PERCEIVED STIGMA AND BARRIERS TO MENTAL HEALTH CARE AMONG FORMER MILITARY SERVICE MEMBERS

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PERCEIVED STIGMA AND BARRIERS TO MENTAL HEALTH CARE AMONG FORMER MILITARY SERVICE MEMBERS

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DISSERTATION
_____________________________________

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

By

Anna Rowena Zinnerazade Mastapha
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2018

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ABSTRACT OF DISSERTATION

PERCEIVED STIGMA AND BARRIERS TO MENTAL HEALTH CARE AMONG FORMER MILITARY SERVICE MEMBERS

Former United States military members have consistently faced mental health concerns post discharge from the military. Some researchers have argued that the use of mental health services by veterans does not parallel the prevalence and need of such services (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004; Milliken, Auchterlonie, & Hoge, 2007; Vogt, 2011). Reasons why veterans do not access mental health care are varied and broad, however, they tend to be consistent with explanations rooted in the stigma of mental health care, and in the barriers that prevent the use of mental health care. The degree of the impact of factors contributing to stigma and barriers to mental health care is not fully understood. Particularly lacking from previous research is an examination of how the education received while in the military about mental health symptoms and treatment impacts the likelihood that a service member will access care. In the current study, I used theories of stigma and barriers to care outlined by Overton and Medina (2008) to examine the relationships among demographic characteristics, self-reported diagnoses of common mental health disorders that veterans experience, and likelihood of accessing mental health care based on the education received while in the military with self-reported levels of stigma and barriers to care in a sample of 355 former military service members from several branches. Multiple regression analyses were used to examine the relationships among these variables. Results revealed statistically significant relationships among gender, age, self-reported diagnosis of depression, the impact of education, and stigma. Results also revealed statistically significant relationships among employment and barriers to care. In addition, stigma was found to have significant relationships with the positive impact of education, and the likelihood of accessing care. Lastly, results revealed that when in the presence of the mediation variable impact of education, stigma was no longer associated with the likelihood veterans would access care post discharge.

KEYWORDS: Veterans, Stigma, Barriers to Care, Former Military Studies, Mental Health Treatment for Veterans
Anna Rowena Zinnerazade Mastapha

April 9, 2018
PERCEIVED STIGMA AND BARRIERS TO MENTAL HEALTH CARE AMONG FORMER MILITARY SERVICE MEMBERS

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Chapter One: Statement of the Problem and Literature Review

Former United States military service members can face unique challenges. Such challenges include the many forms of stress that are involved with being at war. These stressors include ramifications of being separated from loved ones, as well as the stressors that are inherent in multiple and extended deployments. The stress encountered while serving in the United States, and while serving abroad, can also play a role in mental health issues including anxiety, posttraumatic stress disorder (PTSD), depression, and substance abuse, among others. Extensive existing literature indicates that deployments to combat zones, as well as exposure to combat, are associated with the increased risk of mental health problems (Kang, Natelson, Mahan, Lee, & Murphy, 2003; Kessler, Chiu, Demler, & Walters, 2009; Prigerson, Maciejewski, & Rosenheck, 2001; Sareen, Cox, & Afifi, 2007; Toomey, Kang, & Karlinski, 2007).

The experiences of veterans while in service can contribute to higher levels of stress after discharge. Many of the same attitudes and beliefs held during service are retained when personnel are discharged from the military. According to the Armed Forces Health Surveillance Center (2012) report, mental disorders are the leading cause of hospitalizations for active-duty forces. Among veterans, however, the reported leading causes of hospitalizations include: drug related complications, and primary care medically related issues other than mental health concerns (Marcum, Amuan, Hanlon, Aspinall, Handler, Ruby, & Pugh, 2012). It appears as though the occurrence of mental health issues in veterans does not equal the usage of mental health services for veterans. Despite high rates of mental health problems among service members returning from Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom (OEF-OIF),
concerns about stigma and barriers in utilizing care tend to be elevated in this population (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004).

Several researchers have explored the relationship between mental health disorders and the utilization of mental health care with a military population. In one study conducted by Hoge et al. (2004), the researchers explained that less than half of those military members surveyed had any interest in receiving mental health care. In another study by Milliken, Auchterlonie, and Hoge (2007), the authors reported that less than half (42%) of Operation Iraqi Freedom (OIF) military personnel referred for mental health care after deployment received follow up care, and that over one-third (39%) of those referred for mental health care six months later did not receive care. Therefore, it appears as though the use of mental health services among veterans does not parallel the prevalence and need of such services (Vogt, 2011). Subsequently, the goal of this study was to examine which variables might predict increased levels of endorsed stigma and barriers to mental health care utilization in a veteran population.

The current study sought to assess perceptions and attitudes towards mental health treatment, and to explore variables that might predict levels of stigma and barriers to care in a sample of former military service members, from all branches, who served in the military from 2001 to the present (defined as OIF/OEF/OND era, otherwise known as Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn). In addition, this study explored the relationship between the independent variables of stigma and barriers to care and the dependent variables of the impact of education and the likelihood of accessing care. Lastly, this study examined whether the education received while in the military about mental health illness and treatment mediated the relationship
between stigma and the likelihood a veteran would access mental health care if they believed it was needed.

Prior to beginning the review of literature, for reader clarity, it is important to understand the military as a whole. The following section will describe the United States Military, and will give demographic information. The subsequent information was provided by the Office of the Deputy Assistant Secretary of Defense (2012).

The Five Branches of the U.S. Military

Beginning this section are some definitions for clarification. When speaking about military ranks, all personnel are either enlisted (i.e., private, private first class, specialist, sergeant, staff sergeant, sergeant first class, master sergeant, first sergeant, sergeant major, or command sergeant major), or are officers (i.e., second lieutenant, first lieutenant, captain, major, lieutenant colonel, colonel, or general). The term ‘personnel’ is used to describe any person working in the military. The military is an all-volunteer organization totaling approximately 1% of the United States population. The following information was provided by the DoD (2012) executive summary of the military.

**Air Force.** The Air Force is the most recently established branch of the military and was officially established as a separate branch in 1947. Its main purpose is to support the security of the United States through air and space exploitation. It is a main supporter of ground forces by providing air support during missions. The Air Force has two reserve components – the Air National Guard and the Air Force Reserves.

**Army.** The Army is the oldest branch of the military and was established in 1775. It is considered the oldest branch as it absorbed its predecessor, the National Militia, founded in 1636. The Army is considered to be the ground force of the military.
Even though there are aviation units within the Army, their main missions are on the ground and the majority of the soldiers who serve have a job related to ground forces. The Army is also the largest branch of the military. Along with active duty soldiers, the Army also has two reserve components – the Army Reserves and the Army National Guard. The main difference between the two is that the Reserves fall under federal management (the president) and the National Guard falls under the jurisdiction of the state where it is located (the governor of that state), though the National Guard can be activated for federal missions if necessary.

**Navy.** The Navy was also established in 1775 and is considered to be the defender of the seas. While those serving in the Navy also operate on land, their main mission is on the sea. The Navy is also the main supporter of the Air Force in providing air force carriers for transporting aircraft, and providing a runway at sea for aircraft. Unlike the Air Force and Army, the Navy does not have any associated reserve component.

**Marines.** The Marines are the second smallest branch of the military. Their purpose has changed somewhat over the years. When the branch was first established in 1775, it was under the Navy as a ground force element. It was basically assigned the task of taking over the beaches when the Navy brought the Marines to a mission. In 1798, it was established as a separate branch, and since that time, the Marines have slowly moved more towards ground force operations. While they do have their own air support, they are still mainly supported by the Navy for air operations and, of course, the operations by sea. The Marines, however, do not have their own medical corps. They are supported by
Navy medical corps. There is not a Marine Corps National Guard, however, there is a Marine Corps Reserves unit.

**Coast Guard.** The Coast Guard is the smallest branch of the military. It was originally established in 1790 and has undergone several changes relating to the governmental departments under which it falls, including the Treasury Department and the Department of Transportation. In 2002, the Coast Guard was moved to fall under the Department of Homeland Security (DHS). If the need arises, it can be called to mission under the Department of the Navy. The Coast Guard’s primary purpose is to control illegal immigration by sea and conduct sea rescues. The coast Guard also has a reserves component – the Coast Guard Reserves. Now that an explanation of the five branches has been given, an exploration of veteran demographics will follow.

**Demographics of United States Veterans**

According to the Department of Veterans Affairs’ Profile of Veterans in 2014, the following data were collected from the American Community Survey, and published in March 2016. In 2014, there were 17,790,975 male veterans and 1,595,614 female veterans for a total of 19,386,589 veterans. This was compared to 231,986,987 non-veterans in the United States. In 2014, the median age of male veterans was 64, and the median age of female veterans was 49. Of male veterans, 79.4% were predominantly White non-Hispanic, and of female veterans, 67.3% were predominantly White non-Hispanic. Nonwhite, Non-Hispanic male veterans comprised 14.2% of the veteran population, with 6.4% being Hispanic. Female Nonwhite, Non-Hispanic veterans totaled 24.5%, with 8.2% being Hispanic. Male veterans were more likely to be married and less likely to have never married when compared to non-veteran men, and female veterans
were more likely to be widowed than non-veteran women. A higher percentage of male
Veterans were in management and professional occupations such as engineers, educators,
doctors, and various types of managers when compared to non-veterans in 2014. There
were roughly two times the amount of male veterans working for local, state, or federal
government than non-veterans. About 7% more female veterans were working in
management and professional occupations versus non-veteran women in 2014. About
36% of female veterans worked for local, state, or federal government, compared to 16%
of female non-veterans. Both male and female veterans were more likely to have a
combination of public and private health insurance coverage when compared to non-
veterans. In addition, male and female veterans had lower uninsured rates than non-
veterans. In 2014, 6.8% of male veterans were at 100% of poverty level while 45.1% of
male veterans were at 400% of poverty level. In 2014, 9.4% of female veterans were at
100% of poverty level, while 42.6% of female veterans were at 400% of poverty level.
Both male and female veterans worked year-round and full time, and had higher personal
incomes than non-veterans in 2014. The largest cohort of male veterans served during
the Vietnam Era, while the largest cohort of female veterans served during Gulf War II.
In 2014, a higher percentage of female veterans had completed some college, a
Bachelor’s degree or an advanced degree when compared with male veterans. In
addition, a higher percentage of female veterans than male veterans in all age groups
were enrolled in college. In 2014, a higher percentage of female veterans than male
veterans had a service-connected disability rating, while a higher percentage of male
veterans used VA health care.
Review of the Literature

Given the exposure to war trauma, and its associated increase in mental health problems for military personnel, researchers have studied the factors that affect the utilization of mental health services by military veterans. When conducting a literature review, it was evident that many studies existed utilizing populations of active duty and currently serving Reserve and National Guard soldiers. In addition, a sizable body of research exists utilizing older veteran populations. The focus of the current study is with a veteran population that is no longer serving, and with veterans that served from 2001-present. For the purposes of this study, the “present” denotes the time of data collection, or July through August of 2017. Therefore, all eligible participants would have received a discharge from service prior to July of 2017. From 2001-present, the eras of service are referred to as: Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF), and Operation New Dawn (OND). The body of research utilizing OIF/OEF/OND veterans is not as sizable. The studies described in the following section had relevant veteran populations, relevant hypotheses related to stigma and barriers to care, and were reviewed as reference for the current study.

Mental health, related beliefs as a barrier to service use for veterans. In 2011, Vogt conducted a review of 15 empirical articles to examine public stigma and personal beliefs about mental illness and mental health treatment in veterans as potential barriers to service utilization. The articles were identified from PsychINFO and PubMed databases. Across reviewed studies, findings indicated that concerns about public stigma, as well as personal beliefs about mental illness and mental health treatment, were barriers to service use. Concerns about what other people would think, and personal beliefs
related to discrimination about mental illness, were found to be significantly negatively related to treatment utilization.

One study in Vogt’s (2011) review was conducted by Kessler, Berglund, and Bruce (2001). Kessler et al. (2001) used data from The National Comorbidity Survey, and compared that data to health care utilization over the studied time frame. Though the respondents were primarily civilians, the authors reported that beliefs about mental health treatment, and the effectiveness of treatment, were barriers to care. Another study in Vogt’s (2011) review was conducted by Maguen, Schumm, & Norris (2007). Maguen et al. (2007) investigated predictors of mental and physical health care utilization in a population of 1,632 Vietnam Veterans. The authors examined both direct and mediated relationships among predisposing factors (variables such as: age, sex, marital status, and combat exposure), enabling factors (variables such as: household income and insurance), and need factors (variables such as: total number of psychiatric diagnoses, average number of health conditions, and PTSD severity), and physical and mental health care utilization outcomes. Results indicated that, for both physical and mental health care service utilization, need factors were the most consistent and strongest mediators of predisposing variables. Further reviewed by Vogt (2011) was a study conducted by Fikretoglu, Guay, Pedlar, and Brunet (2008) utilizing a sample of 1,220 Canadian active duty members. Fikretoglu et al. (2008) examined beliefs about mental illness and mental health treatment, as well as concerns about public stigma, as predictors of barriers to care. Independent variables such as sex, age, service connected disability status, need for health care, and concerns about public stigma were found to be significant predictors of barriers to care.
Also in Vogt’s (2011) review was a study by Hoge, Castro, Messer, Mceurk, Cotting, and Koffman (2004). Hoge et al. (2004) studied a sample of 3,671 Army and Marine service members after their return from combat in Iraq or Afghanistan. Results indicated that service members who screened positively for a mental health diagnosis were twice as likely than service members without a positive screen to endorse concern about stigma regarding mental health disorders as a barrier to care. In addition to concerns about how others would view them, service members in this study also endorsed barriers to care such as: difficulty getting time off from work and difficulty scheduling an appointment. Included in Vogt’s (2011) review was a study by Damron-Rodriguez, White-Kazemipour, Washington, Villa, Dhanani, and Harada (2004) conducted in a Veterans Affairs hospital with a sample of 178 veterans from different war eras, to include the OIF era. Damron-Rodriguez et al. (2004) asserted that wait times, paperwork, and navigating the health care system were barriers to care. One study reviewed by Vogt (2011) was conducted by Waner, Appenzellar, Mullen, Warner, and Griefer (2008), with a sample of 3,294 service members returning from Iraq. Warner et al. (2008) reported that barriers to care included public stigma, and fear of breaches of confidentiality with regards to medical records.

