel, & Bryan, 2017; Bryan, Rudd, & Wertenberger; 2016; Hazlett et al., 2016), over half of suicide attempts occurring within a year of onset of suicidal ideation (Nock et al., 2018), and similarity in treatment seeking among Active Duty suicide decedents and non-decedents with recent SIB (Zuromski et al., 2019), it is important to understand factors that inhibit or contribute to seeking services among National Guard personnel with SIB within the last year. Additionally, childhood trauma is associated with suicide risk in the National Guard (Kline et al., 2016; Rudenstine et al., 2015; White et al., 2018), and treatment engagement has been shown to decrease suicide risk (Department of Veterans

Affairs, 2018; Gorman et al., 2011; Kehle et al. 2010) but no studies have been found that identify childhood trauma as a barrier or facilitator to National Guard service members engagement in services. Due to the influence that childhood trauma has on SIB, it is important to investigate this novel topic further.

Three-Manuscript Dissertation

At this time, we are not aware of any study that examines challenges with access to care, stigma, and mental health outcomes specifically among National Guard personnel who reported suicidal ideation or behavior, and no studies were found that explore the association of childhood trauma and seeking services.

This dissertation focused on three aims relating to seeking services for mental health issues. Each aim was independently examined in a separate manuscript to contribute new knowledge to the field by focusing on National Guard service members with SIB. This dissertation highlights findings from three separate secondary analyses of a single dataset of National Guard personnel, highlighting unique challenges for troops simultaneously considered “military”, “civilian” and “veteran”.

Aims

The first aim of this dissertation was to investigate the association between stigma, access to care and seeking services among National Guard personnel with recent SIB. We hypothesized that stigma would have a negative relationship with seeking treatment, such that reporting greater challenges with stigma-based beliefs would be associated with not seeking care, and higher scores on stigma-specific subscales would be associated with not seeking care.

The second aim of this dissertation was to examine PTSD and Depression in association with seeking services among National Guard personnel with recent SIB (within the last year). We hypothesized that higher scores on Depression and PTSD measures (indicating worse symptoms) would individually be associated with seeking care (compared to not seeking care), and that a significantly greater proportion of those with comorbid diagnosis of depression and PTSD would seek services compared to those with a single diagnosis.

The third aim of this dissertation is to explore the association between pre-military trauma (including childhood and adolescence) and treatment seeking behavior in National Guard personnel with recent SIB by examining the association of pre-military trauma and engagement in services. Since trauma history could increase mental health severity, which has been associated with increased engagement in services, we hypothesized that a significantly greater proportion of those with pre-military trauma exposure would seek treatment as compared to those with military trauma exposure.

Identifying Data for Secondary Analyses

Previous literature highlights how access to care, stigma, mental health diagnosis and severity, are related to seeking treatment, and the association of childhood trauma exposure and SIB. There was a dearth of research that addressed these areas among National Guard personnel with SIB. Additionally, there were many states in the Western region of the United States that had state veteran suicide rates that significantly exceeded the national veteran suicide rate and the national suicide rate, in addition to being higher than state overall suicide rates.

To address gaps in the literature on treatment seeking for National Guard service members with SIB, it was pertinent to identify a dataset of National Guard personnel from a selection of states in the Western region that included measures of stigma and barriers to accessing care, PTSD, depression, pre-military trauma history, and SIB. The dataset also needed to capture treatment seeking. A dataset was identified that met these criteria. The data were from a survey originally conducted by the National Center for Veteran Studies (NCVS) directed by Dr. Craig Bryan. The original survey was administered online to personnel from the Army and Air National Guards in Utah and Idaho, both states in the Western Region of the United States. The survey was promoted via links on National Guard websites, as well as through command email distribution and social media. The introduction of the survey included information about risks and benefits of responding to the survey and about maintenance of confidentiality. These data have been utilized to examine suicide behavioral outcomes in National Guard soldiers with suicide exposure (Bryan, Cerel & Bryan, 2017), soldier background and events post deployment (Griffith & Bryan, 2017), and moral injury and PTSD (Bryan et al. 2018), as well as a study of the impact of aggression on betrayal and belongingness (Martin et al., 2017), and a study on sexual trauma related to mental health and SIB (Roberge et al., In Progress).

The dataset included measures addressing stigma and barriers to care, PTSD, depression, pre-military and military trauma exposure and SIB. A modified version of the Stigma and Barriers to Care (SBC; Britt et al., 2008) scale was used to assess respondent's agreement with stigma-based belief statements. The SBC is made up of two subscales: stigma, and barriers to care. The SBC is a reliable measure of stigma and

barrier-based factors influencing treatment seeking in veterans (Pietrzak et al., 2010). The modified measure was comprised of 20 Likert-scale questions asking respondents' level of agreement with stigma-based statements. The scale was separated into self-stigma, public stigma, and logistical issues. A test of internal consistency (Cronbach's $\alpha = 0.94$) revealed that the modified 20-item SBC is a reliable measure of these concepts. Internal consistency of items relating to self-stigma (Cronbach's $\alpha = 0.86$), public stigma (Cronbach's $\alpha = 0.91$), and logistical challenges (Cronbach's $\alpha = 0.86$) indicate that these subsets of the SBC have high reliability as well. The SBC has been used to assess stigma as a barrier to treatment seeking in studies of military service members (Hoge et al., 2004; Vogt, 2011) and veterans (DeViva et al., 2016; Tsai, Whealin & Pietrzak, 2014).

PTSD was measured using the PTSD checklist for DSM-5 (PCL-5), which evaluates the disruptiveness of 20 symptoms of PTSD (Weathers et al., 2013b). Blevins et al., (2015) found that this measure has strong internal consistency (Cronbach's $\alpha = .94$) and test-retest reliability ($r = .82$). The PCL-5 has been found to have good reliability even when administered in multiple formats (Boal et al., 2017).

The Depression module of the PHQ (PHQ-9) was used to assess depressive symptoms, and contains nine questions about frequency of symptoms of depression (Manea, Gilbody, & McMillan, 2012). Kroenke, Spitzer, & Williams (2001) found the PHQ-9 to be useful for diagnosis of depression (based on DSM-IV criteria) and useful for assessment of severity of depression, with sensitivity and specificity of 88% for major depression.

Traumatic exposure was assessed using the Life Events Checklist for DSM-5 (LEC-5). This is a self-report measure that assesses multiple types of stress over the

lifetime, and includes sixteen items known to cause distress or PTSD (Weathers et al., 2013a). The measure was modified in the original survey with a four-point nominal scale asking if events happened to the respondent before military service, to the respondent during military service, to someone else before military service, or to someone else during military service. Items in the checklist include but are not limited to stressors such as natural disaster, physical assault, sexual assault, combat, and exposure to sudden violent death (Weathers et al., 2013a). A test of internal consistency revealed that the 16-item modified LEC is a reliable measure of assessing type and timing of trauma (Cronbach's $\alpha = 0.849$).

Suicidal ideation and behavior **(**SIB) was assessed using items from the Self-Injurious Thoughts and Behaviors Interview (Nock et al., 2007), asking if the respondent ever experienced thoughts, plans, or attempts of killing themselves, and how recently they have had these thoughts, plans, or attempts (within the past week, month, year, or more than a year ago).

To explore treatment seeking behavior, respondents were asked to indicate their use of twelve types of outreach, medical, mental health, and spiritual services (incorporating chaplain or religious supports) on a 3-point scale (scale included no use, use within the last year, and use more than a year ago).

Analyses were conducted on cross-sectional, secondary data collected via survey of National Guard personnel in Utah and Idaho, provided by the National Center for Veteran Studies. The studies included in this dissertation expand on previous research by focusing on those within the sample of National Guard personnel that reported recent suicidal ideation or attempts (SIB). Specifically, analyses will examine the relationship

between access to care, stigma, mental health challenges, trauma history and service use. This research addresses gaps in the literature by focusing on National Guard troops, who are uniquely involved in both military and veteran roles when it comes to healthcare (Padden & Agazio, 2013).

Summary of Study 1: Access to Care, Stigma and Seeking Services

This study explores the association of Stigma and Barriers to Care (SBC) total scores and seeking services (compared to not seeking services) among National Guard personnel with recent SIB. This study also examines the relationship of SBC subscale (self- and public stigma) scores and seeking (compared to not seeking) services among National Guard personnel with recent SIB. The Stigma and Barriers to Care scale (SBC; Britt et al., 2008) was used to measure agreement with stigma-based beliefs. Because stigma has been shown to inhibit seeking services (Fortney et al., 2016), we hypothesized that greater SBC scores (indicating higher levels of stigma and challenges with access to care) would be associated with not seeking treatment, and that higher scores on each of the two subscales of the SBC associated with self- and public-stigma would be associated with not seeking treatment.

Summary of Study 2: Mental Health Severity and Seeking Services

The second study explores the association of total scores on PTSD and Depression measures, and engaging in treatment or services. The Depression module of the PHQ (PHQ-9) was used to assess depression, and the PTSD checklist for DSM-5 (PCL-5) was used to evaluate the disruptiveness of symptoms of PTSD. A categorical variable was created to determine if meeting the clinical cutoff for both PTSD and

depression was associated with seeking services compared to having a single diagnosis (PTSD only or depression only).

Because greater severity of mental health challenges has been associated with increased treatment seeking among National Guard personnel (Goodwin et al., 2014; Interian et al., 2012; Primack et al., 2017), and Active Duty personnel with recent suicidal ideation sought more services than their counterparts with no suicidal ideation (Zuromski et al., 2019) we hypothesized that greater (worse) scores on PTSD and Depression measures would be associated with seeking some type of treatment among National Guard personnel with recent SIB, and that a significantly greater proportion of those with co-occurring depression and PTSD diagnosis would seek services as compared to those with a single diagnosis.

Summary of Study 3: Trauma History and Treatment Seeking Outcomes

Pre-military trauma has been associated with suicide risk in National Guard personnel (Kline and colleagues, 2016; Rudenstine et al., 2015; White et al., 2018), and treatment engagement has been shown to decrease suicide risk (Department of Veterans Affairs, 2018; Gorman et al., 2011; Kehle et al. 2010) but the association between trauma prior to military service and engagement in services among National Guard personnel is unknown.

Increased severity of mental health symptoms has been associated with increased treatment seeking (Stanley, Hom, & Joiner, 2015), and seeking treatment is an important factor in mitigating mental health challenges and decreasing risk for suicidal ideation (Burns & Mahalik, 2011; Gallegos, Streltzov, & Stecker, 2016). Increased mental health

challenges due to pre-military and military trauma may necessitate seeking services to address increased mental health symptom severity and risk for SIB.

An analysis of trauma history comparing those with recent SIB to no SIB was conducted to determine whether timing of trauma history was associated with seeking any services specifically among those with recent SIB. The Life Events Checklist for DSM-5 (LEC-5) is a self-report measure that was used to assess multiple types of stress over the lifetime (Weathers et al., 2013a). A variable was created consolidating timing of trauma history into 4 categories (no trauma exposure, pre-military trauma, trauma during military service, both pre-military and during-service trauma).

Studies have shown that sexual harassment during military training (Gradus et al., 2013) and childhood sexual trauma (White et al. 2018) were primary risk factors for suicide attempt, but no studies have addressed sexual trauma history and seeking services among those with recent SIB.

Because childhood and pre-military trauma have been shown to increase suicide risk (Gradus et al., 2013) even when controlling for PTSD, and combat (Youssef et al., 2013), and suicidal ideation has been associated with multiple types of treatment seeking in military and veterans (Gallegos, Streltzov & Stecker, 2016; Zuromski et al., 2019), we hypothesized that a greater proportion of those with recent SIB and pre-military trauma exposure (as compared to all other timings of trauma) would seek services. This study also includes an exploratory analysis of the relationship between sexual trauma history, recent SIB, and seeking services.

Three-Manuscript Dissertation Methods

Missing Data

Data were analyzed for missingness using Little's (1988) MCAR test. Missing data were determined to be missing completely at random ($\chi^2[9,997]=5.77$, $p=.76$). Scheffer (2002) found in assessing multiple methods of imputation compared to deletion of cases with missing data, that if one was interested in variance within the data for data with MCAR missingness, deletion of cases with missing data would be recommended. This is consistent with earlier literature on addressing missingness (Little, 1988).

The variables of recency of SIB (never, more than a year ago, within the last year) and seeking any type of service (yes/no) are central to all analyses in this dissertation. Of 997 cases in the sample, 95 were omitted for missing data on recency of SIB, and 57 additional cases were omitted for missing data on seeking services with pair-wise deletion, to maximize the number of cases that could be used in each analysis. The remaining 686 cases were considered for analysis. Cases with recent SIB and complete data on service engagement outcomes were the focus of the study on stigma and access to care, and though this subsample was also the focus of the mental health severity and trauma history studies, comparison to the 574 participants with no SIB was included. When cases were found to be missing data on measures or variables relating to specific analyses in this dissertation, pair-wise deletion of cases with missing data on variables key to bivariate analyses (responses on the SBC, PHQ-9, PCL, and LEC) was used such that cases were included in the specific analyses where they were not missing data on key variables, and the maximum number of cases could be examined in each analysis.

Power Analysis

The adequacy of the sample size for the proposed statistical methodology was evaluated using a G-power analysis. For the purposes of this study, all statistical tests were performed at a 0.05 significance level. In most cases, a minimum power of 0.80 is desired, although more powerful tests require larger sample sizes (Fritz, 2007).

For analyses with categorical independent variables (comorbid mental health issues, trauma exposure timing), T-Tests and Chi Squared tests are employed to test the hypotheses using relevant subsets of the data. A T-test with effect size of 0.4, significance of 0.05, and 0.80 power, requires a minimum total sample size of 102. A Chi Squared test with effect size of 0.4, significance of 0.05, and 0.80 power, requires a minimum total sample size of 81.

The subset of the sample that has recent SIB (n=112) was of sufficient size for use in all analyses, even when data are reduced to account for missing values or subsets of the population. T-test analyses, grouped by seeking or not seeking services, achieved a power of 0.83 with a significance of 0.05 and large effect size of 0.8. Chi Squared analyses of comorbid mental health diagnosis (df = 3) had a statistical power of 0.91, with a significance of 0.05, and moderate effect size of 0.35. Chi Squared analyses of mental health diagnosis (df = 2) had a power of 0.82, with a significance of 0.05, and moderate effect size of 0.3.

Implications

The three studies included in this dissertation highlight unique barriers to seeking services for National Guard troops with recent or a history of suicidal ideation or attempt by identifying stigma-based concerns and barriers to care, identifying patterns of service

use related to mental health outcomes, and examining the impact of trauma history on treatment seeking. Outcomes of these studies inform outreach, medical, and mental health services from VA, DOD, and community providers available to National Guard service members. Findings may be used to develop improvements to services that address barriers to care, and mental health and trauma-specific needs for National Guard personnel. Results also address gaps in research on seeking services among National Guard personnel with recent SIB.

Table 1.1 *(continued)*

Outreach, Health, and Mental Health Services

Type	Service	Description
Outreach	TRICARE referral	TRICARE (https://www.tricare.mil) is a health insurance plan for service members and their families that covers health, mental health, dental, pharmacy, and vision care. TRICARE also provides behavioral analysis, medical equipment, home health care, hospice, and other services for beneficiaries with special needs.
	Military OneSource referral	Military OneSource (https://www.militaryonesource.mil) provides information and referral for a collection of services to address needs including from service member and family housing, child and youth development, beneficiary counseling, DOD schools, financial counseling and support, and legal counseling and support among others.
	Military Family Life Consultant (MFLC)	The MFLC program (https://www.mhngs.com/app/resourcesfor/militaryandfamilylifeconsultant.content) provides short-term counseling and support for service members and their families addressing the cycle of deployment and reintegration. Licensed clinicians address leaving loved ones, living and working in high risk environments, and reintegrating into communities and family.
Health Care	General Medical Doctor at a military facility	Non-specialist physician that may be a military officer or a civilian, providing services at a facility on a military base or funded by the DOD
	General Medical Doctor at a VA hospital or Community Based Outpatient Center	Non-specialist physician providing services at a VA hospital, or a small clinic located off-site from the hospital that is funded by VA

Table 1.1 *(continued)*

Outreach, Health, and Mental Health Services

Type	Service	Description
	General medical doctor at a civilian facility	Non-specialist physician providing services in the community that is not a part of VA or DOD
Mental Health	Mental health professional at a military facility	Mental health professional that may be a military officer or a civilian, providing services at a facility on a military base or funded by the DOD
	Mental health professional at a VA hospital or Community Based Outpatient Center	Civilian mental health professional providing services at a VA hospital, or a small clinic located off-site from the hospital that is funded by VA
	Mental health professional at the National Center for Veteran Studies (NCVS)	Civilian mental health professional providing services through NCVS R&R and other programs. The mission of the NCVS is to "conduct research, education, outreach, and advocacy for improving the lives of military personnel, veterans, and their families" (https://veterans.utah.edu/)
	Mental health professional at a civilian facility	Civilian mental health professional providing services in the community that is not a part of VA or DOD
Spiritual Support	Military chaplain	Military officer in spiritual/religious services providing spiritual guidance on a military base or in the surrounding community
	Civilian clergy	Civilian in spiritual/religious services providing spiritual guidance in the community that is not part of VA or DOD

CHAPTER 2. THE RELATIONSHIP OF STIGMA AND BARRIERS TO CARE AND TREATMENT SEEKING IN NATIONAL GUARD PERSONNEL WITH SUICIDAL IDEATION OR BEHAVIOR

Introduction

Veterans are overrepresented among suicide deaths in the United States, representing 20% of annual suicide deaths but only about 1% of the U.S. population (Department of Veteran Affairs, 2010). Among military veterans, the risk of suicide has been shown to be higher than in non-veterans (Fortney et al., 2016). Specifically, a recent report from the Department of Veterans Affairs (2016a) found that suicide risk was 21% higher for veterans as compared to their non-veteran counterparts. State-specific data on veteran suicides (Department of Veterans Affairs, 2016a) indicated that the western region of the United States is an area of particular concern. Among the thirteen states in the western region, seven had veteran suicide rates that significantly exceeded the national veteran suicide rate (30.1) and the national suicide rate (17.5).

The Reserve Components of the military include National Guard and Reserve units from all branches of service, and are designed to be trained and equipped the same as Active Duty units and support Active Duty unit missions when needed, but may serve as few as 39 duty days annually during non-deployment service time (United States Code, Title 10). National Guard service is associated with the state in which the service members are assigned, and thus relevant to examine considering the geographic centrality of higher suicide rates in the United States. A significantly greater prevalence of National Guard suicides (compared to non-suicides) were service members living in the western Unites States (Griffith, 2017), which is consistent with state-specific data showing the

higher suicide rates among veterans in many western states (Department of Veterans Affairs, 2016a).

A study of National Guard service members from Utah and Idaho found that the prevalence of exposure to another's suicide was high. Most of those who reported suicidal ideation or behavior (SIB) after suicide exposure had previous suicidal ideation or attempt (Bryan, Cerel, & Bryan, 2017) indicating that previous SIB increased risk of subsequent SIB among National Guard personnel

For those who engage in mental health treatment, evidence-based practices (EBP's) have been shown effective at reducing suicide risk for those with a history of SIB, as well as for those with risk factors for suicide. A literature review of EBP's shown to reduce suicidality (including suicidal ideation and post-treatment suicide attempt) conducted by Brodsky, Spruch-Feiner, & Stanley (2018) highlighted approaches including Cognitive Behavior Therapy and Dialectical Behavior Therapy (Zalsman et al., 2016), and Collaborative Assessment and Management of Suicidality (CAMS; Ellis et al., 2015).

Not engaging in treatment for mental health issues can perpetuate mental health challenges and increase risk for suicide (Burns & Mahalik, 2011; Gallegos, Streltzov, & Stecker, 2016; Lusk et al., 2015). A recent study using Army Study to Assess Risk and Resilience in Servicemembers (STARRS) data (Zuromski et al., 2019) assessed treatment seeking behavior among suicide decedents, non-decedents matched on demographic and military history variables, and non-decedents with past-year suicidal ideation. This study found that compared to matched non-decedents, suicide decedents perceived more barriers to engaging in care including concerns about treatment negatively impacting

their military career, unit members losing confidence in them, and perceived weakness (Zuromski et al., 2019). Though these barriers were found (reported by next of kin of decedents), it was also noted that suicide decedents engaged in more treatment and used higher levels of care (ex: medication, inpatient mental health) than matched non-decedents. Suicide decedents and non-decedents with past-year suicidal ideation did not differ in perceived barriers or treatment seeking behaviors (Zuromski et al., 2019), suggesting that those with recent thoughts of suicide may require particular attention in research and clinical intervention efforts.

Half or fewer National Guard service members seek treatment for mental health, despite meeting criteria for diagnosis (Gorman et al., 2011; Kehle et al. 2010). Of veteran suicide deaths in 2016, 14.8% (n=902) were National Guard and Reserve veterans that were never federally activated (Department of Veterans Affairs, 2018). This report suggested that due to never-activated status, these veterans may experience limitations in access to VA health and mental health care needed to address mental health and suicide related challenges (Department of Veterans Affairs, 2018).

Barriers to Engagement in Services for National Guard Personnel

Access to care. National Guard personnel may experience limited access to DOD and VA services, limiting options for treatment. Access to health care services is important to consider for Reserve Component personnel, as their role as citizen soldiers means they could be considered both military personnel and veterans simultaneously. During non-deployment times and non-active duty service, Reserve Component troops are not eligible for military health care, but have unique health and mental health care needs compared to their civilian counterparts (Padden & Agazio, 2013).

Studies have shown that access barriers including transportation (Cheney et al., 2018; Spoont et al., 2014), cost concerns, and navigating VA healthcare (Cheney et al., 2018) are barriers to service engagement for veterans. A study of National Guard personnel returning from deployment (Valenstein et al., 2014) revealed that 30.8% of service members reporting barriers to care cited practical issues, the most prevalent of which was cost of care.

Reserve component military personnel are an increasing part of front-line military service and represent a greater proportion of those serving in the Global War on Terrorism (GWOT) than in the Korean or Vietnam wars, comprising almost half of combat troops (Coleman, 2004). Sariego (2009) suggested that one challenge with access to care for reservists is the "commonly held belief" among the general public that most reserve troops have served in secondary or support roles and not in combatant or front-line positions, thus influencing the impression of these service members' need for treatment. In fact, reserve component troops experience injuries and casualties at a rate equivalent to that of Active Duty service members (Sariego, 2009).

The transition between active duty military service and civilian life with Reserve service provides an opportunity for mental health screening and engagement in care, but access to care may be challenging due to Reserve Component troops going back and forth between military and Veterans Administration (VA) or civilian healthcare, different requirements of DOD and VA for eligibility of services, and broken continuity of care due to different electronic medical records systems (Martis, 2014).

Though VA care may be available at no cost to the veteran for injuries sustained during active duty service of at least 30 days, National Guard and Reserve troops that

served less time on active duty, or those that have healthcare needs unrelated to “line of duty” injuries, may not have access to any military/VA healthcare (Clauss, 2015). Though they may have access to a reserve-service-based healthcare program at a cost, this cost is often prohibitive to these service members (Clauss, 2015).

Stigma. In addition to access to care, stigma has been associated with not engaging in services. Stigma has been shown to increase feelings of burdensomeness and decrease sense of belonging, thus increasing risk for SIB (Lusk et al., 2015) Stigma can be separated into two types (Brown & Bruce, 2016; Rodrigues et al., 2014): 1) “Public Stigma”, a negative reaction external to the individual or group toward those with attributes that are perceived as unfavorable, and 2) “Self-Stigma”, a negative reaction internal to the individual that self-identifies with unfavorable attributes that are negatively perceived either by the individual or the larger society. With either type of stigma, the stigmatized individuals or groups experience shame, discrimination and rejection (Schreiber & McEnany, 2015).

Stigma has also been shown to increase risk of SIB. A study highlighting self-stigma involving interviews with military personnel after deployment (Lusk et al., 2015) found that self-stigma associated with being incapable of fully performing military duties was correlated with both feelings of being a burden to others and decreased sense of belonging, decreasing respondents’ desire to continue living.

Stigma was identified as a barrier to seeking services for veterans (Cheney et al., 2018; Spoont et al., 2014) and National Guard service members (Valenstein et al., 2014). In a study of National Guard personnel meeting criteria for mental health diagnosis (Gorman et al., 2011), stigma-related concerns included not wanting mental health

treatment in their records (45%), feeling they would be seen as weak (31%), and multiple other stigma-based concerns (ex: 29% were concerned about differential treatment by unit members, 28% thought leadership might treat them differently, 25% thought it might harm their career, 24% thought it would be too embarrassing). Valenstein and colleagues (2014) found in their study of National Guard personnel returning from deployment, that 34.4% of those that reported barriers to engaging in services indicated stigma-related concerns including mental health treatment showing in military records, harming their career, leaders treating them differently, being seen as weak, and unit members treating them differently. Wray et al. (2016) found that themes from military culture such as placing more meaning on continuing the mission than addressing one's own physical or emotional needs, self-reliance and minimizing needing help, and expression of emotional fortitude persisted for veterans and acted as barriers to seeking treatment.

Anestis & Green (2015) examined disclosure of suicidal thoughts among National Guard personnel comparing a risk-assessment protocol where disclosure would be reported to command, and one that was not associated with the unit or command report. The study found that a greater proportion of the same National Guard personnel reported thoughts of suicide on the non-command protocol measure as compared to the command-reported protocol, and over half of respondents who reported current suicidal ideation on the non-command protocol measure denied suicidal ideation on the command-reported measure. These findings represent an example of the impact that stigma can have on National Guard members' disclosure of mental health challenges, thus impacting their engagement in care.

Summarizing barriers to care, previous research has identified limitations in access to care as inhibitors to seeking mental health treatment. Stigma, including how one's self and others perceive someone who seeks mental health services, was also cited as a barrier to care. Noted within stigma-related concerns were worry about care showing up in military records and impacting military careers in addition to changing the way one was treated by unit members and leadership.

Research Aims

Though previous research has identified access to care and stigma-based concerns as barriers to seeking services for National Guard service members, no studies were found that explore the influence of access to care and stigma on service engagement among National Guard personnel with recent SIB (within the last year). Given the relationship between previous SIB and subsequent SIB (Bryan, Cerel, & Bryan, 2017; Bryan, Rudd, & Wertenberger; 2016; Hazlett et al., 2016), and that over half of suicide attempts occur within a year of onset of suicidal ideation (Nock et al., 2018), it is important to investigate these inhibitors to seeking treatment for National Guard members with recent SIB.

The aim of this study is to investigate the association between stigma, access to care and seeking services among National Guard personnel with recent SIB. We hypothesized that stigma would have a negative relationship with seeking treatment, such that higher scores on the SBC would be associated with not seeking care, and higher scores on stigma-specific subscales would be associated with not seeking care.

Methods

Study Design

This study was based on secondary data collected via survey of military personnel in the Army and Air National Guards in Utah and Idaho, both states in the western region of the United States. The original survey was conducted by the National Center for Veteran Studies, administered online and promoted via links on National Guard websites, as well as through command email distribution and social media. The introduction of the survey included information about risks and benefits of responding to the survey and about maintenance of confidentiality.

Participants

A total of 997 respondents completed the survey, and 120 of these reported suicidal ideation or attempt within the last year and were the focus of this study. Most respondents were in the Army National Guard (81.5%; n=97), were male (81.5%; n=97), and Caucasian (83.1%; n=98). Age was asked in ten-year intervals with the largest prevalence (43.2%; n=51) between 31 and 40 years old, though over a quarter of respondents (28.0%; n=33) were between 22 and 30 years old. Over half of survey respondents were married (68.3%; n=82), and most fell within the enlisted ranks (80.8%; n=97). Table 2.1 highlights characteristics of respondents.

Measures

Mental health stigma and access to care. The Stigma and Barriers to Care (SBC) scale includes six items that assess stigma (ex: “My leaders would blame me for the problem”), and five items that address obstacles inhibiting or discouraging seeking mental health care (ex: “It is difficult to schedule an appointment”), and responses range

from “Strongly Agree” to “Strongly Disagree” (Britt et al., 2008). The stigma scale (Cronbach's α = 0.91) and barriers to care scale (Cronbach's α = 0.74) are reliable measures of limitations to seeking mental health care for veterans (Pietrzak et al., 2010). The SBC has been used to assess stigma as a barrier to treatment seeking in studies of military service members (Hoge et al., 2004; Vogt, 2011) and veterans (DeViva et al., 2016; Tsai, Whealin, & Pietrzak, 2014).

Perceived stigma relating to seeking mental health treatment was evaluated using a modified measure based on the SBC that increased the number of items, focused on military specific constructs such as “unit leadership,” and expanded information about stigma-based challenges. The modified measure was comprised of 20 Likert-scale questions asking respondents’ level of agreement with statements such as “I don’t trust mental health professionals”, “It would be too embarrassing” to seek treatment, and “mental health care doesn’t work.” The scale was separated into components based on six items associated with self-stigma (ex: “I would think less of a team member if I knew he/she was receiving mental health counseling”), seven items associated with public stigma (ex: “My unit leadership might treat me differently”), and seven access to care issues (ex: “There are no providers in my community”). A scale of Strongly Disagree (1) to Strongly Agree (5) was used, with possible totals ranging from 20 to 100, and higher scores indicating stronger agreement with limitations to access or negative stigma statements. A test of internal consistency revealed that the 20-item modified SBC is a reliable measure of challenges engaging in treatment (Cronbach's α = 0.94). Internal consistency of items relating to self-stigma (Cronbach's α = 0.86), public stigma

(Cronbach's $\alpha = 0.91$), and access challenges (Cronbach's $\alpha = 0.86$) indicate that these subsets of the SBC have high reliability as well.

Treatment seeking and use of services. Respondents were asked to indicate their use on a 3-point scale (scale included no use, use within the last year, and use more than a year ago) of twelve types of outreach, medical and mental health services, incorporating chaplain or religious supports. Table 2.2 highlights the prevalence of use of each of the twelve services among respondents with recent SIB. For this study, items were grouped into those related to outreach, medical health, mental health, and spiritual supports. A dummy variable was created highlighting whether respondents used any type of service (coded 1) or no services (coded 0).

Suicidal ideation and behavior. Suicidal ideation and behavior **(**SIB) was assessed based on items from the Self-Injurious Thoughts and Behaviors Interview (Nock et al., 2007), asking if the respondent ever experienced thoughts, plans, or attempts of killing themselves, and how recently they have had these thoughts, plans, or attempts (within the past week, month, year, or more than a year ago). This measure allows for respondents to indicate multiple types of SIB and the associated recentness. Because it is not possible to determine if, for example, reported planning in the last year preceded reported attempt in the last year, these analyses will focus on National Guard service members with suicidal ideation or attempt within the past year.

Statistical Analyses

Data were analyzed for missingness using Little's (1988) MCAR test and missing data in the dataset used for this study were determined to be missing completely at random ($\chi^2[9,997]=5.77$, $p=.76$). Scheffer (2002) suggested that to examine variance

within the data for data with MCAR missingness, deletion of cases with missing data was recommended. This was consistent with earlier literature on addressing missingness (Little, 1988). In this study, when cases were found to be missing data on measures or variables relating to specific analyses, those cases were omitted from analyses.

Eight cases with missing data on the outcome variable of seeking any type of service (yes/no) were omitted, and the remaining 112 were considered for analysis. Responses of National Guard personnel with recent SIB to the modified Stigma and Barriers to Care scale were analyzed, and seven respondents who did not complete SBC scale items were excluded from analyses. The remaining 105 responses were analyzed. T-test analyses of SBC scores, grouped by seeking or not seeking services, achieved a power of 0.80 with a significance of 0.05 and large effect size of 0.77.