Vogt (2011) cited several limitations in the research reviewed. One such deficiency included the revelation that literature relating to mental health beliefs, as they relate to veterans, is still in a beginning stage. Of the 15 studies Vogt (2011) reviewed, 12 were quantitative and three were qualitative. As the methods used for analysis from the 15 articles reviewed were diverse, so were the measures used for stigma and barriers to care. Thereby, results indicated varied levels of endorsements across measured stigma
and barriers to care. Authors from six of the 15 articles used the Perceived Stigma and Barriers to Care for Psychological Problems (Britt et al., 2008). Vogt’s (2011) review highlighted many salient aspects of barriers and stigma as it relates to mental health care utilization by veterans, while also indicating that many of the same types of items were endorsed across different studies.

As Vogt (2011) highlighted, research is sparse relating to veterans and perceived stigmas regarding mental health diagnoses and care. Lacking is a body of research concentrating on the OIF/OEF/OND population of veterans. The current body of research includes veterans from several different eras of service. However, also lacking, is a standard measure of stigma and barriers to care that can be used with veterans across eras. Lastly, none of the articles in Vogt’s review explored where service members may have received information about mental health diagnoses and services, and if that information was somehow impactful.

Perceived stigma and barriers to care for psychological treatment. In 2008, Britt, Green-Shortridge, Brink, Nguyen, and Rath conducted a study with 3,648 soldiers from a large military base. Britt et al. (2008) sought to assess whether perceived stigma and barriers to care moderated the relationship between work overload and indexes of psychological symptoms. This was the first study that examined stigma and barriers to care as two separate constructs, which were both significant predictors of outcome measures. Further, Britt et al. (2008) validated the independent dimensions of these two constructs. When defining stigma, Britt et al. (2008) cited a definition by Corrigan and Penn (1999) in which stigma is like a negative stereotype or prejudice, or an inaccurate attitude about someone. Rather than define barriers to care, Britt et al. (2008) listed
potential barriers such as: not getting time off work, not knowing how to schedule an appointment, not knowing where to get help, and not having transportation among others.

Britt et al.’s (2008) sample of 3,648 soldiers was largely male (97%), primarily enlisted (92%), and predominantly White (66%). Participants were administered the 11-item survey Perceived Stigma and Barriers to Care for Psychological Problems (created by the authors for this study). In the survey, six items measured stigma, and the remaining five assessed barriers to care for a mental health problem. Participants responded using a five point Likert scale ranging from Strongly Disagree to Strongly Agree. The 11 items of the measure were submitted to principle axis analysis, after which two factors accounted for 72% of the variance. All items assessing perceived stigma loaded on one factor, and all items assessing barriers to care loaded on another factor. This particular measure was also used in six of the 15 articles reviewed by Vogt (2011), and will be explained more in depth later in this study.

After multiple regression analyses, results of Britt et al.’s (2008) study indicated that perceived stigma and barriers to care were related to psychological symptoms in that those experiencing psychological problems were also more likely to report stigma and barriers to care. In addition, results indicated that soldiers who screened positively for depression and posttraumatic stress disorder (PTSD) also endorsed higher levels of stigma and barriers to care. This is part of a trend that will become evident as the literature review continues which is that those soldiers who need mental health care the most are the ones not accessing the care due to stigma and barriers.

Britt et al.’s (2008) cited three limitations to their study. The first was the use of a self-report measure, and having that measure be administered at a single point in time. In
addition, the percentage of variance in the outcomes accounted for by the interactions between stigma, barriers, and stressors was small. Lastly, the authors were unsure whether their results could be generalizable to diverse populations, citing the need for future research. Britt et al.’s (2008) results were missing comprehensive data from women, and from minority groups, due to the nature of the military base’s population. In addition, the authors did not explore whether education was being given to these soldiers regarding mental health diagnoses and treatment, and the impact – if any – of this education on stigma and barriers to care.

**Stigma, negative attitudes about treatment, and utilization of mental health care among soldiers.** In 2011, Kim, Britt, Klocko, Riviere, and Adler conducted a study with 2623 soldiers from National Guard and active duty brigade combat teams in the southern U.S. in which they collected survey data six months post deployment to Iraq or Afghanistan. Kim et al. (2011) sought to examine the impact of negative attitudes toward treatment on treatment seeking in these soldiers. The sample for Kim et al.’s (2011) study was mostly male (91%), primarily enlisted (93%), and largely ages 18-29 (72%). Kim et al. (2011) defined stigma as the construct that separates one person from another, while linking one person to undesirable characteristics (Jones, Farina, Hastorf, Markus, Miller, & Scott, 1984). Kim et al. (2011) asserted that when prejudices and stereotypes are internalized, they may damage self-esteem in addition to impeding treatment seeking (Corrigan, 2004). Kim et al. (2011) defined barriers to care as organizational barriers related to the military such as: difficulty finding time off from work, difficulty scheduling an appointment, and not knowing where to get help. To assess for perceived barriers to care, Kim et al. (2011) formulated a 17-item survey using 11 items from Hoge et al.
Findings indicated that those reporting mental health problems were significantly more likely to report concern about barriers to mental health care versus those not reporting mental health problems. Those receiving mental health care were two times as likely to endorse difficulty scheduling an appointment verses those not receiving mental health care. Those not receiving care were more likely to endorse the idea that problems work themselves out without care. Stigma and organizational barriers were not predictive of treatment utilization, however, negative attitudes toward treatment was inversely related to treatment utilization. Similar to findings from Hoge et al. (2004), those who reported mental health problems were more likely to endorse negative attitudes toward treatment. Kim et al.’s (2011) research helps explain why few soldiers seek to enter treatment due to stigma, and found that active duty soldiers who need the help were less likely to access mental health services than National Guard soldiers.

Limitations of Kim et al.’s (2011) study included a cross sectional nature which limited the ability to draw definitive causal interpretations. Also, the numbers of those who screened positively for a mental health disorder may have been conservative as soldiers participating in the study could have sought treatment in the past, and therefore were not symptomatic at the time. Missing from Kim et al.’s (2011) study was a description of race in the sample population. In addition, Kim et al. (2011) chose a measure of barriers to care that included stigma items, but was operationalized as barriers to care. Therefore, there is no clear distinction in their measure as to which items may fall under the umbrella of stigma, and which are otherwise barriers to care. Also missing
from Kim et al.’s (2011) study was an exploration of where soldiers are receiving information about mental health treatment and diagnoses, and if that education had any impact on treatment utilization.

**Perceived stigma and barriers to mental health care utilization among OEF-OIF veterans.** In 2009, Pietrzak, Johnson, Goldstein, Malley, and Southwick conducted a study with 272 National Guard and Reserve soldiers in Connecticut. Their study examined whether social support and beliefs about mental health care are associated with stigma, barriers to care, and mental health care utilization. Pietrzak et al.’s (2009) sample was predominantly male (91%), primarily White (87%), and mostly enlisted (74%). Pietrzak et al. (2009) did not report which definitions of stigma and barriers to care they were using. As one of the measures, Pietrzak et al. (2009) used the Perceived Stigma and Barriers to Care for Psychological Problems (Britt et al., 2008) survey. In addition, the authors analyzed the data using two subscales from this measure (six items used to assess for stigma, and five items used to assess for barriers to care).

Findings from regression analyses indicated the group who screened positive for psychiatric disorders scored higher on both stigma scales and the barriers to care scale, and were more likely to endorse nearly all of the stigma items, and barriers to care items. Their findings also indicated that negative beliefs about mental health care, particularly psychotherapy, and decreased perceived unit support predicted increased perceptions of stigma and barriers to care. Negative beliefs about mental health care were also associated with decreased likelihood of mental health counseling and medication visits. These results are similar to the findings from Hoge et al. (2004) and Kim et al. (2011).
Pietrzak et al. (2009) cited several limitations in their study, to include possible response bias, low return rate of the survey, limited generalizability to the OEF-OIF soldier population, and one time self-report measures to screen for the presence of a mental health disorder. Missing from Pietrazk et al.’s (2009) study was a clear definition of the constructs of stigma and barriers to care. Also lacking was an exploration of where soldiers were receiving education about mental health disorders and treatment, and whether or not this education impacted mental health care utilization.

**Summary of the Reviewed Literature**

**Weaknesses.** A substantial body of research exists utilizing populations of active duty and currently serving Reserve and National Guard soldiers. Lacking from the reviewed literature are studies examining veterans who are no longer serving, and who have served from 2001-present. Also lacking from the reviewed literature is a standard measure of stigma and barriers to care that can be used with veterans across service eras. In addition, definitions of stigma and barriers to care (to include what variables researchers considered as stigma related, and which were considered as barrier related) were varied across studies. A consistent weakness across reviewed literature is the use of self-report measures that were administered at one point in time. No studies reviewed explored whether or not veterans were receiving education about mental health treatment and symptoms while still in service, and if that education had any impact on stigma or health care utilization.

**Strengths.** Across several studies, results indicated that participants who reported mental health diagnoses were more likely to endorse stigma and barriers to care (Britt et al., 2008; Kim et al., 2011; Pietrzak et al., 2009; & Vogt, 2011). Also, though the
definitions of stigma were varied across studies, almost all of the authors reported which
definition they were using, and whether or not they were assessing for public or personal
stigma. Though stigma and barriers to care variables may have been conceptualized
differently, as Vogt (2011) reported, many of the same types of items were endorsed
across different studies.

With the literature review complete, to further lay the foundation for the current
study, in the next two sections, I will expound upon mental health concerns, and
prevalence of mental health issues in the military.

Mental Health Concerns of United States Military Veterans

Recent military operations in Iraq and Afghanistan, the first sustained ground
combat undertaken by the United States since the Vietnam War, produced service
members who returned home with another less visible and less public battle that
continues to rage. Hoge et al. (2004) asserted that deployment stressors and exposure to
combat resulted in considerable risks of mental health problems that included, but were
not limited to, posttraumatic stress disorder (PTSD), major depression, and substance
abuse. According to Tanielian et al. (2008), 20% of the veterans who served in either
Iraq or Afghanistan suffered from either major depression or posttraumatic stress
disorder. Of the veterans in these two categories, 19.5% experienced a traumatic brain
injury (TBI). In 2008, Hoge et al. performed a study that identified a link between TBI
and PTSD. Findings indicated that military members who experienced a traumatic brain
injury were more than twice as likely to suffer from PTSD as those who did not have a
TBI.
In 2016, the National Institute of Drug Abuse reported that substance abuse among veterans was strongly related to their exposure to combat. In a study from the National Veteran’s Foundation (2015) it was reported that 25% of returning Iraq and Afghanistan veterans showed signs of a substance abuse disorder. A 2008 study by NIDA showed that active duty and veteran military personnel abused prescription drugs at a rate that was more than two times the civilian population. In 2009, the VA estimated that around 13,000 veterans from Iraq and Afghanistan suffered from alcohol dependence.

In a landmark study by Riddle et al. (2007), the authors described a baseline prevalence of mental disorders in a large U.S. military cohort (the Millennium Cohort, \( N = 76,476 \)), established for a 22-year longitudinal study of the health effects of military service. Riddle et al.’s analyses suggested that the military cohort was comparable to the national estimate of 26% as the prevalence of common mental illness in the U.S. However, the author’s findings also indicated that there were military subpopulations, including women, younger, less educated, single, white, short-term service, enlisted, and Army members, who were at greater odds for some mental health disorders.

Riddle et al. (2007) reported that the prevalence of mental disorders in the military – other than alcohol abuse – was found to be consistent with, or less common than, reports from other studies using military and nonmilitary populations (Black et al., 2004; Corson, Gerrity, & Dobscha, 2004; Grant et al., 2004; Hoge et al., 2004; Kessler et al., 1994; Kessler, DuPont, Berglund, & Wittchen, 1999; Kessler, Sonnega, Bromet, Huges, & Nelson, 1995; Kessler et al., 2003; Klapow et al., 2002; Makino, Tsuboi, & Dennerstein, 2004; Roy-Byrne & Wagner, 2004; Weissman et al., 1997; Zamorski,
2003). For example, the prevalence of PTSD in the weighted military sample was 2.4% compared with 3.5% in the 2005 National Comorbidity Survey Replication (NCS-R) of households (Kessler et al., 2005), major depressive disorder prevalence was 3.2% compared with 6.7% in the NCS-R sample, and panic syndrome was 1.0% compared with 2.7% in the NCS-R sample. However, these rates were not directly comparable because of different survey methodology and different population demographics.

More than any other study reviewed for the purposes of this report, Riddle et al.’s (2007) findings provide valuable information necessary to understanding the context of demographic predictors of mental health conditions. The multivariable logistic regression results from Riddle et al.’s (2007) 76,476 Millennium Cohort report will now be summarized. As Riddle et al.’s (2007) study was longitudinal over 22 years, the data summarized below is from active duty, National Guard, Reserve, and veteran military populations.

When compared with men, women were at statistically significant increased adjusted odds of PTSD (OR = 1.4), major depressive disorder (OR = 1.8), panic syndrome (OR = 2.3), anxiety syndrome (OR = 2.1), and eating disorders (OR =1.6), whereas women were at statistically significant decreased adjusted odds of alcohol abuse (OR = 0.6). Older personnel, when compared with personnel aged 17-24 years, were at significantly lower odds of any PTSD morbidity (OR = 0.6), alcohol abuse (OR = 0.4), and eating disorders (OR = 0.7), and were at significantly higher odds of PTSD (OR = 1.4) and major depressive disorder (OR = 1.2). Personnel with a bachelor’s degree or higher were at significantly decreased odds of any PTSD morbidity, and specifically PTSD, major depressive disorder, panic syndrome, other anxiety syndrome, and alcohol
abuse. Married personnel were at half the odds of alcohol abuse (OR = 0.6) when compared with single personnel. Black non-Hispanic personnel were at significantly decreased odds of any PTSD (OR = 0.7), and specifically panic syndrome (OR = 0.6), other anxiety syndrome (OR = 0.8), alcohol abuse (OR = 0.6), and eating disorder (OR = 0.6) when compared with white non-Hispanics. Personnel in service for more than 14 years were at significantly lower odds of PTSD (OR = 0.7) when compared with those in service for less than four years. Being an officer was strongly protective against mental health morbidity in all seven measures used in Riddle et al.’s study when compared with enlisted personnel. When compared with Reserve/Guard, active-duty personnel were significantly more likely to have symptoms of PTSD (OR = 1.3), major depressive disorder (OR = 1.4), panic syndrome (OR = 1.3), other anxiety syndrome (OR = 1.6), and eating disorders (OR = 1.3), and less likely to have symptoms of alcohol abuse (OR = 0.6). Air Force personnel were at significantly lower odds of each of the seven outcomes when compared with Army personnel, whereas Navy personnel were at lower odds of PTSD (OR = 0.7), major depressive disorder (OR = 0.8), and other anxiety syndrome (OR = 0.7), and at higher odds of alcohol abuse (OR = 1.2) than Army personnel. Marines were at significantly increased odds of alcohol abuse (OR = 1.4) when compared with Army personnel.