A descriptive analysis of SBC scale responses was conducted. Items on the modified Prevalence of any specific barriers to engagement in medical or mental health services among National Guard service members with recent SIB were identified. Bivariate analyses addressed the relationship of demographic variables including sex, ethnicity, age category, relationship status, and rank to total SBC scores and to seeking services.

Items on the modified SBC scale were separated into self-stigma (six items), public stigma (seven items), and access challenges (seven items). An independent samples T-test assessed the association of total scores on the SBC scale and engagement in services among National Guard members with recent SIB. Additional T-tests assessed the association of total scores on each of the SBC measure subscales (self-stigma, public stigma, access limitations) and seeking services. Prevalence of agreement with statements

within each category and any specific barriers to engagement in medical or mental health services among National Guard service members with recent SIB were identified.

Results

Bivariate relationships of demographic variables examined the relationship of sex, ethnicity, age category, relationship status, and rank variables to total SBC scores. T-tests (power=0.81, a= 0.05, effect size=0.7) indicated a significant difference in mean score on the SBC by sex (T[103]=-2.08, p=.04), with female National Guard personnel having higher average scores (m=55.3, SD=13.38) on the SBC than males (m=47.8, SD=15.22). Higher average scores indicated greater challenges with stigma and other barriers to seeking services. Since it was noted that female sex was associated with higher SBC total scores, post-hoc T-tests (power=0.81, a= 0.05, effect size=0.7) were conducted to analyze which subscales of the SBC had significantly different mean total scores between men and women, and it was found that female sex was associated with significantly higher scores only on the public stigma subscale (T[103]=-2.38, p=.02).

Overall treatment seeking (dichotomous; seeking any type of treatment vs. no treatment) was examined with Chi Squared analyses of the same demographic variables (statistical power of 0.88 to .98, a=0.05, moderate effect size of 0.3) and results showed that Caucasian ethnicity (χ^2[6,105]=17.67, p<.01) was significantly associated with seeking any type of services. It is important to note that 83.1% of the sample indicated Caucasian ethnicity.

Possible total scores on the modified SBC ranged from 20-100 (m=49.29, SD=15.12). It was hypothesized that higher SBC total scores would be associated with not seeking services. A T-test was used to assess if there was a significant difference in

total SBC scores for those seeking any type of service compared to no services (power = 0.8, effect size = 0.77), and results show there was not a significant difference in scores between the groups (T[103]=1.82, p=.07).

It was further hypothesized that higher scores on the stigma-specific subscales of the SBC would be associated with not seeking services. T-tests (power = 0.8, effect size = 0.77) were used to analyze each subscale of the SBC by seeking or not seeking services. Findings show that greater total scores on the self-stigma subscale (T[103]=2.19, p=.03) were significantly associated with not seeking services, although public stigma subscale scores (T[103]=0.89, p=.38) and access to care subscale scores (T[103]=0.89, p=.38) were not significantly different between groups.

From the six self-stigma related items on the modified SBC (m=14.11, SD=5.09), over one-third (41.0%, n=43) agreed or strongly agreed that seeking treatment "would be seen as weak", 37.2% (n=39) agreed or strongly agreed that "it would be too embarrassing", and almost a quarter (21.9%, n=23) agreed or strongly agreed that "I don't trust mental health professionals."

Though higher scores on SBC items related to public stigma (m=19.85, SD=7.87) were not associated with service use, it is interesting to note that over half of respondents agreed or strongly agreed that "I don't want it to appear on my military records." (63.8%, n=67) and "it might harm my career" (53.3%, n=56), and almost half agreed to some extent that "my unit leadership might treat me differently" (43.8%, n=46). Over a quarter of respondents agreed or strongly agreed that "members of my unit might have less confidence in me" (39.0%, n=41) and "my visit would not remain confidential" (26.7%,

n=28), and almost a quarter agreed that “my leaders would blame me for the problem” (24.8%, n=26).

On the access to care subscale of the SBC (m=15.32, SD=5.37), at least a quarter of respondents agreed or strongly agreed that “mental health care costs too much money” (35.2%, n=37) and “it is difficult to schedule an appointment” (25.7%, n=27), and 23.8% (n=25) agreed or strongly agreed that “there would be difficulty getting time off work for treatment.” This further highlights challenges with access to VA, DOD, and other sources of health care. Table 2.3 highlights details of the SBC scale.

Discussion

The relationship of stigma, access to care, and seeking services was assessed, and stigma generally was not associated with not seeking services among National Guard members with recent SIB as anticipated. Caucasian ethnicity was significantly associated with seeking services, and 19% (N=105) of the respondents with recent SIB were of non-Caucasian ethnicity. Since engagement in treatment has been shown to decrease risk for suicide, education and outreach efforts specific to National Guard personnel of minority ethnicities that have had recent SIB may be warranted to encourage these service members to seek services.

Female sex was associated with greater mean scores on the Stigma and Barriers to Care Scale, indicating greater challenges with stigma and access to seeking services. Female sex was specifically associated with greater challenges relating to public stigma, or anticipation of how others might respond to treatment seeking. Seeking services by sex is an under-explored topic, and further research is needed to understand the experience of

female National Guard members with regard to seeking medical and mental health services, and consideration should be given to addressing stigma and unit culture.

Total SBC scores were not found to be associated with not seeking treatment as anticipated, and as demonstrated in previous research (Cheney et al., 2018; Spoont et al., 2014; Valenstein et al., 2014). Findings did show that higher scores on the self-stigma subscale of the SBC were associated with not seeking treatment, partially supporting the second hypothesis. Further research is needed to understand factors that inform treatment seeking behavior in National Guard personnel, and to identify ways to understand stigma-based beliefs among National Guard members, especially those related to self-stigma, to promote unit-wide engagement in services.

When examining individual statements included in the SBC scale it is possible to identify specific statements with which a larger percentage of respondents agreed or strongly agreed. It is notable that around over a quarter of respondents agreed or strongly agreed with two of the six statements relating to self-stigma, and six of the seven statements relating to public stigma. Over half suggested they would not want mental health treatment in their military records and that it might harm their careers. Additionally, a quarter or more respondents agreed or strongly agreed that it is hard to schedule appointments or get time off work to seek services, and over a third agreed that mental health care “costs too much money”.

Results demonstrate that those with recent suicidal ideation or attempt have substantial challenges with stigma-based beliefs that may perpetuate concerns about treatment seeking, such as not wanting to share with military or civilian leadership about seeking services and not wanting treatment seeking for mental health in their medical

records, and challenges with access to services including time and cost. These results highlight the importance of considering stigma and access to care in the context of assessment and treatment, especially since it has been shown that chronic mental health challenges increase suicide risk (Burns & Mahalik, 2011; Gallegos, Streltzov, & Stecker, 2016).

Limitations

There are some challenges interpreting data due to the nature of variables. One challenge with this secondary data is the distribution of demographics. Over 80% of respondents were male and Caucasian, and over 60% were married, possibly impacting interpreting nuances in SBC score outcomes by sex, ethnicity and relationship status. All participants were members of Idaho or Utah Army and Air National Guard units, and this geographic limitation may impact the generalizability of results to Reserve Component personnel nationally.

Another challenge is that data on age and rank were collected in ordinal categories, thus limiting specificity in interpretation of findings on the association between age or rank and treatment seeking. Also, it is unclear what specific relationship age may have to stigma-based beliefs and experiences with barriers to care.

Analyses had sufficient power only with large effect sizes. Of the subsample of National Guard personnel with recent SIB, most sought services thus limiting variability between those who sought services and those who did not. Also, deletion of cases that did not have complete information on seeking services was used due to this being the outcome variable of all studies in this dissertation, and this may have caused some data on other variables to be lost (eight cases).

Further research is needed addressing stigma and barriers to care in association with treatment engagement for Reserve Component personnel, possibly focusing on demographic variables collected with more specificity. Current analyses of the SBC do not allow adjustment for mental health severity, a key component of seeking services. Research on stigma and access to care would be enhanced by considering the impact of mental health symptoms on the relationship of stigma and seeking services. It may also be beneficial to understand how leadership responses to seeking services impact hesitation to engage in or continue available services, and ensure that low-cost services with flexible scheduling are available.

Table 2.1

Demographics of the Sample

Characteristics	Category	Prevalence
National Guard Membership	Utah Army National Guard	43.7% (n=52)
	Idaho Army National Guard	37.8% (n=45)
	Utah Air National Guard	18.5% (n=22)
Sex	Male	81.5% (n=97)
	Female	18.5% (n=22)
Ethnicity	Caucasian	83.1% (n=98)
	Multiple Ethnicities	7.6% (n=9)
	Other	3.4% (n=4)
	Hispanic/Latino	2.5% (n=3)
	African American	1.7% (n=2)
	Asian	0.8 (n=1)
	Native American Indian	0.8 (n=1)
Age	18-21	3.4% (n=4)
	22-30	28.0% (n=33)
	31-40	43.2% (n=51)
	41-50	22.9% (n=27)
	Over 50	2.5% (n=3)
Relationship Status	Married	68.3% (n=82)
	Legally separated or divorced	10.0% (n=12)
	Unmarried, not currently in a relationship	9.2% (n=11)
	Unmarried, in a committed relationship and living together	5.0% (n=6)
	Unmarried, in a committed relationship but not living together	3.3% (n=4)
	Other	3.3% (n=4)
	Widowed	0.8 (n=1)
Rank	Junior Enlisted (E-1 to E-4)	20.0% (n=24)
	Enlisted (E-5 to E-6)	33.3% (n=40)
	Senior Enlisted (E-7 to E-9)	27.5% (n=33)
	Warrant Officer (WO-1 to WO-5)	2.5% (n=3)
	Junior Officer (O-1 to O-3)	7.5% (n=9)
	Senior Officer (O-4 to O-9)	9.2% (n=11)

Table 2.2

Prevalence of Seeking Outreach, Health, and Mental Health Services

Type	Service	Prevalence
Outreach	TRICARE referral (https://www.tricare.mil)	24.5% (n=27)
	Military OneSource referral (https://www.militaryonesource.mil)	17.0% (n=19)
	Military Family Life Consultant (MFLC; https://www.mhngs.com/app/resourcesfor/militaryandfamilylifeconsultant.content)	8.1% (n=9)
Health Care	General medical doctor at a civilian facility	27.0% (n=30)
	General Medical Doctor at a military facility	21.4% (n=24)
	General Medical Doctor at a VA hospital or Community Based Outpatient Center	20.5% (n=23)
Mental Health	Mental health professional at a civilian facility	41.1% (n=46)
	Mental health professional at a VA hospital or Community Based Outpatient Center	32.1% (n=36)
	Mental health professional at a military facility	25.9% (n=29)
	Mental health professional at the National Center for Veteran Studies (NCVS)	4.5% (n=5)
Spiritual Support	Military chaplain	24.1% (n=27)
	Civilian clergy	24.1% (n=27)

Note: Some respondents sought more than one type of service

Table 2.3

Stigma-based Beliefs and Barriers to Care from Modified SBC Scale

Stigma/Barrier Type Mean (SD)	**Item Mean (SD)**	**Items**	**Percent Agree/ Strongly Agree**
Self-Stigma *(possible 6 to 30)* 14.11 (5.09)	2.88 (1.37)	"it would be seen as weak"	41.0% (n=43)
	2.81 (1.31)	"it would be too embarrassing"	37.2% (n=39)
	2.61 (1.20)	"I don't trust mental health professionals"	21.9% (n=23)
	2.23 (1.11)	"mental health care doesn't work"	12.4% (n=13)
	1.70 (1.00)	"I would think less of a team member if I knew he/she was receiving mental health counseling"	6.7% (n=7)
	1.90 (1.02)	"an officer or NCO should not be in a leadership position if he/she is taking medication for a mental health problem"	5.7% (n=6)
Public-Stigma *(possible 7 to 35)* 19.85 (7.87)	3.54 (1.45)	"I don't want it to appear on my military records."	63.8% (n=67)
	3.28 (1.46)	"it might harm my career"	53.3% (n=56)
	2.99 (1.47)	"my unit leadership might treat me differently"	43.8% (n=46)
	2.88 (1.37)	"members of my unit might have less confidence in me"	39.0% (n=41)
	2.59 (1.39)	"my visit would not remain confidential"	26.7% (n=28)
	2.53 (1.35)	"my leaders would blame me for the problem"	24.8% (n=26)
	2.04 (1.12)	"my leaders discourage the use of mental health services	9.6% (n=10)
Access Barriers *(possible 7 to 35)* 15.32 (5.37)	2.85 (1.30)	"mental health care costs too much money"	35.2% (n=37)
	2.38 (1.30)	"it is difficult to schedule an appointment"	25.7% (n=27)
	2.39 (1.29)	"there would be difficulty getting time off work for treatment"	23.8% (n=25)
	2.14 (0.99)	"I don't know where to get help"	13.3% (n=14)

Table 2.3 *(continued)*

Stigma-based Beliefs and Barriers to Care from Modified SBC Scale

Stigma/Barrier Type Mean (SD)	**Item Mean (SD)**	**Items**	**Percent Agree/ Strongly Agree**
	2.10 (1.12)	"I would have to drive great distances to receive high quality care"	10.5% (n=11)
	1.91 (0.94)	"there are no providers in my community"	7.6% (n=8)
	1.55 (0.81)	"I don't have adequate transportation"	3.8% (n=4)

Note: A scale of 1 "strongly disagree" to 5 "strongly agree" was used to rate each item

CHAPTER 3. THE IMPACT OF DEPRESSION AND PTSD ON TREATMENT SEEKING IN NATIONAL GUARD PERSONNEL WITH SUICIDAL IDEATION OR BEHAVIOR

Introduction

The suicide rate among U.S. military personnel and U.S. veterans has been on the rise, and efforts to identify suicide risk and create interventions both in the U.S. Armed forces and Department of Veterans Affairs have yielded no impact on numbers of suicide losses (Kirsch, 2014). Between 2001 to 2011, the suicide rate among U.S. military personnel has increased nearly two-fold (Anglemyer et al., 2016), and veterans are overrepresented among suicides in the U.S., making up 8.5% of the U.S. population but accounting for 18% of all suicide deaths.

Bryan, Rudd, & Wertenberger (2016) found in a study of active duty service members, that those who had a history of suicide attempt and had not sought treatment were subsequently more likely to attempt suicide than those without a history of attempts. A study of veteran suicide attempts yielded similar findings, that veterans with a history of suicide attempts are more likely to have subsequent attempts (Hazlett et al., 2016).

State-specific information on veteran suicides indicated that suicide rates among veterans in the western region of the United States were of particular concern. Of thirteen states in the western region, more than half had veteran suicide rates that significantly exceeded the regional and national veteran suicide rates and the national suicide rate (Department of Veterans Affairs, 2016a).

Among all military service members, about 21% of service members are National Guard personnel, and 17% are Reserve personnel (National Academies Press, 2019). A report by the Department of Defense (2018) found that of all military suicide deaths in

2016, one-third (33.4%) were in the National Guard or Reserves. National Guard service primarily occurs in the service member's assigned state, and warrants further investigation given the geographic distribution of higher suicide rates in the United States. National Guard service members living in the western United States have a high prevalence of suicide (Griffith, 2017), which is consistent with studies of veteran suicide rates in western states (Department of Veterans Affairs, 2016a).

Previous suicidal ideation or attempt among National Guard personnel increases risk for subsequent suicidal ideation or behavior (SIB). Bryan, Cerel, & Bryan (2017) found that most National Guard members who reported suicidal ideation or attempt after someone they knew died by suicide had previous suicidal ideation or attempt. This is consistent with findings from studies of active duty and veteran samples (Bryan, Rudd, & Wertenberger, 2016; Hazlett et al., 2016).

Existing treatments have been found to reduce SIB. Evidence-based practices (EBP's) in mental health treatment have been shown effective at reducing suicide risk for those with a history of SIB and those with risk factors for suicide. Collaborative Assessment and Management of Suicidality (CAMS; Ellis et. al, 2015), brief treatments and lethal means reduction (Brodsky, Spruch-Feiner, & Stanley, 2018), Cognitive Behavior Therapy and Dialectical Behavior Therapy (Zalsman et al., 2016), and ongoing monitoring after discharge from admission due to SIB (Brodsky, Spruch-Feiner, & Stanley, 2018) were found to be effective approaches for reducing SIB.

Though the effectiveness of EBP's has been demonstrated, half or fewer National Guard service members use mental health services (Gorman et al., 2011; Kehle et al. 2010). Gorman et al. (2011) found in a study of treatment seeking by National Guard

personnel that only half of those meeting criteria for mental health diagnosis sought treatment. Kehle et al. (2010) found that over half of National Guard personnel who had been deployed who had mental health problems were not engaged in treatment.

A recent report from the Department of Veterans Affairs (2018) found that between 2005 and 2016 the suicide rate increased over 25% among veterans not engaged in VA healthcare as compared to an increase of 13.7% for those engaged in VA services. The same report found that the number of suicides for National Guard and Reserve veterans (no longer in service) that were never activated for federal service increased by close to 150 deaths between 2005 and 2016.

Mental Health Challenges and Treatment Engagement

Research has shown a relationship between mental health symptom severity and engaging in mental health services. Harpaz and colleagues (2014) examined reasons for initiating and continuing mental health treatment among Operations Iraqi Freedom and Enduring Freedom (OEF/OIF) veterans, finding that more combat exposure and greater severity of PTSD symptoms was associated with initiating treatment (attending an initial appointment), and greater symptoms of Depression were significantly associated with ongoing engagement in care in the following year. A study using data from a national survey of suicidal ideation and behavior focused on prevalence of treatment seeking among veterans with and without suicidal ideation (Stanley, Hom, & Joiner, 2015). This study found that veterans reporting suicidal ideation, planning or history of attempt, and less social supports, engaged in mental health care more frequently, indicating that greater clinical severity was associated with treatment engagement (Stanley, Hom, & Joiner, 2015).

Psychiatric distress, including lower (worse) GAF scores and presence of a DSM diagnosis, was found to predict mental health treatment engagement in National Guard service members with a history of deployment to Iraq or Afghanistan (Primack et al., 2017). Goodwin et al. (2014) found similar results among members of a Midwestern National Guard unit, that mental health need was the primary predictor of service use when controlling for demographics and other predictive variables. In addition, Interian et al., (2012) found that among National Guard members after deployment, readjustment stressors (job loss, divorce, family problems, financial problems, etc.) and Depression were positively associated with treatment seeking, with multiple readjustment-based challenges increasing likelihood of engagement in mental health care.

While PTSD was significantly associated with seeking individual mental health care in a study of National Guard soldiers within 3 months after deployment, PTSD and supportive intimate relationships were found to collectively increase odds of seeking treatment, and marital distress was significantly associated with seeking family-related care (Meis et al., 2010).

Comorbidity of mental health diagnoses may increase likelihood of treatment seeking. A study of National Guard Soldiers previously deployed to Iraq or Afghanistan (Gorman et al., 2016) found that service members with at least one mental health issue (Anxiety, Depression, PTSD, self-reported suicide risk) were more likely to seek any treatment, and those with three comorbid issues (combination unspecified) were more likely than those with one issue to seek any treatment.

Research Aims

Though previous research has shown that greater severity of mental health challenges (Gallegos, Streltzov & Stecker, 2016; Primack et al., 2017), and co-occurance of mental health challenges (Gorman et al., 2016) were associated with increased treatment seeking, no studies were identified that focused on the relationship between mental health severity, co-occurrence, and service engagement among National Guard personnel with recent SIB. Previous SIB increases risk of subsequent SIB (Bryan, Rudd, & Wertenberger; 2016; Hazlett et al., 2016), and most suicide attempts occur within a year of initial suicidal ideation (Nock et al., 2018), and thus it is imperative to investigate mental health and service engagement for National Guard members with recent SIB.

The aim of this study is to examine PTSD and Depression in association with seeking services among National Guard personnel with recent SIB (within the last year) as compared to those with no history of SIB. We hypothesized that higher scores on Depression and PTSD measures (indicating worse symptoms) would individually be associated with seeking care (compared to not seeking care) among those with recent SIB, and that a significantly greater proportion of those with recent SIB and a comorbid diagnosis of Depression and PTSD would seek services compared to those with a single diagnosis.

Methods

Study Design

This study is a unique examination of service engagement specific to National Guard troops with recent SIB, assessing the relationship between scores on Depression and PTSD measures and seeking services (any type of treatment compared to no treatment), and the relationship between comorbid mental health issues and seeking services.

This study is a secondary data analysis of survey data from a study originally conducted by the University of Utah, National Center for Veteran Studies. Data for the original study were collected via online survey of military personnel in the Army and Air National Guards in Utah and Idaho. Promotion for the survey included links on National Guard websites, command email distribution and social media. Information about risks and benefits of responding to the survey and about maintenance of confidentiality was provided to participants in the introduction of the survey.

Participants

This study of mental health severity and comorbidity uses the same secondary data sample as the study of stigma and access to care, and the study of trauma history and seeking services. A total of 997 personnel responded to the survey, and of those 120 reported recent SIB. Of those, 112 National Guard members had complete data on seeking services and were included in analyses of the subsample with recent SIB. This subsample was comprised of service members from the Utah Army National Guard (41.4%; n=46), the Idaho Army National Guard (38.4%; n=43), the Utah Air National Guard (19.8%; n=22). The majority were Caucasian (86.4%; n=95), married (70.5%;

n=79), males (81.3%; n=91) between the ages of 31 and 40 years (44.1%; n=49). Most study participants (82.1%, n=92) were enlisted, with 20.5% (n=23) junior enlisted (E-1 to E-4), 33.0% (n=37) enlisted (E-5 to E-6), and 28.6% (n=32) senior enlisted (E-7 to E-9). Table 3.1 highlights demographic characteristics of the sample including those with recent SIB and those with no history of SIB.

Measures

Depression. The Depression module of the PHQ (PHQ-9) contains nine questions and was used to measure frequency of symptoms of Depression, with a "clinical cutoff" of 10 (possible range of scores is 0 to 27) representing likelihood for moderate symptoms of Depression (Manea, Gilbody, & McMillan, 2012). Possible responses to items range from 0 (not at all) to 3 (nearly every day). Kroenke, Spitzer, & Williams (2001) found the PHQ-9 to be useful for diagnosis of Depression (based on DSM-IV criteria) and useful for assessment of severity of Depression, with sensitivity and specificity of 88% for major Depression.

PTSD. The PTSD checklist for DSM-5 (PCL-5) evaluates the disruptiveness of 20 symptoms of PTSD on a scale of 0 (not at all bothered) to 4 (extremely bothered). Response scores are totaled, ranging from 0 to 80, with a clinical cutoff of 33 indicating diagnosis of PTSD (Weathers et al., 2013b). Blevins et al., (2015) found that this measure has strong internal consistency (Cronbach's $\alpha = .94$;) and test-retest reliability ($r = .82$). The PCL-5 has been found to have good reliability even when administered in multiple formats (Boal et al., 2017).

Treatment Seeking and Use of Services. Respondents indicated their use (no use, use within the last year, and use more than a year ago) of twelve types of outreach,

medical, mental health, and spiritual services. Table 3.2 indicates use of services by category. For this study, a dummy variable was created grouping service use into use of any type of service (coded 1) and no service use (coded 0).

Suicidal Ideation and Behavior. The Self-Injurious Thoughts and Behaviors Interview (Nock et al., 2007) was used to determine type and recentness of suicidal ideation and behavior **(**SIB). Items in the measure asked if the respondent ever experienced thoughts or plans of killing themselves or ever attempted to cause their own death, and how recently they have had these thoughts, plans, or attempts (within the past week, month, year, or more than a year ago). Respondents were able to indicate multiple types and recentness of SIB, and thus timing of reported ideation compared to a reported plan or attempt is not discernable. Due to previous research highlighting the influence of recent SIB on suicide risk, these analyses focused the subset of National Guard personnel with SIB within the last year compared to those with no SIB.

Statistical Analysis

Missingness within the data was analyzed using an MCAR test (Little, 1988), and data were determined to be missing completely at random ($\chi^2[9,997]=5.77$, $p=.76$). Omission of cases with missing data on key variables involved in analyses has been recommended when assessing variation in data with an MCAR missingness pattern (Little, 1988; Scheffer, 2002). In this study, cases were excluded from analyses that were missing data on measures or variables relating to specific analyses.

Of 997 survey respondents, cases were omitted for missing data on SIB and on seeking services (152 cases total). As this paper focused on National Guard personnel with recent SIB and included a comparison to those with no SIB, 159 respondents with

SIB more than a year ago were omitted from analyses. The remaining 686 cases were considered for analysis including 112 service members with recent SIB, and 574 service members with no history of SIB. Bivariate analyses examined the association between recent SIB (compared to no SIB) and seeking any services (power=0.82, a=0.05, small effect size of 0.11).

Responses of National Guard personnel with recent SIB and no SIB to the PHQ-9 were analyzed, and respondents who did not complete PHQ-9 scale items were excluded from analyses of Depression severity and seeking services. For those with recent SIB, 108 responses were analyzed. T-test analyses of PHQ-9 scores, grouped by seeking or not seeking services, achieved a power of 0.83 with a significance of 0.05 and large effect size of 0.8. Among National Guard service members with no SIB, 547 respondents with complete PHQ-9 scales were included in analyses (power=0.88, a=0.05, small effect size of 0.25)

PCL-5 responses were analyzed among National Guard members with recent SIB and no SIB, and respondents who did not complete PCL-5 measure were excluded from analyses of PTSD severity and seeking services. For the 64 respondents with recent SIB and complete PCL-5 measures, T-test analyses of PCL-5 scores, grouped by seeking or not seeking services achieved a power of 0.52 with a significance of 0.05 and large effect size of 0.8. Of respondents with no history of SIB, 362 had complete PCL-5 measures, and T-test analyses achieved a power of 0.87 with a significance of 0.05 and small effect size of 0.3.

A categorical variable was created representing whether respondents did not meet clinical cutoffs for either PTSD or Depression (coded 0), met the clinical cutoff for a

single diagnosis of either PTSD or Depression (coded 1), or met the clinical cutoff for both PTSD and Depression (coded 2). A Chi Squared test was used to explore the proportion of service members meeting the clinical cutoff for diagnosis of both PTSD and Depression (as compared to a single diagnosis of PTSD or Depression) that sought services. Chi Squared analyses of seeking services by category of mental health diagnosis for the subset of the sample with recent SIB (power=0.81 a= 0.05, moderate effect size of 0.4) and for those with no SIB (power=0.93 a= 0.05, small effect size of 0.2) were examined.

Results

An analysis was conducted to determine the prevalence of seeking each category of treatment (outreach, medical health, mental health, and spiritual supports) or multiple types of treatment among National Guard service members with recent SIB compared to no SIB (Table 3.2). National Guard members with recent SIB had a higher prevalence of seeking services than those with no history of SIB.

Chi Square tests of demographic variables addressed the relationship of sex, ethnicity, age category, relationship status, and rank variables to seeking services among those in the sample with recent SIB and no SIB. For those with no history of SIB, Chi Squared tests of demographic characteristics and seeking services achieved power between 0.8 and 0.94, with significance of 0.05, and small to moderate effect (0.15 to 0.35). Findings indicate that among those with no history of SIB, female sex ($\chi^2[1,561]=8.48$, $p<.01$), age 41 and over ($\chi^2[4,560]=23.87$, $p<.01$), being divorced or legally separated ($\chi^2[6,559]=13.81$, $p=.032$), and enlisted (E-5 to E-6) rank ($\chi^2[5,560]=13.88$, $p<.016$) were significantly associated with seeking some type of

service. Chi Squared tests of demographic characteristics and seeking services among those with recent SIB had statistical power between 0.87 and 0.88, with significance of 0.05, and small to moderate effect size (0.17 and 0.3). Results show that demographic characteristics were not associated with seeking services in this subset of the sample.

More than three quarters of respondents with recent SIB indicated engaging in some type of service (77.7%, n=87), compared to 73.2% (n=420) of those with no history of SIB. Over half of respondents with recent SIB sought multiple types of services (58.9%, n=66) compared to under a quarter (22.3%, n=125) of those with no SIB. Chi Squared tests were used to further explore the relationship between having recent SIB (compared to no history of SIB) and seeking services. Results showed that a significantly greater proportion of those with recent SIB sought services ($\chi^2[1,686]=13.27$, $p<.01$).

A greater proportion of National Guard members with recent SIB than no SIB met the clinical cutoff for a mental health diagnosis. The clinical cutoff of 10 on the PHQ-9 indicates a high likelihood of moderate Depression. Just under half of respondents with recent SIB (47.2%, n=51) met or exceeded the clinical cutoff for Depression as compared to 7.3% (n=40) of those with no SIB. The clinical cutoff of 33 on the PCL-5 indicates high likelihood of PTSD. Around two-fifths (40.6%, n=26) of respondents with recent SIB had a total score 33 or higher on the PCL-5 as compared to 8.3% (n=30) of those with no SIB. One-third of respondents with recent SIB (33.9%, n=21) met the clinical cutoff for both Depression and PTSD as compared to only 5.3% (n=19) of those with no SIB. Results suggested that almost half of National Guard members with recent SIB have high likelihood of at least moderate depressive symptoms and met diagnostic criteria for

PTSD. Table 3.3 highlights specific information on prevalence of mental health outcomes.

National Guard service members with recent SIB and meeting the cutoff for mental health diagnosis had a substantially higher prevalence of seeking services than did those with no SIB. Within the subsample of service members with recent SIB who did not meet cutoffs for any mental health diagnosis, 90.0% (n=27) sought services. Of those with recent SIB and meeting the cutoff for Depression, 90.1% (n=46) sought some type of treatment or service compared to 62.5% (n=25) of those with no SIB. For service members with SIB who met the clinical cutoff for PTSD, 96.2% (n=25) sought services compared to 63.3% (n=19) of those with no SIB. All of the National Guard personnel with recent SIB that also met clinical cutoffs for both Depression and PTSD (n=21) sought some kind of services compared to 63.2% (n=12) of those with no SIB, and 90.4% (n=19) of those with recent SIB sought multiple service types. Table 3.4 shows prevalence of seeking any services among those with recent SIB and no SIB.

To understand the association of Depression and PTSD severity and seeking services, T-tests of PHQ-9 and PCL-5 scores by seeking or not seeking services among service members with recent SIB and no SIB were examined. Findings revealed that there were not significant differences in Depression scale total scores (T[106]=-0.89, p=.39) or PTSD scale total scores (T[62]=-0.37, p=.71) between National Guard members with recent SIB who sought services as compared to those did not seeking any services. Results show that among National Guard personnel with no history of SIB, Depression scale scores (T[545]=16.37, p<.01) and PTSD scale scores (T[360]=21.34, p<.01) were significantly associated with seeking services.

Chi-Squared tests examined the relationship of seeking services and meeting the clinical cutoff for both Depression and PTSD as compared to meeting the cutoff for a single diagnosis. Due to small counts within subgroups among service members with recent SIB, a Fisher's Exact test was used. Results indicate that occurrence of single or dual diagnosis was not significantly associated with seeking services among those with recent SIB (p=.11) or among those with no history of SIB ($\chi^2[1,40]=0.007$, p=.94).