**Prevalence of Mental Health Problems in the Military**

A growing body of literature has demonstrated the association of combat in Iraq and Afghanistan with post deployment mental health problems, particularly PTSD and depression. However, many studies have shown varying prevalence rates of these disorders based on different case definitions, and few have assessed functional
impairment, alcohol misuse, or aggressive behavior as comorbid factors occurring with PTSD and depression.

The 12-month prevalence of common mental illnesses among adults in the United States was estimated to be 26% (Demyttenaere et al., 2004). Dalack et al. (2010) reported that the mental health needs of U.S. military veterans returning from OIF/OEF engagements were substantial: 25%-40% of veterans returning from these conflicts reported significant mental health symptoms or interpersonal difficulties. Research conducted prior to the most recent engagements of Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) has shown that deployment stressors and exposure to combat resulted in considerable risks of mental health problems, including PTSD, substance abuse, alcohol use disorders, major depression, impairment in social functioning and in the ability to work, and the increased use of health care services (CDC, 1988; Helzer, Robins, & McEvoy, 1987; The Iowa Persian Gulf Study Group, 1997; Jordan, Schlenger, & Hough, 1991; Kang, Natelson, Mahan, Lee, & Murphy, 2003; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Prigerson, Maciejewski, & Rosenheck, 2002;).

Skopp et al. (2012) estimated that depression and PTSD may be present in 19% - 26% of U.S. service members returning from deployments to Iraq and Afghanistan. Baker et al. (2009) found rates from 10% - 44% of self-reported rates of PTSD and/or depressive symptoms. A recent study examined the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes in the Department of Veterans Affairs (VA) administrative and clinical data sets for over 100,000 OEF/OIF veterans evaluated in VA healthcare facilities between 2001 and 2005 (Seal, Bertenthal,
Miner, Sen, Marmar, 2007). The findings indicated that a substantial portion of OEF/OIF veterans who accessed VA care had co-occurring mental health diagnoses and psychosocial problems, with younger veterans (age 18-24 years) at the highest risk for PTSD compared to veterans 40 years or older. However, this study did not address the role of military branch, rank, and combat exposure as potential confounders of the relationship between age and mental health problems.

**Suicide.** Findings from a 2013 longitudinal study of current and former military members from all branches conducted by Leardmann et al. indicated that increased risk of suicide in veterans was significantly associated with male gender, depression, bipolar disorder, heavy drinking, and alcohol disorders. Results from the same study also stated that deployment related factors such as number of deployments and combat experience were not associated with increased risk of suicide in a sample of 151,560 current and former military personnel from all branches (Leardmann et al., 2013).

In 2016, the Department of Veterans Affairs (VA) published data from reports issued in 2012 and 2014. Based on 2012 data, the VA estimated the number of veteran deaths by suicide averaged 22 per day. In 2014, analysis indicated an average of 20 veterans a day died from suicide. Of those who died from suicide in 2014, 65% were 50 years of age or older. Veterans accounted for 18% of all deaths from suicide among U.S. adults in 2014, which was a decrease from 22% in 2010. Since 2001, the rate of suicide among U.S. veterans who used VA services increased by 8.8%, while the rate of suicide among veterans who did not use VA services increased by 38.6%. In the same time period, the rate of suicide among male veterans who used VA services increased 11%, while the rate of suicide increased 35% among male veterans who did not use VA
services. Since 2001, the rate of suicide among female veterans who used VA services increased 4.6%, while the rate of suicide increased 98% among female veterans who did not use VA services (Department of Veterans Affairs, 2016).

**The Cultural Context of Mental Health Treatment in the Military**

Negative attitudes toward mental health treatment are influenced by the cultural context in which service members live, and thereby may make veterans more susceptible to negative attitudes towards mental health treatment post discharge from the military. All branches have a credo using their own terms and motivational statements that align with their specific missions. One example is that all U.S. Army soldiers are required to memorize and recite the Soldier’s Creed on a regular basis during initial periods of service such as Basic Training and Advanced Individual Training after joining the Army. This is the indoctrination process of the military at its best, and the words are profound to any new soldier. Attitudes about treatment, and utilization of treatment - or lack thereof - are undoubtedly linked in some way to the words echoed in the Soldier’s Creed.
Potential barriers to seeking care are evidenced in the above Soldier’s Creed. The term “warrior” is powerful, and carries with it connotations of strength, resilience, and fortitude. These concepts are conflicting to someone who may have a mental illness in that being a warrior and being perceived as “weak” are stark opposites. The idea of never quitting, though used in the Creed in reference to battle and mission completion, can also be viewed by a soldier as quitting on the team and the mission while seeking mental health treatment. The statement, “I always maintain my arms, my equipment, and myself” places a great burden on a soldier to be self-sufficient, thereby usurping the idea of asking for help when needed. Lastly, statements such as, “I will always place the mission first” indoctrinates soldiers to believe that, no matter what mental state an individual may enter, the completion of the mission is paramount.
Education about mental illness, symptoms, and treatment in the military. In preparation for the current study, I did an exhaustive search for literature related to the education about mental illness, diagnoses, symptoms, and treatment that a veteran might receive while still in service. The search returned no scholarly articles which referenced variables about education given, or education received. In addition, no article reviewed for this study discussed where education about mental illness, diagnosis, and treatment may have been disseminated, and/or the contents and context of such education.

One reason that this construct of the impact of education is of interest and importance to me is because I have been in the Army National Guard since 2009, and I continue to serve today. In my experience, education relating to mental illness and treatment is sparse and administered one time a year, with little to no address or follow up in between. I have been a part of annual briefings in which there is a module dedicated to combat and operational stress, symptoms, and ways to mitigate the stress – to include treatment utilization. This brief is often one in a series of roughly 20 briefs given in succession during a two day period where all of the required briefs for the year are given, otherwise known as annual briefings. I have witnessed that the module about combat and operational stress can take anywhere from one to two hours to administer (depending on the facilitator), can be given by personnel of all ranks and military occupation (often times in my experience, this brief is not given by a medical service member), and often elicits no discussion from the audience. In short, it appears as though the education is given in order to fulfill a requirement, instead of administered in a manner that would lead to heightened awareness and prevention.
At the end of the brief, participants are given information for Military One Source, which is an online resource providing support for military members and their families. One of the categories on this website is titled “confidential help.” After following this link, personnel are directed to a several 24/7 call lines from which they can receive resources linking the type of help they need to the available service. At the end of the brief, participants are also directed to flyers around the armory with information related to mental health care. Lastly, at the conclusion of the briefs, personnel are directed to approach their leaders, and the chaplain, if they believe they require mental health assistance. Personnel are not directed to speak to medical or mental health personnel, as initially, they are referred to the chaplain. As previously mentioned, these are my direct experiences, and are limited to the National Guard. As no research exists relating to the education about mental illness, symptoms, and treatment given to service members while still in service, I have no basis for comparison. Therefore, variables related to education (discussed in Chapter 2) were included in the current study.

In the previous three sections, I described mental health concerns in the military, prevalence of mental health disorders in the military, the cultural context of mental health treatment in the military, and education about mental illness and treatment given to service members. In preparation for the current study, it was important to clearly define stigma, and to explore existing theories of stigma. In the following two sections, I will expound on these concepts.

Stigma

One issue that may contribute to veterans not seeking or receiving mental health care is the perceived stigma associated with treatment. Relative to mental illness, stigma
is defined as beliefs and attitudes associated with the perception of mental illness as an undesirable characteristic that discredits a person and that may result in social-distancing behaviors like discrimination (Link & Phelan, 2001). Stigma is a barrier to those in need of treatment for mental health issues and substance abuse, particularly for minority men and women, military personnel, and other vulnerable adults (Greene-Shortridge, Britt, & Castro, 2007; Gary, 2005; Hoge et al., 2004; Ojeda & McGuire, 2006; Segal, Coolidge, Mincic, & O’Riley, 2005; Wynaden et al., 2005). Herek, Captanio, and Widaman (2002) add to the definition of stigma by stating that it disadvantages the individual. Potential disadvantages arise from public stigma, as well as internalized stigma, and the effects of perceived stigma on stress levels, behavior, and health care utilization. The phenomenon of stigma has been studied in the general population, and has been reported in the literature regarding both a number of demographic/social groups, and regarding stigma around mental health problems (Interian et al., 2010; Moses, 2010), and substance abuse (Reynolds, Lehman, & Bennett, 2008; van Olphen, Eliason, Freudenberg, & Barnes, 2009). Olmsted et al. (2011) found that stigma among veterans (both public and internalized) was comparatively less studied, with much of the available research focused on stigma associated with mental health issues, whereas stigma associated with substance abuse treatment for veterans remained less studied.

Olmsted et al. (2011) reported that recent examinations of mental health care needs of soldiers returning from Afghanistan and Iraq focused attention on the role of stigma as a barrier to seeking care. Olmsted et al. (2011) asserted that individuals with psychological concerns, as opposed to those with physical or other medical problems, were perceived to be responsible for their illness. Therefore, these individuals were
particularly susceptible to stigma. Conditions perceived to be controllable by the affected individual, notably psychological problems, were more likely to elicit anger and punishing reactions from others rather than sympathy or assistance. Studies with both veteran and civilian populations concluded that those endorsing higher levels of mental health symptoms also endorsed the greatest concerns regarding stigma (Hoge et al., 2004; Kessler et al., 1995). Now, with a better understanding of the definition of stigma, relevant theories of stigma will be discussed.

**Theoretical Framework**

Overton and Medina (2008), summarized three theories of stigma specific to mental illness. With a greater understanding of these theories, as well as the process of stigma and the impact of stigma on those with mental health, it becomes clearer as to why the variables chosen for the current study are important to research. First, an explanation of the theories, the process of stigma, and the impact of stigma will be discussed. Then, the significance of these theories as they relate to the current study will be reviewed in the following section. Overton and Medina (2008) expounded upon three theories of stigma: social identity theory, self-stigma theory, and structural stigma.

**Social identity theory.** The first theory reviewed by Overton and Medina (2008) was social identity theory. Social identity theory considers the impact of social constructs on judgment and labeling of those who are different. Collectively, those who are viewed as different from the social norm are often evaluated negatively by society. This is not a new concept. First written about by Goffman (1963), when stigmatized people become unfavorable or dishonored in society, it leads to them becoming outcasts. Mental illness has historically been viewed as a moral or characterological flaw,
therefore, enforcing the outcast mentality. People with mental illnesses are not judged as whole persons, rather, they are stigmatized and reduced to tainted, discounted persons who fall short of a socially defined ideal identity (Crawford & Brown, 2002).

**Self-stigma.** The second theory of stigma reviewed by Overton and Medina (2008) was the theory of self-stigma. This is an internal evaluation process in which persons evaluate themselves. Though this could be influenced by internalized messages from society, ultimately, it is the individual who creates the self-imposed judgement. As a result, self-esteem is decreased as these persons tell themselves that they are not good enough, or that they do not fit in with expectations that are imposed by others in their environment (Blankertz, 2001). This leads to feelings of hate, doubt, inferiority, shame, and ultimately, impacts self-efficacy (Lenhardt, 2004).

**Structural stigma.** The third theory of stigma explored by Overton and Medina (2008) was structural stigma. This theory, in a more in depth manner, explores the process of stigma within a system and throughout a culture. This theory expounds upon the tangible barriers that are created for those who have mental illnesses. Structural stigma describes the working processes that deny people with mental illnesses entitlements which those considered “normal” take for granted (for example; the rights to hold elected offices, or the rights to have child custody). Therefore, these persons may find themselves challenged to engage in empathic and supportive relationships with others, to find happiness, or to participate in servitude and citizenship (Overton & Medina, 2008).

**Effects of stigma.** According to Corrigan (2004), the process of stigma involves the recognition of cues that a person has a mental illness, the activation of stereotypes,
and the prejudice and discrimination against that person. The effects and impact of stigma include, but are not limited to: lack of employment opportunities, limitations on housing, barriers to obtaining treatment services, negative attitudes stemming from mental health professionals, and the role of media in perpetuating the negative image of mental illness (Overton & Medina, 2008). According to Link (1987), the labeling of mental illness alone could affect employment opportunities without taking into account a person’s ability, knowledge, education, or qualifications for a particular job. In addition, stigma affects people with mental illness in the barriers that they face obtaining treatment services. Common barriers include financial challenges, entry into treatment, and negative attitudes toward people with mental illness (Simmons, 2001).

**Using education to mitigate stigma.** One way to mitigate stigma is through education by conveying factual information to specific populations. Education can be used to directly contradict myths with facts (Overton & Medina, 2008). Couture and Penn (2003) found that, although education was helpful in changing attitudes, it had little effect on subsequent behaviors. Therefore, education may help to mitigate stigma, but it does not appear to change help seeking behaviors. This may be due to ingrained belief systems that cannot counteract resilient stigma attitudes (Devine, 1995). Now that the theories related to stigma have been explained, a discussion will follow on how these theories relate to the current research.

**Theoretical framework and current study variables.** The three theories of stigma previously reviewed (social identity theory, self-stigma theory, and structural stigma) reflect the negative impact of being evaluated as different or an outlier by society, the self-evaluation process of internalized stigma, and the process of stigma that
creates barriers for those with mental illness. These theoretical concepts were particularly salient when considering the current research. Variables in the current study such as gender, age, rank at discharge, level of education, and employment status are all reflections of social identity theory as these are constructs that help to define service members and how a particular service member measures against the larger population of the military.

Current study variables such as positive self-reports of PTSD, depression, anxiety, or an alcohol use problem all fit within the theory of internalized stigma in that those who screen positively for any of these disorders may internalize stigma relating to possessing a mental health diagnosis, thereby affecting their ability to maintain employment and self-efficacy. The theory relating to the process of stigma that creates barriers is directly reflected in the current study variable titled LikelihoodAccess (the likelihood of accessing mental health care), and in the five variables chosen to assess for barriers to care (described in more detail in the following section). Unique to this study was the variable titled EducationImpact (the negative, neutral, or positive impact of mental health education received while in the military). As noted by Couture and Penn (2003), education may be helpful in changing attitudes, but it does not appear to change help seeking behaviors. In the preceding sections, I reviewed the definition of stigma, several theories relating to mental health stigma, and outlined how some study variables are rooted across the three reviewed stigma theories. In the following section, I will explore measures of stigma and barriers to care, and will culminate in an explanation of the chosen measure in the current study.
Measuring Stigma and Barriers to Care

With regards to stigma and barriers to care, two primary studies were reviewed during the process of choosing a measure of stigma and barriers to care to use current study: Clement, Brohan, Jeffery, Henderson, Hatch, and Thornicroft (2012), and Britt et al. (2008). Each of these researchers used different measures for stigma, and both used measures which combined stigma and barriers to care.