Discussion

Findings show that over 90% of National Guard service members with recent SIB sought services regardless of whether they met the clinical cutoff for Depression or PTSD. Conversely, just over 60% of those with no history of SIB who met criteria for Depression, PTSD or both Depression and PTSD sought services compared to around one-third with no SIB that had no diagnosis. These findings differ from previous research suggesting that half or fewer of National Guard personnel meeting mental health diagnostic criteria sought treatment (Gorman et al., 2011; Kehle et al. 2010). However, these findings are consistent with previous studies indicating that greater mental health symptom severity is associated with seeking treatment (Goodwin et al. 2014; Harpaz et al., 2014; Primack et al., 2017; Stanley, Hom, & Joiner, 2015). Additionally, the prevalence of seeking services was the highest among those with recent SIB and co-occuring Depression and PTSD, and this is consistent with research finding that those with multiple mental health issues (three or more) were most likely to seek mental health treatment (Gorman et al., 2016).

Findings indicate that among those with no history of SIB, female sex, older age, being divorced or legally separated, and enlisted rank were significantly associated with

seeking some type of service, though no association was found in the subset of the sample with recent SIB. Among those with recent SIB, all demographics had categories with 0 non-seekers of services, and non-significant results may be due to lack of comparability of seeking or not seeking services on those categories of demographic variables.

Findings show that higher scores (indicating greater challenges) on Depression and PTSD measures were not significantly correlated with seeking some type of service among those with recent SIB as we predicted, but were found to be associated with seeking services among those with no history of SIB. Interestingly, meeting the clinical cutoff for both Depression and PTSD compared to only a single diagnosis was not significantly associated with seeking services among those with recent SIB or among those with no history of SIB.

The findings of this research suggest that there may be unique characteristics of National Guard personnel with recent SIB that influence service seeking but are not related to symptoms of Depression or PTSD. Results reinforce the importance of screening for recency of SIB in addition to mental health symptoms in understanding treatment seeking, and show that recency of SIB may be more important to understanding treatment seeking outcomes than diagnosis of Depression or PTSD. Additionally, this research supports the premise that mental health severity is associated with seeking services, and highlights that within National Guard members in this sample with no history of SIB who met criteria for Depression or PTSD, one-third are still not seeking any services. Mental health intervention programs may benefit from developing separate

services to address the needs of those with Depression or PTSD that are separate from addressing the needs of those with recent SIB.

As previous research shows that only about half of National Guard personnel meeting criteria for a mental health diagnosis seek treatment (Gorman et al., 2011; Kehle et al. 2010), and the number of suicides among National Guard members who were not engaged in treatment has increased substantially in recent years (Department of Veterans Affairs, 2018), clinicians should take note of National Guard service members who are diagnosed with a single mental health issue, or who demonstrate symptoms of mental health challenges but may be pre-diagnosis or may not have sought services and ensure encouragement and support to engage them in care.

Limitations

The majority of respondents were male, Caucasian, married, and from a similar geographic region. Results from this research are applicable to National Guard service members from this region, but may not be generalizable nationally due to likely demographic differences in other areas.

When examining the subsample of respondents with recent SIB, analyses of the relationship between PHQ-9 scores and seeking services achieved sufficient power but had a large effect size, and analyses of PCL scores were underpowered due to a low number of cases with recent SIB completing the measure (n=64). Significant relationships were not found between each of these measures and seeking services, but caution should be used when interpreting findings due to vulnerability to error. Variability between those who sought services and those who did not was limited due to the majority of the subsample with recent SIB seeking some type of services. Deletion of

cases with missing data relating to seeking services was used and some data on other variables was lost.

Over half of respondents with recent SIB, and the majority of respondents with no SIB did not meet the clinical cutoff for likelihood of moderate Depression or diagnosis of PTSD. Analyses of co-occurring mental health challenges included only cases with completed PHQ-9 and PCL-5 scales though sufficient power was achieved. Thus, caution should be used when interpreting results.

The timing relationship between SIB, onset of mental health challenges, and timing of seeking services was not discernable in the secondary data used for these analyses. Further research relating to mental health and suicide in relation to treatment seeking would benefit from time-specific data collection and analysis. Small numbers of respondents indicated seeking a single type of treatment, and almost 60% of respondents with recent SIB sought multiple types of treatment or resources.

The last item on the PHQ-9 measure asks about thoughts that the respondent would be better off dead. This item was included in analyses as it is part of the total PHQ-9 score and needed to understand clinical cutoff results, but this may have impacted the ability to see differences by recency of SIB. Further studies may benefit from use of a modified PHQ-9 measure that does not include this item to understand differences in the other depressive symptoms and SIB.

It was not possible to determine if Depression or PTSD were predictive of specific types of treatment seeking due to low counts within subgroups. Additionally, it was not possible to determine if separate types of suicide outcomes (recent suicidal ideation, history of suicidal ideation, recent suicide attempt, history of suicide attempt)

were influential on seeking treatment due to small counts within these subgroups. Future research would benefit from a focus on sampling by type of treatment seeking or sampling by specific history of suicidal ideation or behavior, such that results could shed light on types of services sought or aspects of suicide history.

Table 3.1

Sample Demographics

Characteristics	Category	Recent SIB (n=112)	No SIB (n=574)
National Guard Membership	Utah Army National Guard	41.1% (n=46)	29.4% (n=164)
	Idaho Army National Guard	38.4% (n=43)	48.6% (n=271)
	Utah Air National Guard	19.6% (n=22)	21.9% (n=122)
	Idaho Air National Guard	---	0.2% (n=1)
Sex	Male	81.3% (n=91)	85.7% (n=481)
	Female	18.8% (n=21)	14.3% (n=80)
Ethnicity	Caucasian	86.4% (n=95)	85.9% (n=482)
	Multiple Ethnicities	7.3% (n=8)	2.7% (n=15)
	Other	3.6% (n=4)	2.7% (n=15)
	Hispanic/Latino	0.9% (n=1)	5.3% (n=30)
	African American	---	1.6% (n=9)
	Asian	0.9 (n=1)	2.1 (n=12)
	Native American Indian	0.9 (n=1)	0.7 (n=4)
	Native Hawaiian/Pacific Islander	---	0.9 (n=5)
Age	18-21	3.6% (n=4)	10.0% (n=56)
	22-30	27.0% (n=30)	25.7% (n=144)
	31-40	44.1% (n=49)	35.2% (n=197)
	41-50	23.4% (n=26)	20.4% (n=114)
	Over 50	1.8% (n=2)	8.8% (n=49)
Relationship Status	Married	70.5% (n=79)	69.2% (n=387)
	Legally separated or divorced	9.8% (n=11)	4.1% (n=23)
	Unmarried, not currently in a relationship	7.1% (n=8)	13.2% (n=74)
	Unmarried, in a committed relationship and living together	5.4% (n=6)	7.5% (n=42)

Table 3.1 *(continued)*

Sample Demographics

Characteristics	Category	Recent SIB (n=112)	No SIB (n=574)
	Unmarried, in a committed relationship but not living together	3.6% (n=4)	5.0% (n=28)
	Other	2.7% (n=3)	0.7% (n=4)
	Widowed	0.9 (n=1)	0.2 (n=1)
Rank	Junior Enlisted (E-1 to E-4)	20.5% (n=23)	27.0% (n=151)
	Enlisted (E-5 to E-6)	33.0% (n=37)	30.4% (n=170)
	Senior Enlisted (E-7 to E-9)	28.6% (n=32)	19.5% (n=109)
	Warrant Officer (WO-1 to WO-5)	1.8% (n=2)	4.8% (n=27)
	Junior Officer (O-1 to O-3)	7.1% (n=8)	7.3% (n=41)
	Senior Officer (O-4 to O-9)	8.9% (n=10)	11.1% (n=62)

Table 3.2

Prevalence of Seeking Treatment or Services by Type

Type	Service	Recent SIB Prevalence (n)	No SIB Prevalence (n)
Outreach Only	TRICARE referral; Military OneSource referral; Military Family Life Consultant (MFLC)	1.8% (2)	2.1% (12)
Medical Care Only	General Medical Doctor at a military facility; VA hospital or Community Based Outpatient Center; Civilian facility	3.6% (4)	6.3% (35)
Mental Health Only	Mental health professional at a military facility; VA hospital or Community Based Outpatient Center; National Center for Veteran Studies (NCVS); Civilian facility	8.0% (9)	2.9% (16)
Spiritual Support Only	Military chaplain or Civilian clergy	5.4% (6)	2.9% (16)
Multiple Types	Any two or more types of service	58.9% (66)	22.3% (125)
Any Service Use		77.7 % (87)	73.2 % (420)
No Service Use		22.3% (25)	26.8% (154)

Note: 14 cases were missing information on type of services sought

Table 3.3

Prevalence of Mental Health Outcomes

Mental Health Outcome Mean (SD)	**Description**	**Recent SIB Prevalence (n)**	**No SIB Prevalence (n)**
PHQ-9 Depression Scale *(possible 0 to 27)* 10.6 (7.1)	9 items rated 0-3 Clinical cutoff of 10	47.2% (51) at/above clinical cutoff	7.3% (40) at/above clinical cutoff
PCL-5 PTSD Scale *(possible 0 to 80)* 30.5 (21.4)	20 items rated 0-4 Clinical cutoff of 33	40.6% (26) at/above clinical cutoff	8.3% (30) at/above clinical cutoff
Comorbid Depression and PTSD		33.9% (21) at/above clinical cutoff on both measures	5.3% (19) at/above clinical cutoff on both measures

Table 3.4

Prevalence of Seeking Services by Diagnosis

Mental Health Outcome Me	**Recent SIB Prevalence (n)**	**No SIB Prevalence (n)**
No Diagnosis	90.0 (27)	34.8 (110)
PHQ-9 Depression Scale *(Clinical cutoff of 10)*	90.1% (46)	62.5% (25)
PCL-5 PTSD Scale *(Clinical cutoff of 33)*	96.2% (25)	63.3% (19)
Comorbid Depression and PTSD *(Meeting clinical cutoff for Depression and PTSD)*	100.0% (21)	63.2% (n=12)

CHAPTER 4. TRAUMA HISTORY AND TREATMENT SEEKING IN NATIONAL GUARD PERSONNEL WITH SUICIDAL IDEATION OR BEHAVIOR

Introduction

Efforts to identify suicide risk factors and develop effective prevention and intervention strategies have not had the desired effect of decreasing the prevalence of military and veteran suicides (Kirsch, 2014). Veterans represent 20% of suicide deaths annually in the United States, making up only 1% of the U.S. population (Department of Veteran Affairs, 2010). A recent report from the Department of Veterans Affairs (2016a) presented findings that suicide risk was 21% higher for U.S. veterans than their non-veteran counterparts.

The Western region of the United States has been noted as an area of concern with regard to suicide rates (Department of Veterans Affairs, 2016a). Of thirteen states in the Western region, more than half (n=7) had veteran suicide rates (VSR) that significantly exceeded the national veteran suicide rate (30.1) and the national suicide rate (17.5), as well as being greater than the regional veteran suicide rate (35.0) and the regional suicide rate (19.0). These states were Nevada (VSR=48.2), Idaho (VSR=47.2), Arizona (VSR=44.1), New Mexico (VSR=44.1), Utah (VSR=43.4), Colorado (VSR=42.9), and Oregon (VSR=39.4). These data highlight the necessity to focus further military and veteran suicide research in the Western region.

A recent study using Army Study to Assess Risk and Resilience in Servicemembers (STARRS) data (Nock et al., 2018) found that over half of suicide attempts occurred within a year of onset of suicidal ideation, and over 90% of attempts occurred within five years of onset of suicidal ideation. Additionally, military personnel

and veterans having a history of suicide attempt increases the likelihood of subsequent attempts (Hazlett et al., 2016), especially for those who had not been engaged in treatment (Bryan, Rudd, & Wertenberger, 2016).

Suicide exposure is prevalent in the National Guard and increases risk for suicidal ideation and behavior (SIB). A study of National Guard service members from two Western states found that almost two-thirds (65.4%) of respondents knew at least one person that had died by suicide. Most who reported SIB after being exposed to suicide had previous suicidal ideation or attempt (Bryan, Cerel, & Bryan, 2017) suggesting that previous SIB increases risk of subsequent ideation or behavior. These findings are similar to studies of active duty and veteran samples (Bryan, Rudd, & Wertenberger, 2016; Hazlett et al., 2016).

National Guard personnel serve in units within their state of residence. Among all military service members, about 38% of service members are National Guard and Reserve personnel (National Academies Press, 2019). It is important to examine SIB among National Guard service members considering the concentration of higher suicide rates in the Western United States.

Engagement in services is a key to addressing suicide risk. Mental health challenges, if left untreated, can increase risk for suicide (Burns & Mahalik, 2011; Gallegos, Streltzov, & Stecker, 2016; Lusk et al., 2015). Half or less of National Guard service members who need mental health services actually engage in care (Gorman et al., 2011; Kehle et al. 2010). Kehle et al. (2010) found in a study of National Guard troops that were previously deployed, that over half of those with mental health challenges were not engaged in care. In a study of engagement in care by National Guard members and

their significant others, less than half of those who met criteria for mental health issues sought services (Gorman et al., 2011). To highlight the importance of seeking treatment, in one decade (2005 to 2016) the suicide rate increased over 25% among veterans not engaged in VA healthcare as compared to an increase of 13.7% for those engaged in VA services (Department of Veterans Affairs, 2018).

Though it is not uncommon for studies of military personnel and veterans to focus on wartime trauma, trauma prior to military service may also lead to mental health challenges. A study of soldiers deployed to Iraq or Afghanistan who sought behavioral health treatment found that 83% reported at least 1 type of adversity during childhood, and over half reported 3 or more types of adversity (Applewhite et al., 2016). Multiple studies show a relationship between trauma exposure during childhood and negative mental health outcomes including SIB. Gradus and colleagues (2013) found in a 10-year longitudinal study of Marines, that childhood trauma, suicide attempts prior to military service, and sexual harassment during training were the primary risk factors for suicide attempt. Half of those in the study who were lost to suicide had reported at least one such stressor (Gradus et al., 2013). A study of U.S. Army soldiers who had attempted or completed suicide (Perales et al., 2012) found that 64.7% of suicide attempt survivors and 43.3% of those that completed suicide had a history of childhood trauma. Youssef et al. (2013) found in a study of both military personnel and veterans, that when controlling for PTSD and combat related exposures, childhood trauma was significantly associated with depression and suicidal ideation.

In a study of National Guard service members, Rudenstine et al. (2015) found similarly that adverse events during childhood predicted post-deployment onset of

depression in soldiers with no pre-deployment history of depression or PTSD. White et al. (2018) found that for National Guard service members with Military Sexual Trauma (MST), childhood sexual trauma was a stronger risk factor for suicide attempt than sexual trauma during military service. A study by Kline and colleagues (2016) of morbid thoughts and suicidal ideation (MTSI) in returning National guard personnel found that pre-deployment MTSI increased the likelihood of post-deployment MTSI 9-fold, and was the strongest predictor of MTSI post-deployment among these troops. Having PTSD, depression, or pre-military civilian trauma history was also associated with post-deployment MTSI (Kline et al., 2016).

There is a strong connection in the literature between childhood traumatic experiences and suicidal ideation or attempt even when controlling for combat exposure, MST and PTSD. Pre-deployment traumatic experiences was significantly associated with onset of depression, and morbid and suicidal thoughts post-deployment. The role of National Guard pre-military trauma has been explored relating to outcomes of SIB, but the association between childhood trauma and seeking services has not been explored, and given the prevalence of childhood trauma among military personnel, further investigation of treatment engagement is necessary.

Research Aim

Childhood trauma is associated with suicide risk in the National Guard (Kline and colleagues, 2016; Rudenstine et al., 2015; White et al., 2018), and treatment engagement has been shown to decrease suicide risk (Department of Veterans Affairs, 2018; Gorman et al., 2011; Kehle et al. 2010) but no studies have been found that identify trauma prior to military service as a barrier or facilitator to National Guard service members

engagement in services. Due to the influence that childhood trauma was shown to have on SIB, it is important to investigate this novel topic further. Studies have shown that sexual harassment during military training (Gradus et al., 2013) and childhood sexual trauma (White et al. 2018) were primary risk factors for suicide attempt, but no studies have addressed sexual trauma history and seeking services among those with recent SIB.

The aim of this study is to explore the association between pre-military trauma and seeking services in National Guard personnel with recent SIB compared to those with no SIB. Since trauma history could increase mental health severity which has been associated with increased engagement in services, and pre-military trauma has been uniquely associated with increased risk of SIB, we hypothesized that a significantly greater proportion of those with recent SIB and pre-military trauma exposure would seek treatment as compared to those with military trauma exposure. Additional analyses explore the relationship between history of sexual traumas and seeking services for those with recent SIB and no SIB.

Methods

Study Design

Addressing trauma history and treatment seeking for National Guard troops is an important addition to the research given relationship of trauma history to SIB and the risk of suicide for those not engaged in care. To our knowledge there is no existing research that specifically examines pre-military trauma history and treatment seeking in National Guard personnel with recent SIB.

This study was based on surveys of military personnel in the Utah Army and Air National Guards, and the Idaho Army and Air National Guards. This study is a secondary

data analysis of the original online survey, conducted by the National Center for Veteran Studies (NCVS), and promoted via links on National Guard websites, social media, and command email distribution. Information about risks and benefits of responding to the survey and about maintenance of confidentiality were provided as part of the original online survey.

Participants

Almost one thousand National Guard members completed the survey (N=997). Of those, 112 cases with complete data on seeking services reported recent SIB and were included in analyses of service members with recent SIB. As a comparison, 5 cases that reported no history of SIB were analyzed. Most of those with recent SIB were in the Utah Army National Guard (41.4%; n=46) or the Idaho Army National Guard (38.4%; n=43). Most were male (81.3%; n=91) and Caucasian (86.4%; n=95), married (70.5%; n=79), and within the enlisted ranks (20.5% junior enlisted E-1 to E-4; 33.0% enlisted E-5 to E-6; 28.6% senior enlisted E-7 to E-9). The largest prevalence of age (collected in ten-year intervals) was between 31 and 40 years old (44.1%; n=49). Table 4.1 provides details of demographic characteristics for those with recent SIB and those with no SIB.

Measures

Trauma History

The Life Events Checklist for DSM-5 (LEC-5) is a self-report measure that assesses multiple types of stress over the lifetime, and includes sixteen items known to cause distress or PTSD (Weathers et al., 2013a). The measure was modified in the original survey with a four-point nominal scale asking if events happened to the respondent before military service, to the respondent during military service, to someone

else before military service, or to someone else during military service. Items in the checklist include but are not limited to stressors such as natural disaster, physical assault, sexual assault, combat, and exposure to sudden violent death (Weathers et al., 2013a). A test of internal consistency revealed that the 16-item modified LEC is a reliable measure of assessing type and timing of trauma (Cronbach's $\alpha = 0.849$).

Treatment Seeking and Use of Services

Respondents were asked to indicate their use of twelve types of outreach, medical and mental health services, incorporating chaplain or religious supports on a 3-point scale (scale included no use, use within the last year, and use more than a year ago). For this study, a dummy variable was created highlighting whether respondents used any type of service (coded 1) or no services (coded 0). Table 4.2 highlights the prevalence of use of each of the twelve services.

Suicidal Ideation and Behavior

Suicidal ideation and behavior **(**SIB) was assessed from items from the Self-Injurious Thoughts and Behaviors Interview (Nock et al., 2007), asking about respondents' history (thoughts, plans, or attempts) and recentness (within the past week, month, year, or more than a year ago) of killing themselves. Respondents were able to indicate a history of multiple types and the associated timing of SIB, and timing of one type of SIB compared to another (example attempt within the past year and ideation within the past year) was not discernable. Due to the influence of previous SIB on subsequent SIB and the risk of SIB within a year of initial suicidal ideation shown in earlier research, this study focused on the subset of National Guard service members in

this sample that reported SIB within the last year, with comparison to the subset of the sample that reported no history of SIB.

Statistical Analyses

Analyses of missing data were conducted using an MCAR test (Little, 1988), which demonstrated that missing data were missing completely at random (χ^2[9,997]=5.77, p=.76). For assessment of variation in data with a MCAR pattern of missingness, deletion of cases with missing data on variables involved in analyses was recommended (Scheffer, 2002), which is consistent with recommendations in earlier research (Little, 1988). In this study, cases were excluded from analyses that were missing data on measures or variables relating to specific analyses.

A total of 997 National Guard personnel responded to the original survey. Ninety-five cases were missing data on SIB and an additional 57 cases were missing data on the outcome variable of service engagement (yes/no) and were omitted from analyses. Due to the focus on recency of SIB, 159 respondents who reported SIB more than a year ago only were omitted from analyses. Responses to the LEC were evaluated, and no data were missing, thus all 686 remaining cases were included in analyses (112 with recent SIB and 574 with no history of SIB). Timing of trauma history was consolidated into 4 categories (no trauma exposure, pre-military trauma exposure, trauma exposure during military service, both pre-military and during-service trauma exposure). A variable was created combining the LEC items relating to sexual assault experiences and other unwanted sexual experiences into no sexual trauma (0), sexual trauma before military service (1), sexual trauma during military service (2), and sexual trauma both before and during service (3).

Results

Analyses were conducted to highlight the prevalence of the different types of trauma found on the LEC. Type and timing of trauma history was consolidated into a categorical variable including no trauma history, trauma exposure before military service, trauma exposure during military service, and both timings of trauma exposure. The vast majority of respondents with recent SIB (95.5% n=107) and with no history of SIB (89.4, n=513) experienced some type of trauma during their lifetime. A greater prevalence of respondents with recent SIB (81.3%, n=91) had traumatic experiences both before and during military service than did respondents with no history of SIB (62.0, n=356).

Of respondents with recent SIB, the most prevalent trauma experiences before military service were “other unwanted or uncomfortable sexual experience (e.g., sexual harassment)” (31.3%, n=35), “natural disaster” (27.7%, n=31), “assault with a weapon” (25.9%, n=29), and “transportation accident” (23.2%, n=26). The most prevalent types of trauma during military service were “combat” (43.8%, n=49) and “exposure to toxic substance” (34.8%, n= 39). Over one-third of respondents (42.9%, n=48) reported experiencing a “transportation accident” and 30.4% (n=34) reported experiencing “physical assault” both before and during military service.

Among those with no history of SIB, the most prevalent types of traumatic experiences were “transportation accident” prior to military service (29.3%, n=168), “combat” (32.8%, n=128) and “exposure to toxic substance” (23.9%, n=137) during military service, and “transportation accident” (27.7%, n=159) both before and during military service. Table 4.3 provides details of traumatic experiences by timing for those with recent SIB and no SIB.

An analysis of seeking services showed that the majority of National Guard personnel with recent SIB (77.7%, n=87) and with no history of SIB (73.2%, n=420) sought at least one type of treatment or service. Over half of respondents with recent SIB (58.9%, n=66) sought multiple types of services, compared to under one-quarter of respondents with no SIB (22.3%, n=125). Table 4.2 provides details of seeking services by category.

When examining data on seeking treatment by timing of traumatic exposure, those with no history of SIB (power=0.87, a=0.05, small effect size of 0.15), results show that both pre-military and during military traumatic experiences were associated with seeking services compared to those with only pre-military or military traumas (χ^2[3,574]=20.77, p<.01), though there were not significant differences in seeking services between those with pre-military only trauma exposure and military only trauma exposure as predicted (χ^2[1,157]=0.349, p=.56),

It was determined that all participants with recent SIB and only pre-military trauma sought some type of service, thus comparing seeking vs. not seeking services considering all timings of trauma was not feasible.

Traumatic sexual experiences were more prevalent among those with recent SIB (41.9%, n=47) than with no SIB (24.0%, n=138). Chi squared analyses were used to examine the relationship between sexual trauma and recent compared to no SIB (power=0.97, a=0.05, small effect size of 0.15), and results that having a sexual trauma history is significantly associated with recent SIB (χ^2[1,686]=15.28, p<.01). Examining data by timing of sexual trauma (power=0.92, a=0.05, small effect size of 0.15),

experiencing sexual trauma in military service only, and both pre- and during military service were significantly associated with recent SIB ($\chi^2[3,686]=20.11$, $p<.01$).

Further analyses assessed the relationship between timing of sexual trauma and seeking services. History of sexual trauma (yes/no) was not associated with seeking services among those with recent SIB ($\chi^2[1,112]=1.48$, $p=.22$) or no history of SIB, ($\chi^2[1,574]=1.77$, $p=.18$).

Discussion

Most of the National Guard personnel in this study experienced some type of trauma during their lifetime, and 81.3% (n=91) had traumatic experiences both before and during military service. Most participants sought some type of service. A greater prevalence of those with recent SIB (compared to no SIB) had lifetime trauma exposure, and had traumatic experiences during both pre-military and military timeframes. It is imperative that clinical assessment of National Guard service members include type and timing of trauma history due to the high number of service members entering the military having already been exposed to traumatic events.

Having traumatic exposure both pre- and during military service was associated with seeking services among those with no history of SIB, and unfortunately seeking services among those with recent SIB by timing of trauma was not discernable due to limitations in the data. Previous literature indicated pre-military traumatic experiences increased risk for SIB but the relationship of trauma and seeking services is under-developed, and these findings add valuable information to the literature on this subject. Future research that focused sampling on seeking services and history of SIB would clarify the relationship between timing of trauma exposure and seeking treatment.

Almost one-third of those with recent SIB experienced “other unwanted or uncomfortable sexual experience (e.g., sexual harassment)” prior to military service. Having a history of sexual trauma, including sexual harassment, unwanted sexual experiences and sexual assault, was significantly associated with recent SIB. Exposure to these types of trauma during military service, and both pre- and during military service were also associated with recent SIB. Though history of sexual trauma was not found to be associated with seeking services among either those with recent SIB or no history of SIB, preliminary findings on the association of sexual trauma and SIB are an important addition to the literature.

Though seeking services by trauma timing was not discernable among those with recent SIB, SIB and trauma exposure may increase severity of mental health challenges, and exposure to sexual trauma has been shown to increase risk of suicide attempt. Due to the subsample with recent SIB having a high prevalence of traumatic exposure, findings showing a high prevalence of seeking services support earlier research showing that increased mental health severity was associated with seeking treatment. Further research is needed to understand how timing or recency of traumatic experiences may influence seeking services due to the relationship of trauma and suicide risk shown in previous research.

Limitations

There are some challenges interpreting data due to the nature of variables. One challenge with this secondary data is the distribution of demographics. Most respondents were male, Caucasian, and married, thus possibly contributing to limited variation among subjects with regard to seeking treatment. All participants were members of the Army

and Air National Guard units in a close geographic area (Idaho and Utah), and this may limit the ability to understand treatment seeking and trauma in Reserve Component personnel nationally.

Pair-wise deletion of cases missing data on seeking services at the outset of this study caused some data on other variables to be omitted. From 120 National Guard members with recent SIB, 112 were able to be considered for analysis. Due the overwhelming prevalence of seeking services, analyses compared those with trauma only during the time of their military service to those with trauma both before and during military service. Counts within groups were small and may not have accurately shown differences in seeking services.

In this study, timing of traumatic exposure was measured in categories in the context of military service (before or during service), and those that joined the service after age 18 could have had pre-military trauma in adulthood. Studies using data with greater specificity of the timing of trauma exposure, possibly incorporating recency of traumatic experiences would clarify contextual factors that may influence treatment seeking.

Additionally, seeking services was examined as a dichotomous variable, limiting the ability to understand nuances in the relationships of types of services sought and timing of trauma. The categories of the LEC did not allow for detailed exploration of when traumatic events occurred, and did not discern how many times a particular type of trauma occurred, limiting the amount of detail available in results of analyses. Previous literature on timing of trauma specified trauma during childhood, and the present study examines pre-military trauma. The two terms are not necessarily interchangeable as the

data are not clear on what age National Guard service members joined the military, and some respondents may have experienced pre-military trauma during adulthood if they joined the military after age 18. Results should be interpreted in that context.

The LEC contains multiple types of experiences that may be common and not generate a traumatic response in National Guard respondents, such as transportation accident, exposure to toxic substances or natural disaster. It is unclear if respondents indicated exposure to these types of events without feeling traumatized by them. It is also unclear if respondents indicated more than one type of traumatic exposure for a single incident, such as a trauma involving physical abuse and sexual abuse, so reports of traumatic exposure cannot be assumed to be isolated experiences.

Some respondents indicated experiences of "combat" prior to military service or both before and during military service. Among the 112 with recent SIB, 8% (n=9) reported pre-military combat, and among the 574 with no SIB 9% (n=52) indicated pre-military combat. Some participants may have had pre-military experiences that were interpreted as "combat" such as gang violence in their neighborhood, growing up in an area with combat activity, or witnessing something that they perceived as "combat", but it is difficult to discern from current data any specifics about these traumatic experiences. To maintain statistical power for analyses of those with recent SIB and due to lack of missing data, these cases were included in analyses. However, this is a limitation for the current study as it might have indicated some data quality issues and random responding.

Results on the relationship between timing of trauma exposure and seeking services may have been influenced to the high prevalence of experiencing both pre-military and during-military trauma and the high prevalence of treatment seeking. Results

should be interpreted with caution. The large proportion of those with recent SIB having sought services may have influenced the relationships between trauma and treatment seeking in this subsample. Further research is needed addressing trauma history and treatment seeking specific to National Guard personnel. Sampling that maximizes the ability to identify differences by type and timing of trauma history and other factors that may be associated with seeking services would be beneficial in understanding the relationship between trauma and seeking services.

Table 4.1

Demographics of the Sample

Characteristics	Category	Recent SIB (n=112)	No SIB (n=574)
National Guard Membership	Utah Army National Guard	41.1% (n=46)	29.4% (n=164)
	Idaho Army National Guard	38.4% (n=43)	48.6% (n=271)
	Utah Air National Guard	19.6% (n=22)	21.9% (n=122)
	Idaho Air National Guard	---	0.2% (n=1)
Sex	Male	81.3% (n=91)	85.7% (n=481)
	Female	18.8% (n=21)	14.3% (n=80)
Ethnicity	Caucasian	86.4% (n=95)	85.9% (n=482)
	Multiple Ethnicities	7.3% (n=8)	2.7% (n=15)
	Other	3.6% (n=4)	2.7% (n=15)
	Hispanic/Latino	0.9% (n=1)	5.3% (n=30)
	African American	---	1.6% (n=9)
	Asian	0.9 (n=1)	2.1 (n=12)
	Native American Indian	0.9 (n=1)	0.7 (n=4)
	Native Hawaiian/Pacific Islander	---	0.9 (n=5)
Age	18-21	3.6% (n=4)	10.0% (n=56)
	22-30	27.0% (n=30)	25.7% (n=144)
	31-40	44.1% (n=49)	35.2% (n=197)
	41-50	23.4% (n=26)	20.4% (n=114)
	Over 50	1.8% (n=2)	8.8% (n=49)
Relationship Status	Married	70.5% (n=79)	69.2% (n=387)
	Legally separated or divorced	9.8% (n=11)	4.1% (n=23)
	Unmarried, not currently in a relationship	7.1% (n=8)	13.2% (n=74)

Table 4.1 *(continued)*

Demographics of the Sample

Characteristics	**Category**	**Recent SIB (n=112)**	**No SIB (n=574)**
	Unmarried, in a committed relationship and living together	5.4% (n=6)	7.5% (n=42)
	Unmarried, in a committed relationship but not living together	3.6% (n=4)	5.0% (n=28)
	Other	2.7% (n=3)	0.7% (n=4)
	Widowed	0.9 (n=1)	0.2 (n=1)
Rank	Junior Enlisted (E-1 to E-4)	20.5% (n=23)	27.0% (n=151)
	Enlisted (E-5 to E-6)	33.0% (n=37)	30.4% (n=170)
	Senior Enlisted (E-7 to E-9)	28.6% (n=32)	19.5% (n=109)
	Warrant Officer (WO-1 to WO-5)	1.8% (n=2)	4.8% (n=27)
	Junior Officer (O-1 to O-3)	7.1% (n=8)	7.3% (n=41)
	Senior Officer (O-4 to O-9)	8.9% (n=10)	11.1% (n=62)