**Clement et al.’s (2012) measure of stigma and barriers to care.** Clement et al. (2012) developed and studied the psychometric properties of the Barriers to Access to Care Evaluation scale (BACE) related to people with mental health illness. BACE is a 36 item instrument with 23 non-stigma related barriers and 13 stigma related barriers to access to care. Examples of items on the BACE include, but are not limited to: Wanting to solve the problem on my own, Concern that it might harm my chances when applying for jobs, Feeling embarrassed or ashamed, Concern that I might be seen as ‘crazy,’ Lack of trust in professionals who provide professional care for mental health problems, and Concerns about the confidentiality of the information I share. Responses range from 0 (not at all) to 3 (a lot), with total scores ranging from 0-108, and higher scores indicating a greater barrier. The BACE treatment stigma subscale score is the mean of the stigma-related barriers ratings. Lin’s concordance statistic was used to calculate the overall test-retest reliability for the treatment stigma subscale, with a criterion of Lin’s $p_c >0.70$ used to indicate acceptable reliability. The internal consistency of the treatment stigma subscale was assessed using Cronbach’s alpha, with a value of above 0.7, but not higher than 0.9, indicating good internal consistency. The authors stated that, overall, the BACE demonstrated good convergent validity, and good content validity.
**Britt et al.’s (2008) measure of stigma and barriers to care.** Developed by Britt and colleagues (2008), the Perceived Stigma and Barriers to Care for Psychological Problems (PSBCPP) is an 11-item instrument which assesses stigma using six items, and assesses obstacles to psychological treatment seeking using five items.

**Stigma Items**
- It would be too embarrassing
- It would harm my career
- My peers might treat me differently
- My peers would blame me for the problem
- I would be seen as weak
- People important to me would think less of me

**Barriers to Care Items**
- I don’t know where to get help
- I don’t have adequate transportation
- It is difficult to schedule an appointment
- There would be difficulty getting time off work for treatment
- Mental health care costs too much money

Responses range from strongly disagree to strongly agree, with mean ratings for each summary scale serving as outcome measures. Possible scores range from 1, strongly disagree, to 5, strongly agree, with higher scores indicating greater perceptions of stigma and barriers to care. Factor analysis with varimax rotation yielded a two-factor solution. Cronbach’s alphas for the subscales on stigma and barriers to care were .91 and .74 respectively.
Measure of Stigma and Barriers to Care in the Current Study

After careful consideration, the Perceived Stigma and Barriers to Care for Psychological Problems scale (Britt et al., 2008) was used in the current study. I chose an instrument where internalized stigma was measured by the stigma subscale, and where external barriers to care were measured by the barriers subscale. I also chose an instrument that clearly separated these two concepts. Points of consideration when choosing a measure included: length of administration time, relevance of the questions to the current study population, relevance of the questions to the current study hypotheses, and previous use of the instrument with military samples. One reason the BACE was not used in the current study is the length of the measure (36 items). Another reason is that some of the questions measured variables which were beyond the scope of the current study (e.g., Wanting to solve the problem on my own, Concern that it might harm my chances when applying for jobs, and Concern that I might be seen as crazy). Conversely, the Perceived Stigma and Barriers to Care for Psychological Problems scale is briefer (11 items), contains questions which are all relevant to the scope of the current study, and the instrument was normed on a military population. In addition, the PSBCPP has been cited in the existing body of reviewed literature as being used more frequently than the BACE. This is evidenced by the discussion of Vogt’s (2011) study included in the literature review in which six of the 15 articles reviewed utilized the PSBCPP.

Statement of the Problem

A growing body of literature demonstrates that service members returning from wars in Iraq and Afghanistan are returning to wage another war against mental health disorders. Conflicts do not stop for these service members once they leave the battlefield.
Findings from the existing body of research consistently demonstrate that perceptions of stigma relating to accessing mental health care, negative attitudes towards treatment, and barriers exist with regards to mental health care utilization in the military (Britt et al., 2008; Kim et al., 2008; Pietrzak et al., 2009; Riddle et al., 2007; Vogt, 2011). Relevant research is consistent with findings indicating that the active service members and veterans who screen positively for psychiatric conditions are the ones who have greater perceptions of stigma and barriers to care, and are least likely to access care, thereby lending credence to the pervasive stigma (Britt et al., 2008; Hoge et al., 2004; Pietrzak et al., 2009). Of importance to note, the term stigma was used in the existing body of literature, and in the current study, as an encompassing term that included both the stigma of receiving mental health treatment and the stigma of having a mental health problem (public and internalized stigma, respectively).

While some research exists related to stigma and barriers to mental health care for military members, it suffers from several deficiencies. Existing research is lacking in exploring perceptions of stigma and barriers to mental health care utilization from former military service members, as many studies recruit participants from active, reserve, and Guard components. Research is also lacking in exploring where service members learn about and receive mental health care information while in the military. Further, of the studies reviewed for this report, only about one quarter include members of the military as researchers, and many of the studies do not use measures that were developed using military populations.

Though one does not have to be a member of a sample population to study said population, in the context of military research, it is important to have a military
researcher who can provide insights to the organization, and the culture surrounding mental illness/treatment in the military. Of note, the current study was conducted by a current service member of the Army National Guard. When considering validity and reliability of a measure to use with the military population, it is important to use one (such as the PSBCPP) which has been normed and developed using a military sample.

In order to assess predictors, most of the studies reviewed were conducted with personnel who have returned from combat, and who have already accessed mental health care. Few studies examined service members who may have psychiatric conditions without going to combat, or asked about their likelihood of accessing care. No study reviewed discussed the variable of impact of education (EducationImpact in the current study) about mental health care in the military. Lastly, existing research is sparse relating to military members from the OIF-OEF-OND eras of service, and existing research is even more meager when considering studies using veterans who are no longer serving as the sample.

Because of the reasons discussed, it appears as though a study is warranted. The current study sought to assess perceptions and attitudes towards mental health treatment, and to explore variables that might predict levels of stigma and barriers to care in a sample of former military service members, from all branches, who served in the military from 2001 to the present (defined as OIF/OEF/OND era, otherwise known as Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn). The current study contributed to the existing body of literature in that data collected was used to assess perceptions and attitudes toward mental health treatment, and explored stigmas and barriers to care to mental health care utilization by veterans. The current study also
uniquely contributed to the literature in that this study explored the education veterans received about mental health treatment while in the military, and asked if this education affected their likelihood of accessing care.

The current study differed from the existing literature in that data were gathered anonymously using surveys distributed through Survey Monkey, rather than using Veterans Affairs hospital (VA) data banks. This allowed for assessing self-reported symptoms of mental health disorders that might be current. In addition, the current study differed from the existing literature in that the current study explored where service members received information about mental health care in the military, if that education impacted perceived stigma and barriers to care, and if that education increased the likelihood of accessing care. This construct relating to the impact of education was not present in any study reviewed for the purposes of this report, and therefore the results relating to the construct of education are unique contributions to the body of existing research. In the next chapter, I will discuss the method of the current study, to include participants, procedures, measures, hypotheses, and proposed data analyses.
Chapter Two: Method

The purposes of the current study were (a) to examine which variables related to veterans accessing mental health care might predict higher levels of stigma scores on a stigma subscale, and (b) to examine which variables related to seeking mental health care might predict higher levels of barriers to care scores on a barriers to care subscale. Further, the purpose of this study was to confirm conclusions from previous studies which found that veterans who self-reported PTSD, depression, anxiety, alcohol use problem, or multiple diagnoses also endorsed higher levels of stigma and barriers to care. Finally, this study examined whether the education received while in the military about mental health illness and treatment mediated the relationship between stigma and the likelihood a veteran would access mental health care if they believed it was needed. In this chapter, participants, procedures, measures used, variables, and hypotheses examined in this study are described.

Participants

Participants for this research study were recruited from military service organizations such as the Veterans of Foreign Wars (VFW), the Disabled American Veterans (DAV), the American Veterans (AmVets), the American Legion, as well as through social media. The sample consisted of veterans from any branch who served during the OIF/OEF/OND era (since 2001), and who were not currently serving. Veterans who were collecting a government pension due to retirement or due to discharge from the military where a pension was being paid for medical reasons were excluded. This restriction was because veterans who collect a pension are considered by the Department of Defense (DoD) as persons being paid by the federal government.
Therefore, their participation would have warranted DoD approval. Persons who were collecting monetary disability payments (which do not take into account years of service as a requisite for payment to be granted as do pension payments) were allowed in the current study. Study materials were administered in the hopes of attaining a target population of 320 veterans from different branches of service across the country. At the end of data collection, the total sample size was 355 participants, exceeding the target number of 320. Based on previous studies, it was anticipated that the sample population would be largely Caucasian, male, and have an average education level of 12\textsuperscript{th} grade. All participants were at least 18 years of age, and were not asked to provide written consent prior to participation in this study as IRB approved a waiver of consent. Having a consent would have jeopardized anonymity, therefore, the participants read a cover letter (Appendix A) explaining the study, inclusion and exclusion criteria, and the requirements. Participants who were currently serving, or who were collecting a government pension due to retirement or medical reasons were excluded.

In summary, to begin recruitment, I placed a phone call to the leaders of local Veterans of Foreign Wars (VFW), Disabled American Veterans (DAV), American Veterans (AmVets), and American Legion organizations. The purpose of this call was to find points of contact to which I could send a cover letter and link to the surveys. Once these were sent, the leaders disseminated the cover letter and link through their organization’s national email distribution lists. In addition, a link was sent out for the cover letter and surveys through social media sites such as LinkedIn and Facebook. Inclusion and exclusion criteria were listed on the cover letter, and as such, participants reviewed the criteria, and decided if they were eligible. Whether or not participants
actually fell within the criteria for inclusion or exclusion was based on their honesty in choosing to continue from the cover letter to the survey, or in choosing not to participate. Once participants followed the link to the surveys and completed them, they were submitted directly to Survey Monkey. Data were collected via Survey Monkey during the month of July in 2017. Data were exported from Survey Monkey into an excel spreadsheet to prepare for analyses. A more in depth explanation of the current study sample demographics is provided in the next chapter, and can be referenced using Table 3.1.

Measures

Two questionnaires were used to assess for sociodemographic variables, as well as variables relating to stigma and barriers to care. These will be expounded upon in the following section.

Demographic questionnaire. A demographic survey was administered to all participants (Appendix B). Descriptive items such as gender (item 1), age (item 2), ethnicity (item 3), education (item 10), employment (item 11), relationship (item 12), and rank at discharge (item 5) were conceptualized as descriptive variables and were used to describe the sample. In addition, these variables were also used as independent variables in the first two regressions. A single item was used to assess the likelihood of accessing mental health services if respondents believed they needed care (item 24). This item, operationalized as LikelihoodAccess, was conceptualized as a dependent variable in the last two regressions. One item listed possible places that veterans may have received information about mental health treatment and symptoms of common mental disorders while in the military (item 21). Based on the education they received in the military, a
separate item asked if this education positively impacted the likelihood of accessing mental health care post discharge (item 22). This item, operationalized as EducationImpact of mental health care, was conceptualized as an independent variable in the first, second, and last regressions, and was used as a dependent variable in the third regression. Other items listed on the demographic form were used for the purposes of collecting data to be used at a future time with a qualitative method, and were not discussed further in this study.

**Operational Definitions**

The variables within this study were operationalized after careful consideration of operationalization by previous researchers and by taking into account the constructs of the current study. Operationalization of the variables listed on the demographic form and used in the current study will now be discussed.

**Demographic questionnaire.** Descriptive variables were operationalized as follows (Appendix B). Gender, a categorical variable, was assessed with one item in which participants identified their gender as *male, female*, or *transgendered* (item 1). The gender variable was operationalized as 0 *male*, 1 *female*, and 2 *transgendered*, however, no participants in the current study identified as transgendered. Age, a continuous variable, was assessed with one item in which respondents reported their age in years (item 2). Ethnicity, a categorical variable, was assessed with one item in which participants identified their ethnicity as *Caucasian (White), African American (Black), Asian, Latin, Native American or Alaska Native, Hawaiian or Pacific Islander, Multiple racial origin*, or *Other* (item 3). For descriptive data about the sample, the ethnicity variable was operationalized as 1 *Caucasian*, 2 *African American*, 3 *Latin*, 4 *Asian*, 5 *Native American or Alaska Native*, 6 *Hawaiian or Pacific Islander*, and 7 *Multiple racial origin*. Other items listed on the demographic form were used for the purposes of collecting data to be used at a future time with a qualitative method, and were not discussed further in this study.
Native American or Alaska Native, 6 Hawaiian or Pacific Islander, 7 Multiple racial origin, and 8 Other. During regression analyses, the ethnicity variable was coded as 1 Caucasian, and 2-8 Non-White. Education was measured with one item in which participants reported their education level as high school diploma, bachelor’s degree, master’s degree, or doctorate degree (item 10). The ordinal variable education was operationalized as 1 high school diploma, 2 bachelor’s degree, 3 master’s degree, and 4 doctorate degree.

Employment, a categorical variable, was measured with a single item in which participants reported their employment status as full-time, part-time, or not currently employed (item 11). Employment was operationalized as 1 full-time, 2 part-time, and 3 not currently employed. Relationship, a categorical variable, was measured with one item in which participants reported whether or not they were currently in a relationship with someone they consider a significant other (item 12). This item was coded as 0 no, or 1 yes.

Rank at discharge (Item #5) was assessed with a single item in which participants identified their rank at discharge (listed lowest to highest) and was coded as 1 junior enlisted, 2 junior NCO’s, 3 Sr. NCO’s, 4 warrant officers, 5 company grade officers, 6 field grade officers, or 7 general officer [for reader clarity, military personnel were divided into ranks that were based on the Army structure as follows: ranks of private, private first class, and specialist were considered junior enlisted; ranks of sergeant and staff sergeant were considered as junior noncommissioned officers (NCO’s); ranks of sergeant first class, sergeant major, first sergeant, and command sergeant major were considered as senior NCO’s; Warrant officers were in a category of their own, occupying
a space between enlisted and commissioned personnel; ranks of 1st lieutenant, 2nd lieutenant, and captain were considered company grade officers; ranks of major, lieutenant colonel, and colonel were considered field grade officers; and any general was considered a general officer. All officers were defined as commissioned, while enlisted personnel were defined as noncommissioned. It is important to note that Army ranks were used in the current study, as the researcher is a member of the Army National Guard, the language of this study may appear to be Army centric. Appendix C provides an overview of ranks and pay grades for all of the different branches of U. S. military]. For regression analyses, the categorical variable RankatDischarge was operationalized into an ordinal variable by the researcher assigning the numbers 1-7 to each rank listed, with respondent choices listed from lowest rank to highest rank.