Table 4.2

Prevalence of Seeking Outreach, Health, and Mental Health Services

Type	Service	Recent SIB	No SIB
Outreach	TRICARE referral	24.5% (n=27)	9.6% (n=55)
	Military OneSource referral	17.0% (n=19)	8.7% (n=50)
	Military Family Life Consultant (MFLC)	8.1% (n=9)	4.0% (n=23)
Health Care	General medical doctor at a civilian facility	27.0% (n=30)	22.7% (n=130)
	General Medical Doctor at a military facility	21.4% (n=24)	8.4% (n=48)
	General Medical Doctor at a VA hospital or Community Based Outpatient Center	20.5% (n=23)	9.1% (n=52)
Mental Health	Mental health professional at a civilian facility	41.1% (n=46)	11.7% (n=67)
	Mental health professional at a VA hospital or Community Based Outpatient Center	32.1% (n=36)	7.3% (n=42)
	Mental health professional at a military facility	25.9% (n=29)	6.3% (n=36)
	Mental health professional at the National Center for Veteran Studies (NCVS)	4.5% (n=5)	1.2% (n=7)
Spiritual Support	Military chaplain	24.1% (n=27)	8.4% (n=48)
	Civilian clergy	24.1% (n=27)	8.7% (n=50)
Any Service Use		77.7 % (87)	73.2 % (420)
No Service Use		22.3% (25)	26.8% (154)

Note: Some respondents sought more than one type of service

Table 4.3

Prevalence of Trauma History

Trauma Type	Recent SIB			No SIB		
	Before Military Only % (n)	**During Military Only % (n)**	**Before and During Military % (n)**	**Before Military Only % (n)**	**During Military Only % (n)**	**Before and During Military % (n)**
Natural disaster (e.g., flood, hurricane, tornado, earthquake)	27.7% (31)	19.6% (22)	19.6% (22)	21.8% (125)	16.2% (93)	11.5% (66)
Fire or explosion	17.9% (20)	24.1% (27)	17.0% (19)	16.0% (92)	22.6% (130)	7.3% (42)
Transportation accident (e.g., car accident, boat accident)	23.2% (26)	19.6% (22)	42.9% (48)	29.3% (168)	17.9% (103)	27.7% (159)
Serious accident at work, home, or during recreational activity	17.0% (19)	21.4% (24)	25.0% (28)	17.2% (99)	17.9% (103)	11.5% (66)
Exposure to toxic substance (e.g., dangerous chemicals, radiation)	7.1% (8)	34.8% (39)	5.4% (6)	6.1% (35)	23.9% (137)	3.8% (22)
Physical assault (e.g., being attacked, hit, slapped)	18.8% (21)	17.0% (19)	30.4% (34)	18.3% (105)	11.0% (63)	11.1% (64)
Assault with a weapon (e.g., being shot, stabbed, threatened with a knife)	25.9% (29)	7.1% (8)	1.8% (2)	8.7% (50)	12.4% (71)	5.7% (33)

Table 4.3

Prevalence of Trauma History

Trauma Type	Recent SIB			No SIB		
	Before Military Only % (n)	**During Military Only % (n)**	**Before and During Military % (n)**	**Before Military Only % (n)**	**During Military Only % (n)**	**Before and During Military % (n)**
Sexual assault (e.g., rape, attempted rape, made to perform any type of sex)	17.0% (19)	8.0% (9)	4.5% (5)	9.1% (52)	6.1% (35)	1.4% (8)
Other unwanted or uncomfortable sexual experience (e.g., sexual harassment)	31.3% (35)	27.7% (31)	16.1% (18)	8.0% (46)	10.3% (59)	2.8% (16)
Combat	1.8% (2)	43.8% (49)	6.3% (7)	5.1% (29)	32.8% (128)	4.0% (23)
Captivity (e.g., being kidnapped, abducted, held hostage)	8.9% (10)	6.3% (7)	1.8% (2)	4.2% (24)	3.7% (21)	0.5% (3)
Life-threatening illness or injury	16.1% (18)	16.1% (18)	24.1% (27)	11.0% (63)	17.1% (98)	12.9% (74)
Severe human suffering	12.5% (14)	26.8% (30)	8.9% (10)	6.6% (38)	13.1% (75)	5.2% (30)
Sudden violent death (e.g., homicide, suicide)	21.4% (24)	37.5% (42)	12.5% (14)	8.4% (48)	17.2% (99)	7.5% (43)
Sudden accidental death	21.4% (24)	28.6% (32)	8.9% (10)	11.1% (64)	15.9% (91)	6.6% (38)

Table 4.3

Prevalence of Trauma History

Trauma Type	**Recent SIB**			**No SIB**		
	Before Military Only % (n)	**During Military Only % (n)**	**Before and During Military % (n)**	**Before Military Only % (n)**	**During Military Only % (n)**	**Before and During Military % (n)**
Serious injury, harm, or death you caused to someone else	8.9% (10)	23.2% (26)	4.5% (5)	5.1% (29)	9.6% (55)	2.6% (15)
Any Type of Trauma	3.6% (4)	10.7% (12)	81.3% (91)	14.5% (83)	12.9% (74)	62.0% (356)

Note: Some respondents experienced more than one type of trauma
Note: Respondents indicating one type of trauma before military service and another type during military service were included in "Before and During Military" for Any Type of Trauma

CHAPTER 5: NATIONAL GUARD TREATMENT SEEKING: SUMMARY AND FUTURE DIRECTIONS

This dissertation examined the relationship between three factors that have shown to influence treatment seeking and outcomes of seeking services. The three manuscripts were focused on identifying barriers and facilitators to seeking services including stigma and access to care, identifying key mental health symptom challenges that may influence seeking services, and exploring how trauma history, and specifically sexual trauma history, is related to suicidal ideation and behavior (SIB) and seeking services. Elements of stigma that particularly influence National Guard personnel with recent SIB were identified through prevalence of agreement with stigma-base statements, and self-stigma was identified as a sub-construct that was associated with not seeking services. Also recent SIB was found to be uniquely associated with seeking services, regardless of Depression or PTSD diagnosis, though findings also showed that seeking services was most prevalent among those with recent SIB and comorbid Depression and PTSD. Trauma history, and specifically sexual trauma history, was found to be associated with recent SIB and results on prevalence of pre-military trauma history among National Guard personnel add valuable knowledge to developing literature on the subject.

Findings of the three studies in this dissertation highlight the need for clinical focus on National Guard service members with recent SIB, particularly with regard to access to care, social support of seeking care and stigma-based concerns, National Guard members with mental health symptoms who are not engaged in treatment, and understanding seeking services in the context of trauma history. Findings also demonstrate avenues for future research that could clarify our understanding of seeking services among National Guard personnel with recent SIB.

Stigma, Access to Care and Seeking Services

Previous research shows that stigmatized individuals or groups experience shame, discrimination and rejection (Schreiber & McEnany, 2015), and that both public stigma (Fortney et al., 2016) and self-stigma (Lusk et al., 2015) have been associated with decreased engagement in treatment. Gorman and colleagues (2011) found that over a third of National Guard service members (40%) met criteria for mental health diagnosis, but only half of those meeting criteria sought treatment. Of National Guard personnel meeting criteria for mental health diagnosis, stigma-based concerns were cited when considering seeking treatment.

In the study of stigma and access to care, an evaluation of agreement with stigma -based statements highlighted concerns with confidentiality and career, and with practical issues such as cost of care. Self-stigma-based concerns were associated with not seeking services. Since engagement in treatment has been shown to decrease risk for suicide, education and outreach efforts specific to National Guard personnel of minority ethnicities that have had recent SIB may be warranted to encourage these troops to seek services.

At least a quarter of respondents agreed or strongly agreed with most statements relating to public stigma, and that it is hard to schedule appointments or get time off work to seek services. Over a third agreed that mental health care “costs too much money”. Results demonstrate that those with recent suicidal ideation or attempt have substantial challenges with stigma-based beliefs that may perpetuate concerns about treatment seeking. These results highlight the importance of considering suicidal ideation or attempt history in the context of assessment and treatment, especially since it has been

shown that chronic mental health challenges increase suicide risk (Burns & Mahalik, 2011; Gallegos, Streltzov, & Stecker, 2016).

To address access to care, services may need to consider incorporating flexibility of scheduling and format of engaging in services, such as enhancing telehealth options. Stigma-based concerns such as mental health treatment showing in military records and harm to careers may be addressed through educating National Guard troops on the relationship of seeking treatment and impact on career, or encouraging National Guard units to support engagement in services by changing unit-level response to seeking care.

Mental Health and Seeking Services

Research on mental health and treatment seeking has shown that greater challenges with mental health symptoms facilitated engaging in treatment. Psychiatric distress, including lower (worse) Global Assessment of Functioning (GAF) scores and presence of a Diagnostic and Statistical Manual (DSM) diagnosis, was found to predict mental health treatment engagement in service members with a history of deployment to Iraq or Afghanistan (Primack et al., 2017).

Our results showed that over three-quarters of National Guard service members with recent SIB sought at least one type of service compared to just under three-quarters of those with no history of SIB. Almost 60% of those with recent SIB sought multiple service types. More than 90% of respondents with recent SIB who also met criteria for Depression or PTSD sought services. These findings differ from previous research suggesting that half or fewer of National Guard personnel meeting mental health diagnostic criteria sought treatment (Gorman et. al, 2011; Kehle et al. 2010) but focus on those with recent SIB suggesting that our sample has greater mental health severity than

those in previous studies of National Guard service members. Because this study focuses on service members with recent SIB, the high prevalence of seeking services found is consistent with previous studies indicating that greater mental health symptom severity is associated with seeking treatment (Goodwin et al. 2014; Harpaz et al., 2014; Primack et al., 2017; Stanley, Hom, & Joiner, 2015). Additionally, the prevalence of seeking services was the highest among those with co-occuring Depression and PTSD, and this is consistent with research finding that those with multiple mental health issues (three or more) were most likely to seek mental health treatment (Gorman et al., 2016).

Higher scores (indicating greater challenges) on Depression and PTSD measures and co-occurring Depression and PTSD were not significantly correlated with seeking some type of service among those with recent SIB as we hypothesized. This was likely due to the high prevalence of seeking services among the National Guard members with recent SIB. Also, the last item on the PHQ-9 (Depression) measure asks about thoughts that the respondent would be better off dead. This item was included in analyses as part of the total measure score and need for clinical cutoff results, but this may have impacted the ability to see differences by recency of SIB. It is notable that SIB may, independent of mental health diagnosis, present unique challenges with mental health severity. This should be considered when implementing clinical evaluation and considering how to target intervention programs.

As previous research shows that only about half of National Guard personnel meeting criteria for a mental health diagnosis seek treatment (Gorman et al., 2011; Kehle et al. 2010), and the number of suicides among National Guard members who were not engaged in treatment has increased substantially in recent years (Department of Veterans

Affairs, 2018), clinicians should take note of National Guard service members who are diagnosed with a single mental health issue, or who demonstrate symptoms of mental health challenges but may be pre-diagnosis or may not have sought services and ensure encouragement and support to engage them in care.

Trauma Exposure and Seeking Services

Studies have found that adverse events during childhood were associated with Depression (Rudenstine et al., 2015) suicide attempt (White et al., 2018) and morbid thoughts and suicidal ideation (MTSI; Kline et al., 2016) among National Guard service members, and no previous studies were identified that examined the relationship between trauma history and seeking services for National Guard personnel.

Most of the National Guard personnel with recent SIB experienced some type of trauma during their lifetime (95.5% n=107), and 81.3% (n=91) had traumatic exposure both before and during military service. Also, most participants sought some type of service. Though seeking services did not appear to differ by timing of trauma exposure for those with no SIB, and was not discernable for those with recent SIB, SIB and trauma exposure may increase severity of mental health challenges. Findings of the high prevalence of seeking services among National Guard members with SIB support earlier research showing that increased mental health severity was associated with seeking treatment.

Having a history of sexual trauma, including sexual harassment, unwanted sexual experiences and sexual assault, was significantly associated with recent SIB, and two-fifths of those with recent SIB had a history of sexual trauma. Exposure to these types of trauma during military service, and both pre- and during military service were also

associated with recent SIB. Though history of sexual trauma was not found to be associated with seeking services among either those with recent SIB or no history of SIB, the high prevalence of exposure to sexual trauma warrants further exploration of this type of trauma among National Guard personnel with recent SIB.

Considering Multiple Factors in Seeking Services

Though EBP's may be effective for addressing mental health and suicide related concerns, limited access to services may impact seeking services, particularly for National Guard personnel. Inability to access DOD care during non-deployment times and non-active duty service, and transition between military and Veterans Administration (VA) or civilian healthcare, may significantly impact interest in or ability to consistently engage in needed care. Additionally, National Guard and Reserve troops that served less time on active duty, or those that have healthcare needs unrelated to "line of duty" injuries, may not have access to any military/VA healthcare, and community healthcare is often cost-prohibitive (Clauss, 2015). This challenge has implications for policy development to address limitations in access to care and to improve continuity of care between systems for National Guard personnel.

Being female was associated with greater agreement with public-stigma-based concerns, and though higher scores on this SBC subscale were not associated with seeking services (compared to not seeking services), focus should be given to sex-specific differences in experiences with seeking services and stigma-based challenges. Being of minority ethnicity was associated with not seeking services, and ethnicity-specific experiences should also be a focus of creating and improving services and unit culture.

Total scores on Depression and PTSD measures were not associated with seeking services. It is important to note that a high prevalence of those meeting clinical cutoffs for Depression and PTSD sought services. Consideration should be given to the relationship between self-stigma-specific concerns that were shown to inhibit seeking services, and presence of mental health symptoms which seemed to yield a high prevalence of seeking services.

For National Guard service members, pre-military traumatic experiences increased mental health severity including SIB (Gradus et al., 2013; Rudenstine et al., 2015; White et al., 2018). The role of trauma in seeking services for National Guard personnel with recent SIB is still not clearly understood. Since PTSD, depression, and pre-military trauma history were associated with post-deployment suicidal ideation in earlier research (Kline et al., 2016) consideration may need to be given to the relationship of traumatic experiences, mental health symptoms, and experiences or beliefs that may inhibit seeking services to fully understand how to develop and improve services and encourage treatment engagement to reduce suicide risk.

Revisiting the Interpersonal Theory of Suicide

In a study comparing prevalence of the three components of the Interpersonal Theory of Suicide (ITS) between Active Duty and National Guard personnel, National Guard service members were found to have greater perceived burdensomeness and thwarted belongingness than their Active Duty counterparts (Podlogar et al., 2017). The co-occurring experience of these two perceptions increases suicidal ideation according to the ITS (Joiner, 2005; Joiner et al., 2012). This is of particular importance considering that public stigma-based beliefs, or anticipating a negative reaction from others for

attributes that are perceived as unfavorable, may contribute to thwarted belongingness in National Guard personnel, thus increasing the risk for suicidal ideation.

In a predominantly National Guard sample, PTSD depression-related-arousal symptoms and emotional numbing symptoms were associated with thwarted belongingness, and emotional numbing was also associated with perceived burdensomeness. PTSD hyper-arousal symptoms were associated with fearlessness about death, an aspect of acquired capability for suicide (Pennings et al., 2017). Meeting diagnostic criteria for mental health conditions may not influence seeking services, but specific mental health symptoms may increase thwarted belongingness and perceived burdensomeness and inhibit seeking care, thus increasing risk for suicide.

Previous research by Lusk et al., (2015) found that negative thoughts of self (self-stigma) related to incapability of fully performing military duties was correlated with perceived burdensomeness, thwarted belongingness, and a decreased desire to live. This is particularly important since the stigma and access to care study found that greater challenges with self-stigma were associated with not seeking treatment, and earlier research shows that not being engaged in treatment increases risk for suicide.