Self-reported diagnosis was measured by five separate items in which respondents endorsed the presence of a mental health disorder from the choices of PTSD (item 16), anxiety (item 17), depression (item 18), alcohol use disorder (item 19), or multiple diagnoses (item 20). The categorical variable self-reported diagnosis of PTSD was operationalized as 0 no and 1 yes. This was also true for the categorical variables self-report of anxiety, depression, alcohol use disorder, and MultipleDiagnoses in which each was operationalized as 0 no and 1 yes. The continuous variable LikelihoodAccess, or the likelihood of receiving care if a respondent believed they needed it, was assessed using a single item on the demographic questionnaire in which respondents rated the likelihood they would access mental health care if they believed they needed care (item 24) using a 5-point Likert type scale. Choices ranged from 1 not very likely to 5 very likely. This ordinal variable was operationalized as 1 not likely, 2 less likely, 3 neither, 4 somewhat
likely, and 5 very likely. The LikelihoodAccess variable was used as a dependent variable in the last two regressions for hypotheses 4 and 5.

In order to assess for education about mental health treatment and symptoms of common disorders in the military, one item (item 21) asked respondents to choose all that applied from a list of places that Army service members commonly received information about mental health services and symptoms. Choices were coded as 1 annual briefings, 2 basic training, 3 AIT (advanced individual training), 4 flyer in the armory, 5 active duty posts, 6 training centers, 7 predeployment SRP (soldier readiness program), and 8 postdeployment SRP. Respondents had the option to write in a choice in the category 9, other, however, no participants chose this option. These answers were used to describe the sample. A separate question (item 22) asked veterans how the education they received about mental health treatment and symptoms of common disorders while in the military impacted their likelihood of accessing mental health care after discharge from service. This variable was named EducationImpact. Choices included 1 reduced likelihood, 2 did not change, and 3 increased likelihood. The answers were coded using the corresponding number from the choices. This variable was used as an independent variable in the regressions for hypotheses 1, 2, and 5, and was used as a dependent variable in the regressions for hypothesis 3.

**Perceived Stigma and Barriers to Care for Psychological Problems Survey.**

The Perceived Stigma and Barriers to Care for Psychological Problems survey (Britt et al., 2008) is an 11-item instrument in which six items are designed to assess perceived stigma and five items are designed to assess barriers to care (Appendix D). Each item is presented in Likert format using a 5-point response scale with choices as 1 strongly
disagree, 2 disagree, 3 neither agree nor disagree, 4 agree, and 5 strongly agree, with total scores from the stigma subscale ranging from 6 – 30, and total scores from the barriers subscale ranging from 5 - 25. Total scores of all items in each subscale (stigma subscale and barriers to care subscale) were used in this study in accordance with scoring criteria delineated by Britt et al. (2008). The authors reported the instrument (Appendix D) demonstrated good internal consistency (Cronbach’s alpha = .91 for the Stigma subscale, and Cronbach’s alpha = .74 for the Barriers to Care subscale). The authors reported the instrument appeared to be a valid measure of stigma and barriers to care with a sample of active service members and veterans.

Total scores on the two subscales of the Perceived Stigma and Barriers to Care for Psychological Problems instrument were used to measure the dependent variables stigma and barriers to care. With a maximum score of 30 on the stigma subscale, higher scores indicated higher perceptions of stigma. With a maximum score of 25 on the barriers to care subscale, higher scores indicated higher perceptions of barriers to care.

**Research Questions**

This study attempted to answer two research questions: (1) What variables predict stigma and barriers to care? and (2) Does the education received while in the military about symptoms and care related to mental illness have a relationship with veteran’s likelihood access of mental health care post discharge from the military?

**Research Hypotheses**

In this study, the unique contributions of the following variables on stigma and barriers to care were assessed: gender, ethnicity, age, education, employment,
Hypothesis 1. It was hypothesized that the following variables would significantly predict levels of stigma: gender, ethnicity, age, education, employment, relationship, RankatDischarge, PTSD, depression, anxiety, alcohol, self-report of MultipleDiagnoses, and EducationImpact.

Hypothesis 1a. There is an inverse, negative relationship between gender and increased levels of stigma such that female gender will significantly negatively predict the level of stigma. Reports from several studies specified that males endorsed more items, and had higher scores, on measures of stigma (Hoge et al., 2004; Kim et al., 2011; Pietrzak et al., 2009).

\[ H_0: \beta_{\text{Gender}/S} = 0 \]
\[ H_1: \beta_{\text{Gender}/S} < 0 \]

Hypothesis 1b. There is an inverse relationship between ethnicity and higher levels of stigma such that ethnicities other than White will significantly positively predict lower levels of stigma. Research indicated that veterans who identified as White endorsed more items, and had higher scores, on measures of stigma (Britt et al., 2008; Clement et al., 2012; Pietrzak et al., 2009; Vogt, 2011).

\[ H_0: \beta_{\text{Ethnicity}/S} = 0 \]
\[ H_1: \beta_{\text{Ethnicity}/S} < 0 \]

Hypothesis 1c. There is an inverse, negative relationship between age and higher levels of stigma such that older age will significantly negatively predict the level of
stigma. According to Hoge et al. (2004) and Pietrzak et al. (2009), younger soldiers had higher stigma scores.

\begin{align*}
H_0: \beta_{\text{Age}/S} &= 0 \\
H_1: \beta_{\text{Age}/S} &< 0
\end{align*}

**Hypothesis 1d.** There is an inverse, negative relationship between levels of education and higher levels of stigma such that higher levels of education will significantly negatively predict the level of stigma. Education levels have consistently been found to be related to reduced stigma in soldiers (Hoge et al., 2004, Kim et al., 2011, Pietrzak et al., 2009, Riddle et al., 2007).

\begin{align*}
H_0: \beta_{\text{Education}/S} &= 0 \\
H_1: \beta_{\text{Education}/S} &< 0
\end{align*}

**Hypothesis 1e.** There is a positive relationship between employment and higher levels of stigma such that full-time employment will significantly positively predict the level of stigma. Clement et al. (2012) and Vogt (2011) reported that being employed full-time was related to perceptions of public stigma.

\begin{align*}
H_0: \beta_{\text{Employment}/S} &= 0 \\
H_1: \beta_{\text{Employment}/S} &> 0
\end{align*}

**Hypothesis 1f.** There is an inverse, negative relationship between those who endorse being in a relationship with someone that the participant considers a significant other and levels of stigma such that being in a relationship will significantly negatively predict the level of stigma. Pietrzak et al. (2009) reported that being married and having social support were related to decreased stigma.

\begin{align*}
H_0: \beta_{\text{Relationship}/S} &= 0
\end{align*}
H1: $\beta_{\text{Relationship}/S} < 0$

**Hypothesis 1g.** There is an inverse relationship between rank at discharge and increased levels of stigma such that higher rank at discharge will significantly positively predict lower levels of stigma. Riddle et al. (2007) reported that being an officer, or being higher enlisted, was strongly related to lower stigma scores.

H0: $\beta_{\text{Rank at discharge}/S} = 0$

H1: $\beta_{\text{Rank at discharge}/S} < 0$

**Hypothesis 1h.** There is a positive relationship between a self-reported diagnosis of PTSD and higher levels of stigma such that self-reported diagnosis of PTSD will significantly positively predict the level of stigma. Several researchers found this to be true (Hoge et al., 2004, Kim et al., 2011, Pietrzak et al., 2009).

H0: $\beta_{\text{PTSD}/S} = 0$

H1: $\beta_{\text{PTSD}/S} > 0$

**Hypothesis 1i.** There is a positive relationship between self-reported diagnosis of depression and higher levels of stigma such that self-reported diagnosis of depression will significantly positively predict the level of stigma. Several researchers found this to be true (Hoge et al., 2004, Kim et al., 2011, Pietrzak et al., 2009).

H0: $\beta_{\text{Depression}/S} = 0$

H1: $\beta_{\text{Depression}/S} > 0$

**Hypothesis 1j.** There is a positive relationship between self-reported diagnosis of anxiety and higher levels of stigma such that self-reported diagnosis of anxiety will significantly positively predict the level of stigma. Pietrzak et al. (2009) and Riddle et al.
(2007) reported soldiers who screened positively for anxiety also endorsed higher levels of stigma.

\[ H_0: \beta_{\text{Anxiety}/S} = 0 \]
\[ H_1: \beta_{\text{Anxiety}/S} > 0 \]

**Hypothesis 1k.** There is a positive relationship between self-reported diagnosis of an alcohol use problem and higher levels of stigma such that self-reported diagnosis of alcohol will significantly positively predict the level of stigma. Pietrzak et al. (2009) reported soldiers who screened positively for an alcohol use disorder also endorsed higher levels of stigma.

\[ H_0: \beta_{\text{Alcohol}/S} = 0 \]
\[ H_1: \beta_{\text{Alcohol}/S} > 0 \]

**Hypothesis 1l.** There is a positive relationship between self-reported multiple diagnoses of mental health problems and higher levels of stigma such that self-reports of multiple diagnoses will significantly positively predict the level of stigma. Pietrzak et al. (2009) reported soldiers who screened positively for more than one mental health concern also endorsed higher levels of stigma.

\[ H_0: \beta_{\text{MultipleDiagnoses}/S} = 0 \]
\[ H_1: \beta_{\text{MultipleDiagnoses}/S} > 0 \]

**Hypothesis 1m.** There is an inverse, negative relationship between impact of education about mental health care and levels of stigma such that more positive education impact will significantly negatively predict the level of stigma.

\[ H_0: \beta_{\text{EducationImpact}/S} = 0 \]
\[ H_1: \beta_{\text{EducationImpact}/S} < 0 \]
**Hypothesis 2.** It was hypothesized that the following variables would significantly predict levels of barriers to care: gender, ethnicity, age, education, employment, relationship, Rank at Discharge, PTSD, depression, anxiety, and Multiple Diagnoses, and Education Impact.

**Hypothesis 2a.** There is an inverse, negative relationship between gender and higher barriers to care such that female gender will significantly negatively predict the level of barriers to care. Reports from several studies specified that being of the male gender were associated with higher scores on barriers to care (Hoge et al., 2004; Kim et al., 2011; Pietrzak et al., 2009).

\[ H_0: \beta_{\text{Gender}/\text{BC}} = 0 \]
\[ H_1: \beta_{\text{Gender}/\text{BC}} < 0 \]

**Hypothesis 2b.** There is an inverse relationship between ethnic minority status and higher levels of barriers to care such that ethnicities other than White will significantly positively predict less barriers to care. Research indicated that veterans who identified as White endorsed more items, and had higher scores, on measures of barriers to care (Britt et al., 2008; Clement et al., 2012; Pietrzak et al., 2009; Vogt, 2011).

\[ H_0: \beta_{\text{Ethnicity}/\text{S}} = 0 \]
\[ H_1: \beta_{\text{Ethnicity}/\text{S}} < 0 \]

**Hypothesis 2c.** There is an inverse, negative relationship between age and higher levels of barriers to care such that the older age will significantly negatively predict the level of barriers to care. According to Hoge et al. (2004) and Pietrzak et al. (2009), younger soldiers endorsed more barriers to care than older soldiers.

\[ H_0: \beta_{\text{Age}/\text{BC}} = 0 \]
H1: \( \beta_{\text{Age/BC}} < 0 \)

**Hypothesis 2d.** There is an inverse, negative relationship between education and higher levels of barriers to care such that higher levels of education will significantly negatively predict the level of barriers to care. In previous studies, participants with higher education levels consistently endorsed less items on barriers to care measures (Hoge et al., 2004, Kim et al., 2011, Pietrzak et al., 2009, Riddle et al., 2007).

H0: \( \beta_{\text{Education/BC}} = 0 \)

H1: \( \beta_{\text{Education/BC}} < 0 \)

**Hypothesis 2e.** There is a positive relationship between employment and higher levels of barriers to care such that full-time employment will significantly positively predict the level of barriers to care. Clement et al. (2012) and Vogt (2011) reported that being employed full-time was related to higher perceptions of barriers to care.

H0: \( \beta_{\text{Employment/S}} = 0 \)

H1: \( \beta_{\text{Employment/S}} > 0 \)

**Hypothesis 2f.** There is an inverse, negative relationship between those who endorse being in a relationship with someone that the participant considers a significant other and levels of barriers to care such that being in a relationship will significantly negatively predict the level of barriers to care. Pietrzak et al. (2009) reported that being married and having social support were related to endorsement of less items on a measure of barriers to care.

H0: \( \beta_{\text{Relationship/BC}} = 0 \)

H1: \( \beta_{\text{Relationship/BC}} < 0 \)
Hypothesis 2g. There is an inverse relationship between rank at discharge and higher levels of barriers to care such that higher rank at discharge will significantly positively predict less levels of barriers to care. Riddle et al. (2007) reported that being an officer, or being higher enlisted, was strongly related to lower scores on barriers to care measures. In addition, Gibbs et al. (2011) and Kim et al. (2011) reported similar findings.

H0: $\beta_{\text{Rank at Discharge/BC}} = 0$

H1: $\beta_{\text{Rank at Discharge/BC}} < 0$

Hypothesis 2h. There is a positive relationship between a self-reported diagnosis of PTSD and higher levels of barriers to care such that self-reported diagnosis of PTSD will significantly positively predict the level of barriers to care. Several researchers found this to be true (Hoge et al., 2004, Kim et al., 2011, Pietrzak et al., 2009).

H0: $\beta_{\text{PTSD/BC}} = 0$

H1: $\beta_{\text{PTSD/BC}} > 0$

Hypothesis 2i. There is a positive relationship between self-reported diagnosis of depression and higher levels of barriers to care such that self-reported diagnosis of depression will significantly positively predict the level of barriers to care. Several researchers found this to be true (Hoge et al., 2004, Kim et al., 2011, Pietrzak et al., 2009).

H0: $\beta_{\text{Depression/BC}} = 0$

H1: $\beta_{\text{Depression/BC}} > 0$
**Hypothesis 2j.** There is a positive relationship between self-reported diagnosis of anxiety and higher levels of barriers to care such that self-reported diagnosis of anxiety will significantly positively predict the level of barriers to care. Kim et al. (2011), Pietrzak et al. (2009), and Riddle et al. (2007) reported soldiers who screened positively for anxiety had higher scores on a measure of barriers to care than soldiers who did not.

\[ H_0: \beta_{\text{Anxiety}/\text{BC}} = 0 \]
\[ H_1: \beta_{\text{Anxiety}/\text{BC}} > 0 \]

**Hypothesis 2k.** There is a positive relationship between self-reported diagnosis of an alcohol use problem and higher levels of barriers to care such that self-reported diagnosis of alcohol will significantly positively predict the level of barriers to care. Pietrzak et al. (2009) reported soldiers who screened positively for an alcohol use disorder also endorsed more items on a measure of barriers to care.

\[ H_0: \beta_{\text{Alcohol}/\text{BC}} = 0 \]
\[ H_1: \beta_{\text{Alcohol}/\text{BC}} > 0 \]

**Hypothesis 2l.** There is a positive relationship between self-reported multiple diagnoses of mental health problems and higher levels of barriers to care such that self-reports of multiple diagnoses will significantly positively predict the level of barriers to care. Pietrzak et al. (2009) reported soldiers who screened positively for more than one mental health concern also endorsed higher levels of barriers to care.

\[ H_0: \beta_{\text{MultipleDiagnoses}/\text{S}} = 0 \]
\[ H_1: \beta_{\text{MultipleDiagnoses}/\text{S}} > 0 \]
**Hypothesis 2m.** There is an inverse, negative relationship between impact of education about mental health care and levels of barriers to care such that more positive education impact will significantly negatively predict lower levels of barriers to care.

\[ H_0: \beta_{\text{EducationImpact}/\text{BC}} = 0 \]
\[ H_1: \beta_{\text{EducationImpact}/\text{BC}} < 0 \]

**Hypothesis 3.** It was hypothesized that higher total stigma scores and higher total barrier scores would significantly negatively predict the level of education impact.

**Hypothesis 3a.** There is an inverse, negative relationship between total stigma scores and EducationImpact such that higher total stigma scores will significantly negatively predict more positive EducationImpact.

\[ H_0: \beta_{\text{TotalStigma}/\text{EI}} = 0 \]
\[ H_1: \beta_{\text{TotalStigma}/\text{EI}} < 0 \]

**Hypothesis 3b.** There is an inverse, negative relationship between total barrier scores and EducationImpact such that higher total barrier scores will significantly negatively predict more positive EducationImpact.

\[ H_0: \beta_{\text{TotalBarrierstoCare}/\text{EI}} = 0 \]
\[ H_1: \beta_{\text{TotalBarrierstoCare}/\text{EI}} < 0 \]

**Hypothesis 4.** It was hypothesized that higher total stigma scores and higher total barrier scores would significantly negatively predict the level of likelihood of accessing mental health care (LikelihoodAccess).

**Hypothesis 4a.** There is an inverse, negative relationship between total stigma scores and LikelihoodAccess such that higher total stigma scores will significantly negatively predict higher levels of LikelihoodAccess.
H0: \( \beta_{\text{TotalStigma/LA}} = 0 \)

H1: \( \beta_{\text{TotalStigma/LA}} < 0 \)

**Hypothesis 4b.** There is an inverse, negative relationship between total barrier scores and LikelihoodAccess such that higher total barrier scores will significantly negatively predict higher levels of LikelihoodAccess.

H0: \( \beta_{\text{TotalBarriertoCare/LA}} = 0 \)

H1: \( \beta_{\text{TotalBarriertoCare/LA}} < 0 \)

**Hypothesis 5.** A mediation analysis with PROCESS in SPSS was conducted to assess for the presence of a mediator variable between the independent variables total stigma scores and education impact, and the outcome variable likelihood access. It was hypothesized that education impact negatively mediates the effect of total stigma scores on likelihood access.

H0: \((b_{\text{TotalStigmaScores}})(b_{\text{EducationImpact}}) = 0\)

H1: \((b_{\text{TotalStigmaScores}})(b_{\text{EducationImpact}}) \neq 0\)

**Study Design**

This study involved cross-sectional survey research of veterans who served from 2001 to the present in any U.S. military branch, who were no longer serving, and who were not collecting a government pension.

**Procedure**

Permission to use the email listserv’s or email lists for National Service organizations (VFW, DAV, AmVets, American Legion) was solicited from National Commanders for these organizations. The University of Kentucky IRB found that there was no need for an informed consent given the nature of the study. Instead, the cover
letter was deemed appropriate as a means of informing participants, and would suffice in lieu of an informed consent as respondents would remain anonymous in this manner. Therefore, participants viewed the cover letter (Appendix A) prior to taking the surveys. These commanders were given a copy of the cover letter, as well as a brief summary of the proposed research. It was then requested that the cover letter, as well as a link to the surveys through Survey Monkey, would be disseminated through these national email lists. In addition, the same cover letter and link through Survey Monkey was disseminated through social media such as Facebook and LinkedIn.

Once the cover letter was read, participants followed the Survey Monkey link and completed the surveys. The demographic questionnaire appeared first, followed by the Perceived Stigma and Barriers to Care for Psychological Problems survey. It was anticipated that it would take approximately 15 minutes for participants to complete the survey materials once they read the cover letter. Survey Monkey provided statistics of how long it took for participants to complete the survey. In actuality, it only took participants between five and eight minutes to complete the study materials. This time varied and was ultimately dependent on the individual completing the surveys. Once completed, participants submitted their study materials through the online submission on Survey Monkey. These submissions were returned to me, the primary investigator.

Data collection lasted throughout the months of July and August of 2017. Within this time, I as the researcher used methods of constantly contacting the organizations that disseminated the surveys. On a weekly basis, I would either call or walk into the local veterans’ organizations with whom I had partnered. The result was that these organizations would resend the link and survey information on a weekly basis. In
addition, some of the organizations had physical hard copies of the study packet (to include the cover letter), which were available for veterans during meetings, or during their visits to the organization. As such, veterans were able to read the study material, then go home and complete the surveys on line. This method of constantly contacting the organizations proved to be effective in both the consistent dissemination of the study material, and in the outcome of the sample size. Lastly, the survey information was disseminated through Facebook and LinkedIn by the researcher every week as well.

Mertler and Vannatta (2005) described a conservative method of determining the number of participants needed for a multiple linear regression: multiply the number of independent variables by 20. In the current study, 14 independent variables multiplied by 20 resulted in 280 participants needed to calculate multiple linear regressions. My goal was to have at least 320 participants. After data collection was complete, data from a sample of 355 participants was used in the current study.

**Data Analyses**

All data were analyzed using IBM SPSS Statistics version 24. Prior to any analyses, all data were prepared and cleaned. Correlations of predictor and dependent variables were examined, and collinearity of predictor variables were examined. Patterns of missing data were addressed using listwise deletion prior to analyses. In total, 11 cases were removed using listwise deletion, resulting in a total sample of $N = 355$. Modes and frequencies were calculated for each categorical variable across the study sample (gender, ethnicity, RankatDischarge, education, employment, relationship, PTSD, anxiety, depression, alcohol, MultipleDiagnoses, EducationImpact, and LikelihoodAccess).
In total, the data were analyzed using four linear regressions, and one mediation regression. The first two linear regression analyses separately examined predictors of higher levels of stigma (scores measured using the Stigma subscale), and increased barriers to care (scores measured using the Barriers to Care subscale). Stigma was the dependent variable in the first regression, and barriers to care was the dependent variable in the second regression. Independent variables for both regressions included: gender, ethnicity, age, education, employment, relationship, RankatDischarge, PTSD, depression, anxiety, alcohol, MultipleDiagnoses, and EducationImpact.

The second two linear regression analyses separately examined predictors of EducationImpact and LikelihoodAccess. EducationImpact was the dependent variable in the third regression, and LikelihoodAccess was the dependent variable in the fourth regression. Independent variables for the third and fourth regressions were total stigma subscale scores and total barriers to care subscale scores. The last mediation analysis with PROCESS examined mediator effects between independent variables TotalStigmaScore and EducationImpact, and the dependent variable LikelihoodAccess.

**Reliability Analyses**

The internal consistency of the stigma and barriers to care data collection instrument (The Perceived Stigma and Barriers to Care for Psychological Problems survey; Britt et al., 2008) was calculated using Cronbach’s alpha. In the current study, the reliability coefficient for the stigma subscale was above the minimal suggested cut-off of $\alpha = .70$ ($\alpha = .71$, Nunally, 1978). The reliability coefficient for the barriers subscale was below the minimal suggested cut-off of $\alpha = .70$ ($\alpha = .64$). This indicated that all of
the items in the barriers subscale may not be measuring the same construct of “barriers to mental health care.” In the following chapter, I will present the results of data analyses.
Chapter Three: Results

In this chapter, results of the data analyses are presented. The purposes of the current study were (a) to examine which variables might predict higher levels of stigma regarding mental health care, and (b) to examine which variables might predict higher endorsements of barriers to care regarding mental health care. In addition, this study aimed at identifying areas where former military service members received mental health care education while in service, and examined the impact of this education on the likelihood of accessing care after discharge from service.

Demographics of the Study Sample

As was anticipated, the sample population was largely Caucasian, male, and had an average education level of 12\textsuperscript{th} grade. Table 3.1 summarizes the sample demographics. Participants were primarily male (72\%), and Caucasian (52\%). Interestingly, 34\% of the sample was African American. This is a higher percentage of African American respondents than was observed in other studies reviewed for the purposes of this report. With regards to education, 58\% of the sample had a high school diploma and 36\% had a bachelor’s degree. Again, the percentage of respondents with a bachelor’s degree was higher in the current study than was observed in other studies reviewed for the purposes of this report. The majority of the study sample was employed full-time (77\%), while 18\% were employed part-time, and 3\% were not currently employed. The age of respondents fell largely into the 30-39 age range (73\%). Participant’s rank at discharge was dominantly in the enlisted ranks, totaling 87\%, and separated by E1-E4 (24\%), E5-E6 (29\%), and E7-E9 (34\%). Officer ranks at discharge
comprised the remaining 12%. Lastly, 86% of respondents endorsed being in a relationship.

Table 3.1
Sample Demographics (N=355)

<table>
<thead>
<tr>
<th>Measure</th>
<th>n</th>
<th>%</th>
<th>Measure</th>
<th>n</th>
<th>%</th>
</tr>
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<td></td>
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<tr>
<td>Part-time</td>
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<td>Not Currently</td>
<td>12</td>
<td>3.3</td>
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</tr>
</tbody>
</table>

Descriptive Statistics

The means, standard deviations, standardized skewness coefficients, and standardized kurtosis coefficients were calculated for each variable in the study (Table 3.2). The standardized skewness and standardized kurtosis coefficients indicated that the following variables were within the +2 range, suggesting that they were normally distributed (George & Mallery, 2010): total stigma scores, total barriers scores, gender, education, employment, EducationImpact, LikelihoodAccess, age, and RankatDischarge.
However, relationship was negatively skewed, with a standardized skewness coefficient of -2.29, with a standardized kurtosis coefficient of 3.27. This skewness coefficient indicated that the mean for this distribution fell to the right of the mean of a normally distributed variable. Thus, participants in this sample reported being in a relationship to a slightly higher degree than what would be expected in a normal distribution. Therefore, the distribution of scores for relationship were non-normally distributed.

The following variables were positively skewed: ethnicity (standardized skewness coefficient of 2.93), PTSD (standardized skewness coefficient of 5.18), anxiety (standardized skewness coefficient of 2.99), depression (standardized skewness coefficient of 2.51), alcohol (standardized skewness coefficient of 2.94), and MultipleDiagnoses (standardized skewness coefficient of 6.46). These skewness coefficients indicated that the mean for these distributions fell to the right of the mean of a normally distributed variable. Thus, participants in this sample reported being of ethnicities other than White, and self-reported having a diagnosis of PTSD, anxiety, depression, alcohol use disorder, or a multiple diagnoses to a slightly lower degree than what would be expected in a normal distribution. Therefore, the distribution of scores for the above mentioned positively skewed outcomes were non-normally distributed.

Forcing the distribution into normality may have resulted in losing an accurate picture of what members from this population actually experienced, and consequently, losing a more accurate representation of the relationships among selected variables. Taking this perspective into consideration, it was decided that the original distribution would be used. However, based on departures from normality, the results should be interpreted with caution due to the potential for an increased chance of committing a
Type I error- which occurs when one finds statistical significance where it does not exist (Tabachnick & Fidell, 2013).

Though not used in analyses for the current study, data were collected regarding where participants could recall receiving education about mental health diagnoses and treatment. Item number 21 on the demographic questionnaire (Appendix B) asked participants to check all places and venues that would apply. Results indicated that 93% of participants endorsed basic training, 76% endorsed annual briefings, 75% endorsed active duty posts, 39% endorsed predeployment readiness programs, 38% endorsed postdeployment readiness programs, 28% endorsed military occupational training, and 22% endorsed flyer in the armory. Training centers was one of the options presented, however, no participants endorsed this option. In addition, a space was left blank for participants to fill in any other venues, however, no participants chose to do so.
Table 3.2  
*Descriptive Statistics (N = 355)*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0.27</td>
<td>0.44</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>1.69</td>
<td>1.05</td>
</tr>
<tr>
<td>Education</td>
<td>1.45</td>
<td>0.58</td>
</tr>
<tr>
<td>Employment</td>
<td>1.25</td>
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</tr>
<tr>
<td>Age</td>
<td>35.13</td>
<td>5.94</td>
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<tr>
<td>Rank at discharge</td>
<td>2.41</td>
<td>1.13</td>
</tr>
<tr>
<td>PTSD</td>
<td>0.03</td>
<td>0.18</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.08</td>
<td>0.28</td>
</tr>
<tr>
<td>Depression</td>
<td>0.11</td>
<td>0.31</td>
</tr>
<tr>
<td>Alcohol</td>
<td>0.09</td>
<td>0.28</td>
</tr>
<tr>
<td>MultipleDiagnoses</td>
<td>0.02</td>
<td>0.15</td>
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<tr>
<td>Relationship</td>
<td>0.88</td>
<td>0.33</td>
</tr>
<tr>
<td>LikelihoodAccess</td>
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</tr>
<tr>
<td>EducationImpact</td>
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<td>0.47</td>
</tr>
<tr>
<td>TotalStigmaScore</td>
<td>19.1</td>
<td>3.71</td>
</tr>
<tr>
<td>TotalBarrierScore</td>
<td>13.7</td>
<td>2.64</td>
</tr>
</tbody>
</table>

**Evaluation of Assumptions of Regression**

Several analyses were conducted to test the assumptions for regression analysis. The results are discussed below.