Limitations

There are some challenges interpreting data. One challenge with this secondary data is the distribution of demographics. Over 80% of respondents were male and Caucasian, and over 60% were married, possibly contributing to limited variation among subjects with regard to seeking treatment, and impacting interpreting nuances in SBC score outcomes by sex, ethnicity and relationship status.

All participants were members of Idaho or Utah Army and Air National Guard units, and this geographic limitation may impact the generalizability of results to Reserve Component personnel nationally. Seeking services was consolidated to a dichotomous variable, and it was not possible to determine when participants sought services in relation to stigma-based beliefs, onset of mental health symptoms or SIB, or trauma history. Additionally, it was unclear whether seeking services by National Guard personnel was voluntary or mandated, and the context of service seeking initiation may influence prevalence of seeking services. It was not possible to determine if separate types of suicide outcomes (recent suicidal ideation, history of suicidal ideation, recent suicide attempt, history of suicide attempt) were influential on seeking treatment due to small counts within these subgroups. Limitations in the data inhibited the ability to study factors associated with seeking services by categorical recency of SIB. All three studies in this dissertation focused on the subsample of National Guard personnel with recent (within the last year) suicidal ideation and behavior with comparison to those with no SIB, and this may have limited the ability to understand how stigma, PTSD, Depression, and trauma timing were uniquely influential on seeking services in the National Guard.

Over half of respondents with recent SIB in this sample did not meet the clinical cutoff for likelihood of moderate Depression or diagnosis of PTSD, and analyses of co-occurring mental health challenges included only cases with completed PHQ-9 and PCL-5 scales. It was not possible to determine if Depression or PTSD were predictive of specific types of treatment seeking due to low counts within subgroups. T-test analyses of PTSD scale scores and seeking services were underpowered, thus caution should be used when interpreting results.

Results on timing of traumatic exposure showed that trauma history was associated with recent SIB regardless of Depression of PTSD diagnosis, indicating that people can have other issues than PTSD or Depression and still experience SIB. Results may be impacted by the fact that the majority of those with recent SIB reported experiencing trauma both before and during military service (81.3%, n=91). Additionally, timing of traumatic experiences were examined as categorical variables, limiting the ability to understand nuances in the relationships of types of treatment seeking and timing of trauma. The categories of the LEC did not allow for detailed exploration of when traumatic events occurred or how many times a particular type of trauma occurred, limiting the amount of detail available in results of analyses. Also respondents may have confused the meaning of traumatic experiences included in the LEC, or indicated more than one type of traumatic exposure for a single traumatic experience.

Future Directions

Further research is needed addressing stigma and access to care in association with treatment engagement for National Guard personnel, possibly focusing on demographic variables collected with more specificity. It may also be beneficial to understand how leadership and unit-member responses to seeking services impact hesitation to engage in or continue available services, and ensure that low-cost services with flexible scheduling are available.

Sampling by type and timing of treatment seeking for National Guard members with recent SIB would help researchers better understand the relationship between SIB and seeking services. Using data with greater specificity of the timing of trauma exposure

in relation to stigma concerns and mental health symptoms would help to develop contextual factors that may influence treatment seeking.

Seeking services did not appear to differ by timing of trauma exposure; however SIB and trauma exposure may increase severity of mental health challenges, and findings support earlier research showing that increased mental health severity was associated with seeking treatment. Further research is needed to understand how timing or recency of traumatic experiences may influence seeking services due to the relationship of trauma and suicide risk shown in previous research. The current dataset could be used to explore the relationship of trauma history and sexual trauma history in relation to SIB considering additional factors such as Depression and PTSD to further our understanding of trauma, mental health challenges and SIB, but this idea was not included in the present dissertation as it does not focus on seeking services.

Ultimately, research that considered the intersection of stigma-based beliefs, mental health challenges including Depression, PTSD, and SIB, and trauma history could identify collective factors that contribute to or inhibit seeking services, and could inform whether previous experience of seeking services was influential on subsequent willingness to engage in care. It is important to understand factors that contribute to or inhibit seeking services due to the relationship between not seeking services and suicide risk. Clarity on service engagement among National Guard personnel could spur service development or improvement, and shape education for National Guard personnel and unit leadership around the importance of seeking services.

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EDUCATION

May 2013	**Master of Social Work (MSW)** **The University of South Florida** Concentration: Research and Clinical Practice
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RESEARCH EXPERIENCE

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08/2017 – 12/2017	**University of Kentucky, School of Social Work, Lexington, KY** **Role:** College-wide Research Assistant
2012 - 2015	**University of South Florida, Challenge Grant Team, Tampa, FL** *Coming Home: The Post-Deployment Reintegration Process and Health Outcomes in Military Student Veterans and their Children*; IRB # Pro00010713 **Role:** Research Collaborator

08/2011 – 07/2014 **University of South Florida, School of Social Work, Tampa, FL**
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01/2012 – 06/2012 **University of South Florida, Florida Mental Health Institute, Tampa, FL**
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03/2007 – 07/2011 **RMC Research Corporation, Tampa, FL**
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GRANTS

08/2018 – 04/19 **University of Kentucky School of Social Work**
Pilot study: Effectiveness of a Heart Rate Variability Biofeedback Intervention and Mobile App on Cardiac Autonomic Functioning in U.S. Veterans with Combat-Related Posttraumatic Stress Disorder, $2,500 training award (PI: D. Schuman)
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08/2018 – 04/19 **Igniting Research Collaborations (IRC)**
Pilot study: Effectiveness of a Heart Rate Variability Biofeedback Intervention and Mobile App on Cardiac Autonomic Functioning in U.S. Veterans with Combat-Related Posttraumatic Stress Disorder, $6,000 Award (PI: D. Schuman)
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2013 - 2015 **American Psychological Association – APAGS Basic Psychological Science Grant**
Coming Home: The Post-Deployment Reintegration Process and Health Outcomes in Military Student Veterans and their Children; IRB # Pro00010713, $1,000 Award
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2013 - 2014 **University of South Florida Graduate Student Challenge Grant**
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PUBLICATIONS

Peer-Reviewed Publications

Miller, J**.**, Donohue-Dioh, J., & **Brown, A**. (2018). Using Concept Mapping to develop a statewide kinship care coalition: A case study. *Journal of Community Practice, 26*(2), 1-22.

Brown, A., Joshi, M. (2014). Intimate partner violence among female service members and veterans: Information and resources available through military and non-military websites. *Social Work in Health Care, 53*(8), 714-738.

Reports

Sharrock, P., Vargo, A., Sowell, C., Lardieri, S., Reyes, F., Shockley, C., … Hanson, A. (2012). *Needs and experiences of youth aging out of the child welfare prepaid mental health plan* (Contract No. MED134). Tampa, FL: Louis de la Parte Florida Mental Health Institute. University of South Florida.

Manuscripts in Progress

Werthman, J.A., **Brown, A.**, Cole, I., Sells, J. R., Dharmasukrit, C., Rovinski-Wagner, C., Tasseff, T.L. *Second Victim Phenomenon and Nursing Support: An Integrative Review.* Journal of Radiology Nursing. Manuscript submitted for publication.

CONFERENCE PRESENTATIONS

Street, E., & **Brown, A.** (2020, October). Combat Veteran Emotional Intelligence: Lessons on Performance Under Pressure. (Poster Presentation). *35th Annual Association of Applied Sport Psychology Conference,* Virtual.

Werthman, J. A., **Brown, A.,** Cole, I., Rovinski-Wagner, C., Sells, J. R., Tasseff, T. (2020, August). Development of a VAQS fellow-driven, cross-setting special interest group on second victim (SV) and just culture. (Poster Presentation). *VA Quality Scholars Summer Institute,* Virtual.

Brown, A., Loew, N., Suzuki, H., Tasseff, T. (2019, August). The root cause analysis process: Iowa City VA. (Oral Presentation). *VA Quality Scholars Summer Institute,* Houston, TX.

Schuman, D. L., Casto, A., Lawrence, K. A., **Brown, A.**, Ginsberg, J. P., Boggero, I., & Moser, D. K. (2019, May). Pilot study: Effectiveness of a heart rate variability biofeedback intervention on cardiac autonomic functioning in U.S. Veterans with posttraumatic stress disorder (Poster Presentation). *VA Research Day, Lexington VAHCS*, Lexington, KY.

Brown, A., Cerel J., Bryan, C., & Bryan, A. O. (2019, April). The relationship of stigma & barriers to care & treatment seeking in National Guard personnel with suicidal ideation or behavior (Poster Presentation). *52nd American Association of Suicidology Conference*, Denver, CO.

Street, E., & **Brown, A.** (2019, April). Emotional Intelligence Under Fire: Could Today's Coaches Learn from Combat Veterans? (Poster Presentation). *15th Annual Sports Psychology Forum*, Bowling Green, KY.

Brown, A. (2018, June). Military culture and mental health care: How military identity impacts treatment engagement. *Lexington VA Annual Mental Health Summit*, Lexington, KY.

Brown, A., & Cerel J. (2018, April). Comorbid traumatic death exposure and suicide exposure: Impact on mental health and suicide outcomes. (Poster Presentation) *51st American Association of Suicidology Conference*, Washington, D.C.

Brown, A. (2016, April; 2017, August). Caregiving for severely injured veterans: A lifelong journey. *University of Kentucky Annual Military Behavioral Health Conference*, Lexington, Kentucky. *Concurrent Session.*

Brown, A., & Cerel J. (2017, April). Exposure to traumatic death in military veterans: Associations with suicide and mental health outcomes (Poster Presentation). *50th American Association of Suicidology Conference*, Phoenix, AZ.

Brown, A. (2016, May). Veterans and higher education: Challenges and resources. *2016 KY-AHEAD Conference*, Jamestown, KY.

Ysasi, N. A., & **Brown, A**. (2016, April). Complementary and alternative medicine. University of Kentucky 2nd Annual Military Behavioral Health Conference, Lexington, Kentucky. *Concurrent Session.*

Brown, A., Chen, J., Coates, E., Davila, E., Schonfeld, L. (2014, August) Veterans' reintegration experiences: Basic and military specific demographics (Poster Presentation) *122nd Annual American Psychological Association Convention*, Washington, D.C.

Chen, J., **Brown, A**., Coates, E., Davila, E. Schonfeld, L. (2014, August) "Not what I thought": The role of expectations in reintegration and depressive symptoms of student veterans (Poster Presentation). *122nd Annual American Psychological Association Convention*, Washington, D.C.

Coates, E., Davila, E., **Brown, A**., Chen, J., Schonfeld, L. (2014, August) Veterans' reintegration quality as a moderator between veterans' and their children's mental health (Poster Presentation). *122nd Annual American Psychological Association Convention*, Washington, D.C.

Brown, A., Joshi, M. (2013, January) Intimate partner violence among female veterans and Active Duty service members (Poster Presentation). *Society for Social Work Research (SSWR) National Conference*, San Diego, CA.

GUEST LECTURES

Brown, A. Military and Veteran Suicide and Suicide Prevention. Presented to an Introduction to Military Social Work class, 2019, University of Georgia, Athens, Georgia.

Brown, A. Social work with military/veterans: Military culture and career considerations. Presented to an Introduction to Social Work class, 2018, University of Kentucky, Lexington, Kentucky.

Brown, A. Polytraumatic Injuries: Veterans, caregivers, and social work practice. Presented as part of a Responding to Military and Veteran Populations class, 2018, Morehead State University, Morehead, Kentucky.

Brown, A. Social work with military and veterans. Presented to an Introduction to Social Work class, 2016, University of Kentucky, Lexington, Kentucky.

Brown, A. Women Warriors. Recorded Guest-Lecture Lesson for Military Social Work (online),
Military Behavioral Health Program, University of Kentucky, Lexington, Kentucky.

Brown, A. VA structure, culture, and the role of social work. Presented to an Introduction to Social Work class, 2014, University of South Florida, Tampa, Florida.

Brown, A. Animal Assisted Therapy. Presented to an Introduction to Social Work class, 2012, University of South Florida, Tampa, Florida.

Brown, A. Alternative Therapies: Creative approaches in helping and healing. Presented to Introduction to Social Work classes, 2011 and 2012, University of South Florida, Tampa, Florida.

MEDIA

Social Work Conversations: A College of Social Work Podcast with Blake Jones, PhD, LCSW. Episode 5 - When the Ticker Tape Ends - Support for Military after Deployment – With Amy Brown. Transcript available at https://luminarypodcasts.com/listen/university-of-kentucky-college-of-social-work/social-work-conversations/episode-5-when-the-ticker-tape-ends-support-for-military-after-deployment-with-amy-brown/5fa6852f-44ba-4b2c-8691-325fe2f12a8c

TEACHING EXPERIENCE

2020 Spring	SW 518 International Social Work (online) Independent Instructor, Undergraduate and Graduate, University of Kentucky
2019 Fall	SW 724 Assessment and Treatment Planning (online) Independent Instructor, Graduate, University of Kentucky
2019 Fall	SW 6438 Evaluation of Clinical Practice in Diverse Settings (online) Independent Instructor, Graduate, University of South Florida
2017 Spring	SW 580 Topical Seminar in Social Work: Substance Misuse (online) Independent Instructor, Undergraduate and Graduate, University of Kentucky
2016 Fall	SW 322-401 Social Work and Social Welfare (face-to-face) Independent Instructor, Undergraduate, University of Kentucky
2016 Spring	SW 322-401 Social Work and Social Welfare (face-to-face) Independent Instructor, Undergraduate, University of Kentucky
2015 Fall	SW 322-401 Social Work and Social Welfare (face-to-face) Independent Instructor, Undergraduate, University of Kentucky

CLINICAL EXPERIENCE

11/2019 – Present	**Mental Health Social Worker, Emergency Dept. (GS-12), Full Time** **Lexington VA Medical Center, Lexington, KY**

06/2015 – 07/2019	**RCS Counselor, Social Worker (GS-11), Full Time** **Lexington Vet Center, Lexington, KY**
05/2013 – 06/2015	**Polytrauma/TBI Clinic Social Worker (GS-9/11), Full Time** **James A. Haley Veterans Medical Center, Tampa, FL**
01/2012 – 04/2013	**Social Work Intern** **James A. Haley Veterans Medical Center, Tampa, FL**
2006	**Project Coordinator – Accreditation and Grant Proposal Support** **Service Dogs for America, Jud, ND**
01/2006 – 11/2006	**Volunteer Coordinator** **Service Dogs for America, Jud, ND**
05/2005 – 09/2005	**Counselor** **Systems Unlimited, Iowa City, IA**

MILITARY EXPERIENCE

03/2000 – 01/2004	**31L/31R Radio/Switch Operator, Specialist (E-4)** **Iowa Army National Guard, Cedar Rapids, IA**

LICENSURE AND CERTIFICATION

Licensed Clinical Social Worker (Current), Florida License # SW12898
Stens Professional 5-Day Biofeedback Course, September 2018, Denver, CO
Human Subjects Research for Social/Behavioral Research Investigators and Key Personnel: Collaborative Institutional Training Initiative (CITI; Current)

SERVICE

University

2016	Military Behavioral Health Committee: Student Veteran Representative

Community

06/2013 – 05/2015	*Quantum Leap Farm* (Nonprofit serving children and adults with disabilities in mounted Equine Therapy): Volunteer
10/2008 – 12/2012	*Humane Society of Tampa Bay* (Nonprofit benefitting homeless animals): Volunteer

10/2004 – 10/2005	*Miracles in Motion* (Nonprofit serving children and adults with disabilities in mounted Equine Therapy): Volunteer

PROFICIENCIES

Biofeedback
NeXus-10, Mark II/BioTrace; Alive Clinical & Pioneer (Somatic Vision); EmWave and Inner Balance (HeartMath)

PROFESSIONAL AFFILIATIONS

Military Suicide Research Consortium (MSRC; 2018 - Present)

Society for Social Work Research (SSWR; 2012 - Present)