**Multicollinearity.** I examined the tolerance and variance inflation factor (VIF) to determine the level of multicollinearity. Tolerance values below .10 indicate possible multicollinearity (Menard, 1995). Tolerance values were greater than .10 for all predictor variables in this study: gender (.942), ethnicity (.933), education (.850), employment (.968), age (.923), rank at discharge (.911), relationship (.969), PTSD (.933), anxiety (.915), depression (.805), alcohol (.829), dual diagnosis (.680), education impact (.916). A VIF greater than 10 would suggest multicollinearity (Bowerman & O’Connell, 1990). The VIF was less than 10 for all predictor variables in this study: gender (1.061),
ethnicity (1.071), education (1.177), employment (1.033), age (1.083), rank at discharge (1.098), relationship (1.031), PTSD (1.072), anxiety (1.093), depression (1.243), alcohol (1.206), dual diagnosis (1.471), education impact (1.091). The results of both tolerance and VIF values suggested no multicollinearity.

**Normality.** For the outcome variables total stigma scores and total barriers scores, normality was assessed by examining the normal p-p plot which reflected that the assumption of normality was met for both stigma and barriers to care (Figures 1 and 2, respectively).

*Figure 3.1.* Statistical output of normal p-p plot of regression standardized residual for testing assumptions. Total stigma score as the dependent variable.
Figure 3.2. Statistical output of normal p-p plot of regression standardized residual for testing assumptions. Total barrier scores as the dependent variable.

**Correlation Analyses**

Four bivariate correlations were conducted using SPSS. Table 3.3 summarizes the first correlation analysis measuring bivariate correlations among stigma study variables. Education and ethnicity were significantly correlated, $r = .200$, $p < .01$. Employment and gender were significantly correlated, $r = .103$, $p < .05$. Age was significantly correlated with gender ($r = -.097$, $p < .05$) and with education ($r = .117$, $p < .05$). RankatDischarge was significantly correlated with gender ($r = -.118$, $p < .05$), education ($r = .212$, $p < .01$), and with employment ($r = -.118$, $p < .05$). PTSD was significantly correlated with education, $r = -.092$, $p < .05$. Anxiety was significantly correlated with RankatDischarge, $r = -.101$, $p < .05$. MultipleDiagnoses was significantly correlated with education ($r = -.119$, $p < .05$), anxiety ($r = .158$, $p < .01$), depression ($r = .174$, $p < .01$), etc.
.372, $p < .01$), and alcohol ($r = .356, p < .01$). EducationImpact was significantly correlated with age ($r = .181, p < .01$), anxiety ($r = -.095, p < .05$), and with MultipleDiagnoses ($r = -.137, p < .01$). TotalStigmaScores was significantly correlated with gender ($r = -.145, p < .01$), ethnicity ($r = .093, p < .05$), age ($r = -.154, p < .01$), depression ($r = .144, p < .01$), relationship ($r = -.105, p < .05$), and with EducationImpact ($r = -.272, p < .01$).
### Table 3.3
**Bivariate Correlations among Stigma Study Variables (n=355)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
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<td>1. Gender</td>
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<td>.06</td>
<td>.07</td>
<td>.10*</td>
<td>-.10*</td>
<td>-.12*</td>
<td>-.01</td>
<td>-.02</td>
<td>-.07</td>
<td>.04</td>
<td>-.01</td>
<td>-.01</td>
<td>.04</td>
<td>-.15**</td>
</tr>
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<td>-.04</td>
<td>.06</td>
<td>-.03</td>
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<td>-.01</td>
<td>-.01</td>
<td>.01</td>
<td>.09*</td>
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<td>-.05</td>
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<td>5. Age</td>
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</table>

*p < .05. **p < .01.
Table 3.4 summarizes the second correlation analysis measuring bivariate correlations among barriers to care study variables. The same study variables were used in the second correlation, with the exception of the variable measuring total scores. The first correlation used TotalStigmaScore, whereas the second correlation used TotalBarrierScore. As such, the correlation values depicted on Table 3.4 are the same, with the exception of TotalBarrierScore. TotalBarrierScore was significantly correlated with employment ($r = .257, p < .01$), RankatDischarge ($r = -.099, p < .05$), and with EducationImpact ($r = -.092, p < .05$).
Table 3.4
Bivariate Correlations among Barriers to Care Study Variables (n=355)

<table>
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<tr>
<th>Variable</th>
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<th>2</th>
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<td>.10*</td>
<td>-.10*</td>
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<td>-.02</td>
<td>.07</td>
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<td>-.03</td>
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<td>.06</td>
<td>-.03</td>
<td>.07</td>
<td>.08</td>
<td>.04</td>
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<td>-.01</td>
<td>.01</td>
<td>.01</td>
<td>.05</td>
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</tr>
<tr>
<td>3. Education</td>
<td>-.04</td>
<td>.12*</td>
<td>.21**</td>
<td>-.09*</td>
<td>-.03</td>
<td>.01</td>
<td>-.05</td>
<td>-.12*</td>
<td>-.03</td>
<td>.05</td>
<td>-.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Employment</td>
<td>-.05</td>
<td>-.12*</td>
<td>-.03</td>
<td>.05</td>
<td>.01</td>
<td>-.05</td>
<td>-.04</td>
<td>-.04</td>
<td>-.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.26**</td>
</tr>
<tr>
<td>5. Age</td>
<td>-.08</td>
<td>.06</td>
<td>-.05</td>
<td>.04</td>
<td>-.03</td>
<td>.08</td>
<td>.18**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. RankatDischarge</td>
<td>-.01</td>
<td>-.10*</td>
<td>-.01</td>
<td>-.01</td>
<td>-.02</td>
<td>.08</td>
<td>.04</td>
<td>-.10*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. PTSD</td>
<td>-.01</td>
<td>-.02</td>
<td>-.06</td>
<td>.08</td>
<td>-.02</td>
<td>-.02</td>
<td>-.08</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8. Anxiety</td>
<td>-.04</td>
<td>-.06</td>
<td>.16**</td>
<td>-.04</td>
<td>-.10*</td>
<td>.05</td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>9. Depression</td>
<td>-.05</td>
<td>.37**</td>
<td>-.09</td>
<td>-.07</td>
<td>.01</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>10. Alcohol</td>
<td>-.36**</td>
<td>.06</td>
<td>-.05</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11. MultipleDiagnoses</td>
<td>-.01</td>
<td>-.14**</td>
<td>.03</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12. Relationship</td>
<td>-.05</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>13. EducationImpact</td>
<td>-.09*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>14. TotalBarrierScores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.
Table 3.5 summarizes the third correlation analysis measuring bivariate correlations among EducationImpact study variables. TotalBarrierScore was significantly correlated with TotalStigmaScore, \( r = .13, p < .01 \). EducationImpact was significantly correlated with both TotalStigmaScore and TotalBarrierScore (\( r = -.27, p < .01 \); and \( r = -.09, p < .05 \) respectively).

Table 3.5
Bivariate Correlations among Education Impact Study Variables (N = 355)

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TotalStigmaScore</td>
<td>-</td>
<td>.13**</td>
<td>-.27**</td>
</tr>
<tr>
<td>2. TotalBarrierScore</td>
<td>-</td>
<td>-</td>
<td>-.09*</td>
</tr>
<tr>
<td>3. EducationImpact</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p < .05 \). \** \( p < .01 \)**

Lastly, Table 3.6 summarizes the fourth correlation analysis measuring bivariate correlations among LikelihoodAccess study variables. TotalBarrierScore was significantly correlated with TotalStigmaScore, \( r = .13, p < .01 \). LikelihoodAccess was significantly correlated with TotalStigmaScore, \( r = -.11, p < .05 \).

Table 3.6
Bivariate Correlations among Likelihood Access Study Variables (N = 355)

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TotalStigmaScore</td>
<td>-</td>
<td>.13**</td>
<td>-.11*</td>
</tr>
<tr>
<td>2. TotalBarrierScore</td>
<td>-</td>
<td>-</td>
<td>-.04</td>
</tr>
<tr>
<td>3. LikelihoodAccess</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p < .05 \). \** \( p < .01 \)**

Multiple Regression Analyses

In total, four multiple regression analyses, and one mediation analysis with PROCESS were conducted in the current study. Table 3.7 summarizes the results of hypotheses testing.
<table>
<thead>
<tr>
<th>Research Hypotheses</th>
<th>Statistical Hypotheses</th>
<th>Statistical Results</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Female gender will negatively predict the level of stigma</td>
<td>H0: $\beta_{\text{Gender/S}} = 0$</td>
<td>$\beta = -.15, p &lt; .05$</td>
<td>1a supported</td>
</tr>
<tr>
<td></td>
<td>H1: $\beta_{\text{Gender/S}} &lt; 0$</td>
<td>$(M = .27, SD = .445), t(14) = -2.92, p &lt; .05$</td>
<td></td>
</tr>
<tr>
<td>1b. Ethnicities other than White will positively predict lower levels of stigma</td>
<td>H0: $\beta_{\text{Ethnicity/S}} = 0$</td>
<td>$\beta = .08, p = \text{n.s.}$</td>
<td>1b not supported</td>
</tr>
<tr>
<td></td>
<td>H1: $\beta_{\text{Ethnicity/S}} &lt; 0$</td>
<td>$(M = 1.69, SD = .1.04), t(14) = 1.59, p = \text{n.s.}$</td>
<td></td>
</tr>
<tr>
<td>1c. Older age will negatively predict the level of stigma</td>
<td>H0: $\beta_{\text{Age/S}} = 0$</td>
<td>$\beta = -.13, p &lt; .05$</td>
<td>1c supported</td>
</tr>
<tr>
<td></td>
<td>H1: $\beta_{\text{Age/S}} &lt; 0$</td>
<td>$(M = .35.1, SD = 5.94), t(14) = -2.41, p &lt; .05$</td>
<td></td>
</tr>
<tr>
<td>1d. Higher levels of education will negatively predict the level of stigma</td>
<td>H0: $\beta_{\text{Education/S}} = 0$</td>
<td>$\beta = .031, p = \text{n.s.}$</td>
<td>1d not supported</td>
</tr>
<tr>
<td></td>
<td>H1: $\beta_{\text{Education/S}} &lt; 0$</td>
<td>$(M = 1.45, SD = .583), t(14) = .564, p = \text{n.s.}$</td>
<td></td>
</tr>
<tr>
<td>1e. Full-time employment will positively predict the level of stigma</td>
<td>H0: $\beta_{\text{Employment/S}} = 0$</td>
<td>$\beta = -.024, p = \text{n.s.}$</td>
<td>1e not supported</td>
</tr>
<tr>
<td></td>
<td>H1: $\beta_{\text{Employment/S}} &gt; 0$</td>
<td>$(M = 1.25, SD = .505), t(14) = -.475, p = \text{n.s.}$</td>
<td></td>
</tr>
<tr>
<td>1f. Being in a relationship will negatively predict the level of stigma</td>
<td>H0: $\beta_{\text{Relationship/S}} = 0$</td>
<td>$\beta = -0.73, p = \text{n.s.}$</td>
<td>1f not supported</td>
</tr>
<tr>
<td></td>
<td>H1: $\beta_{\text{Relationship/S}} &lt; 0$</td>
<td>$(M = .88, SD = .330), t(14) = -1.43, p = \text{n.s.}$</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3.7
Results of Hypotheses Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>H0</th>
<th>H1</th>
<th>β</th>
<th>p</th>
<th>p-Value</th>
<th>Sample Mean (M)</th>
<th>SD</th>
<th>t</th>
<th>p-Value</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1g. Higher rank at discharge will positively predict lower levels of stigma</td>
<td>$H_0: \beta_{\text{Rank at discharge}} = 0$</td>
<td>$H_1: \beta_{\text{Rank at discharge}} &lt; 0$</td>
<td>0.049</td>
<td>n.s.</td>
<td></td>
<td>2.41</td>
<td>1.13</td>
<td>0.927</td>
<td>n.s.</td>
<td>1g not supported</td>
</tr>
<tr>
<td>1h. Self-reported diagnosis of PTSD will positively predict the level of stigma</td>
<td>$H_0: \beta_{\text{PTSD}} = 0$</td>
<td>$H_1: \beta_{\text{PTSD}} &gt; 0$</td>
<td>0.041</td>
<td>n.s.</td>
<td></td>
<td>0.03</td>
<td>0.181</td>
<td>0.789</td>
<td>n.s.</td>
<td>1h not supported</td>
</tr>
<tr>
<td>1i. Self-reported diagnosis of depression will positively predict the level of stigma</td>
<td>$H_0: \beta_{\text{Depression}} = 0$</td>
<td>$H_1: \beta_{\text{Depression}} &gt; 0$</td>
<td>0.141</td>
<td>&lt;0.05</td>
<td></td>
<td>0.11</td>
<td>0.313</td>
<td>2.52</td>
<td>&lt;0.05</td>
<td>1i supported</td>
</tr>
<tr>
<td>1j. Self-reported diagnosis of anxiety will positively predict the level of stigma</td>
<td>$H_0: \beta_{\text{Anxiety}} = 0$</td>
<td>$H_1: \beta_{\text{Anxiety}} &gt; 0$</td>
<td>-0.10</td>
<td>n.s.</td>
<td></td>
<td>0.08</td>
<td>0.279</td>
<td>-0.183</td>
<td>n.s.</td>
<td>1j not supported</td>
</tr>
<tr>
<td>1k. Self-reported diagnosis of alcohol will positively predict the level of stigma</td>
<td>$H_0: \beta_{\text{Alcohol}} = 0$</td>
<td>$H_1: \beta_{\text{Alcohol}} &gt; 0$</td>
<td>-0.038</td>
<td>n.s.</td>
<td></td>
<td>0.09</td>
<td>0.283</td>
<td>-0.681</td>
<td>n.s.</td>
<td>1k not supported</td>
</tr>
<tr>
<td>1l. Self-reports of multiple diagnoses will positively predict the level of stigma</td>
<td>$H_0: \beta_{\text{Multiple diagnoses}} = 0$</td>
<td>$H_1: \beta_{\text{Multiple diagnoses}} &gt; 0$</td>
<td>-0.008</td>
<td>n.s.</td>
<td></td>
<td>0.02</td>
<td>0.149</td>
<td>-0.135</td>
<td>n.s.</td>
<td>1l not supported</td>
</tr>
<tr>
<td>1m. More positive education impact will negatively predict the level of stigma</td>
<td>$H_0: \beta_{\text{Education Impact}} = 0$</td>
<td>$H_1: \beta_{\text{Education Impact}} &lt; 0$</td>
<td>-0.224</td>
<td>&lt;0.01</td>
<td></td>
<td>2.05</td>
<td>0.467</td>
<td>-4.27</td>
<td>&lt;0.01</td>
<td>1m supported</td>
</tr>
</tbody>
</table>

Note: All analyses were conducted using a significance level of 0.05 unless otherwise indicated.
Table 3.7

Results of Hypotheses Testing

2a. Female gender will negatively predict the level of barriers to care

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>β</th>
<th>p Value</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: βGender/BC = 0</td>
<td>β = -.075</td>
<td>p = n.s.</td>
<td>(M = .27, SD = .445)</td>
<td></td>
<td></td>
<td></td>
<td>2a not supported</td>
</tr>
<tr>
<td>H1: βGender/BC &lt; 0</td>
<td>t (14) = -1.41</td>
<td>p = n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2b. Ethnicities other than White will positively predict lower levels of barriers to care

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>β</th>
<th>p Value</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: βEthnicity/BC = 0</td>
<td>β = .056</td>
<td>p = n.s.</td>
<td>(M = 1.69, SD = 1.05)</td>
<td></td>
<td></td>
<td></td>
<td>2b not supported</td>
</tr>
<tr>
<td>H1: βEthnicity/BC &lt; 0</td>
<td>t (14) = 1.04</td>
<td>p = n.s.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

2c. Older age will negatively predict the level of barriers to care

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>β</th>
<th>p Value</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: βAge/BC = 0</td>
<td>β = -.062</td>
<td>p = n.s.</td>
<td>(M = 35.1, SD = 5.94)</td>
<td></td>
<td></td>
<td></td>
<td>2c not supported</td>
</tr>
<tr>
<td>H1: βAge/BC &lt; 0</td>
<td>t (14) = -1.14</td>
<td>p = n.s.</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

2d. Higher levels of education will negatively predict the level of barriers to care

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>β</th>
<th>p Value</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: βEducation/BC = 0</td>
<td>β = .008</td>
<td>p = n.s.</td>
<td>(M = 1.45, SD = .583)</td>
<td></td>
<td></td>
<td></td>
<td>2d not supported</td>
</tr>
<tr>
<td>H1: βEducation/BC &lt; 0</td>
<td>t (14) = .139</td>
<td>p = n.s.</td>
<td></td>
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</tr>
</tbody>
</table>

2e. Full-time employment will positively predict the level of barriers to care

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>β</th>
<th>p Value</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: βEmployment/BC = 0</td>
<td>β = .249</td>
<td>p &lt; .01</td>
<td>(M = 1.25, SD = .505)</td>
<td></td>
<td></td>
<td></td>
<td>2e supported</td>
</tr>
<tr>
<td>H1: βEmployment/BC &gt; 0</td>
<td>t (14) = 4.72</td>
<td>p &lt; .01</td>
<td></td>
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</tr>
</tbody>
</table>

2f. Being in a relationship will negatively predict the level of barriers to care

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>β</th>
<th>p Value</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: βRelationship/BC = 0</td>
<td>β = -.011</td>
<td>p = n.s.</td>
<td>(M = .88, SD = .330)</td>
<td></td>
<td></td>
<td></td>
<td>2f not supported</td>
</tr>
<tr>
<td>H1: βRelationship/BC &lt; 0</td>
<td>t (14) = -.011</td>
<td>p = n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
### Table 3.7
*Results of Hypotheses Testing*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Test Results</th>
<th>Supported</th>
</tr>
</thead>
</table>
| **2g. Higher rank at discharge will positively predict lower levels of barriers to care**<br>H0: $\beta_{\text{Rank at discharge/BC}} = 0$
H1: $\beta_{\text{Rank at discharge/BC}} < 0$
| $\beta = -0.74$, $p = \text{n.s.}$<br>$(M = 2.41$, $SD = 1.13)$, $t(14) = -1.35$, $p = \text{n.s.}$ | 2g not supported |

| **2h. Self-reported diagnosis of PTSD will positively predict the level of barriers to care**<br>H0: $\beta_{\text{PTSD/BC}} = 0$
H1: $\beta_{\text{PTSD/BC}} > 0$
| $\beta = -0.078$, $p = \text{n.s.}$<br>$(M = 0.03$, $SD = 0.181)$, $t(14) = -1.46$, $p = \text{n.s.}$ | 2h not supported |

| **2i. Self-reported diagnosis of depression will positively predict the level of barriers to care**<br>H0: $\beta_{\text{Depression/BC}} = 0$
H1: $\beta_{\text{Depression/BC}} > 0$
| $\beta = -0.008$, $p = \text{n.s.}$<br>$(M = 0.11$, $SD = 0.313)$, $t(14) = -1.142$, $p = \text{n.s.}$ | 2i not supported |

| **2j. Self-reported diagnosis of anxiety will positively predict the level of barriers to care**<br>H0: $\beta_{\text{Anxiety/BC}} = 0$
H1: $\beta_{\text{Anxiety/BC}} > 0$
| $\beta = 0.011$, $p = \text{n.s.}$<br>$(M = 0.08$, $SD = 0.279)$, $t(14) = 0.211$, $p = \text{n.s.}$ | 2j not supported |

| **2k. Self-reported diagnosis of alcohol will positively predict the level of barriers to care**<br>H0: $\beta_{\text{Alcohol/BC}} = 0$
H1: $\beta_{\text{Alcohol/BC}} > 0$
| $\beta = -0.007$, $p = \text{n.s.}$<br>$(M = 0.09$, $SD = 2.83)$, $t(14) = -1.19$, $p = \text{n.s.}$ | 2k not supported |

| **2l. Self-reports of multiple diagnoses will positively predict the level of barriers to care**<br>H0: $\beta_{\text{Multiplediagnoses/BC}} = 0$
H1: $\beta_{\text{Multiplediagnoses/BC}} > 0$
| $\beta = 0.035$, $p = \text{n.s.}$<br>$(M = 0.02$, $SD = 0.149)$, $t(14) = 0.555$, $p = \text{n.s.}$ | 2l not supported |
Table 3.7
Results of Hypotheses Testing

2m. More positive education impact will negatively predict the level of barriers to care
H0: $\beta_{\text{EducationImpact/BC}} = 0$
H1: $\beta_{\text{EducationImpact/BC}} < 0$
$\beta = -.068, p = \text{n.s.}$
$(M = 2.05, SD = .467), t(14) = -1.25, p = \text{n.s.}$
2m not supported

3a. Higher total stigma scores will negatively predict the level of education impact
H0: $\beta_{\text{TotalStigma/EI}} = 0$
H1: $\beta_{\text{TotalStigma/EI}} < 0$
$\beta = -.264, p < .001$
$(M = 19.1, SD = 3.71), t(14) = -5.12, p < .001$
3a supported

3b. Higher total barriers to care scores will negatively predict the level of education impact
H0: $\beta_{\text{TotalBarriersToCare/EI}} = 0$
H1: $\beta_{\text{TotalBarriersToCare/EI}} < 0$
$\beta = -.058, p = \text{n.s.}$
$(M = 13.7, SD = 2.64), t(14) = -1.13, p = \text{n.s.}$
3b not supported

4a. Higher total stigma scores will negatively predict the level of likelihood access
H0: $\beta_{\text{TotalStigma/LA}} = 0$
H1: $\beta_{\text{TotalStigma/LA}} < 0$
$\beta = -.106, p < .05$
$(M = 19.1, SD = 3.71), t(14) = -1.97, p < .05$
4a supported

4b. Higher total barriers to care scores will negatively predict the level of likelihood access
H0: $\beta_{\text{TotalBarriersToCare/LA}} = 0$
H1: $\beta_{\text{TotalBarriersToCare/LA}} < 0$
$\beta = -.028, p = \text{n.s.}$
$(M = 13.7, SD = 2.64), t(14) = -.515, p = \text{n.s.}$
4b not supported

5. Education impact will negatively mediate the effects of stigma on likelihood access
H0: $(\beta_{\text{TotalStigma}})(\beta_{\text{EducationImpact}}) = b$
H1: $(\beta_{\text{TotalStigma}})(\beta_{\text{EducationImpact}}) \neq 0$
$\beta = -.018$
$t(352) = -1.25, p = .215$
5 supported
**Hypotheses 1.** Multiple regression was used to examine whether gender, ethnicity, age, education, employment, relationship, PTSD, depression, anxiety, alcohol, MultipleDiagnoses, and EducationImpact were statistically significant predictors of stigma (Table 3.8). The resulting regression model was statistically significant $F(14,347) = 4.306, p < .05$. Gender ($\beta = -.15$), age ($\beta = -.13$), depression ($\beta = .14$), and EducationImpact ($\beta = -.22$) were statistically significant predictors. Together, these variables accounted for 11% of the variance in stigma. Gender had a small significant, inverse relationship with stigma such that female respondents endorsed lower levels of stigma. Age had a small significant, inverse relationship with stigma such that older participants endorsed lower levels of stigma. Depression had a small significant, positive relationship with stigma such that participants with a self-reported diagnosis of depression endorsed higher levels of stigma. EducationImpact had a significant, inverse relationship with stigma such that participants who reported experiencing more positive impact of mental health education that was received while in the military endorsed lower levels of stigma. These findings indicate that hypotheses 1a, 1c, 1i, and 1m were supported for the relationship between the independent variables of gender, age, depression, and EducationImpact (respectively), and the dependent variable of TotalStigmaScore.

Findings related to the relationship between ethnicity, education, employment, relationship, RankatDischarge, PTSD, anxiety, alcohol, and MultipleDiagnoses, did not emerge as statistically significant predictors of stigma, which resulted in the failure to support hypotheses 1b, 1d, 1e, 1f, 1g, 1h, 1j, 1k, and 1l, respectively.
Table 3.8

Multiple Regression Predicting Levels Of Stigma (N=355)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>CI for b</th>
<th>Lower</th>
<th>Upper</th>
<th>β</th>
<th>r</th>
<th>sr^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-1.26</td>
<td>-2.1</td>
<td>-0.41</td>
<td>-0.15*</td>
<td>0.39</td>
<td>0.02</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>0.29</td>
<td>-0.07</td>
<td>0.65</td>
<td>0.08</td>
<td>0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>Education</td>
<td>0.16</td>
<td>-0.49</td>
<td>0.87</td>
<td>0.03</td>
<td>0.07</td>
<td>0</td>
</tr>
<tr>
<td>Employment</td>
<td>-0.18</td>
<td>-0.91</td>
<td>0.55</td>
<td>-0.02</td>
<td>0.10</td>
<td>0</td>
</tr>
<tr>
<td>Age</td>
<td>-0.08</td>
<td>-0.14</td>
<td>-0.02</td>
<td>-0.13*</td>
<td>-0.1</td>
<td>0.02</td>
</tr>
<tr>
<td>Rankatdischarge</td>
<td>0.16</td>
<td>-0.18</td>
<td>0.5</td>
<td>0.05</td>
<td>-0.12</td>
<td>0</td>
</tr>
<tr>
<td>Relationship</td>
<td>-0.82</td>
<td>-1.95</td>
<td>0.30</td>
<td>-0.07</td>
<td>0</td>
<td>0.01</td>
</tr>
<tr>
<td>PTSD</td>
<td>0.84</td>
<td>-1.25</td>
<td>2.93</td>
<td>0.04</td>
<td>-0.01</td>
<td>0</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-0.13</td>
<td>-1.5</td>
<td>1.24</td>
<td>-0.01</td>
<td>-0.02</td>
<td>0</td>
</tr>
<tr>
<td>Depression</td>
<td>1.66</td>
<td>0.36</td>
<td>2.97</td>
<td>0.14*</td>
<td>0.07</td>
<td>0.02</td>
</tr>
<tr>
<td>Alcohol</td>
<td>-0.49</td>
<td>-1.91</td>
<td>0.93</td>
<td>-0.04</td>
<td>0.04</td>
<td>0</td>
</tr>
<tr>
<td>MultipleDiagnoses</td>
<td>-0.21</td>
<td>-3.19</td>
<td>2.78</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0</td>
</tr>
<tr>
<td>EducationImpact</td>
<td>-1.78</td>
<td>-2.6</td>
<td>-0.96</td>
<td>-0.22**</td>
<td>0.04</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Note. Dependent variable: TotalStigmaScore
Note. *Correlation is significant at the 0.05 level (1-tailed).
Note. **Correlation is significant at the 0.01 level (1-tailed).
Note. Fit for model $R^2 = .152$, Adjusted $R^2 = .117$, $F(14, 347) = 4.306, p < .05$. The squared semi-
partial ($sr^2$) correlation given is the squared Part correlation from SPSS. The $r$ given is for the zero- 
order correlation from SPSS.

**Hypotheses 2.** Multiple regression was used to examine whether gender, ethnicity, age, education, employment, relationship, PTSD, depression, anxiety, alcohol, MultipleDiagnoses, and EducationImpact were statistically significant predictors of barriers to care (Table 3.9). The resulting regression model was statistically significant $F (14,347) = 2.55, p < .05$. Employment ($β = .25$) was a significant predictor of barriers to mental health care. This variable accounted for a total of approximately 2% of the variance in barriers to care. Employment had a small significant, positive relationship with barriers to care such that respondents who were employed endorsed higher levels of barriers to care. This finding indicates that hypothesis 2e was supported for the relationship between employment and barriers to care. The findings related to the
relationship between gender, ethnicity, age, education, relationship, RankatDischarge, PTSD, depression, anxiety, alcohol, MultipleDiagnoses, and EducationImpact did not emerge as statistically significant predictors of barriers to care, resulting in the failure to support hypotheses 2a, 2b, 2c, 2d, 2f, 2g, 2h, 2i, 2j, 2k, 2l, and 2m, respectively.

Table 3.9

Multiple Regression Predicting Levels of Barriers to Care (N=355)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>CI95 % for b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.44</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>0.14</td>
</tr>
<tr>
<td>Education</td>
<td>0.04</td>
</tr>
<tr>
<td>Employment</td>
<td>1.31</td>
</tr>
<tr>
<td>Age</td>
<td>-0.03</td>
</tr>
<tr>
<td>Rank at discharge</td>
<td>-0.17</td>
</tr>
<tr>
<td>Relationship</td>
<td>-0.09</td>
</tr>
<tr>
<td>PTSD</td>
<td>-1.13</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.11</td>
</tr>
<tr>
<td>Depression</td>
<td>-0.07</td>
</tr>
<tr>
<td>Alcohol</td>
<td>-0.06</td>
</tr>
<tr>
<td>MultipleDiagnosis</td>
<td>0.62</td>
</tr>
<tr>
<td>EducationImpact</td>
<td>-0.38</td>
</tr>
</tbody>
</table>

Note. Dependent Variable: TotalBarrierScore
**Correlation is significant at the 0.01 level (1-tailed).

Note. Fit for model $R^2 = .096$, Adjusted $R^2 = .06$, $F(14, 347) = 2.548$, $p < .05$. The squared semi-partial ($sr^2$) correlation given is the squared Part correlation from SPSS. The r given is for the zero-order correlation from SPSS.

Hypotheses 3. Multiple regression was used to examine whether TotalStigmaScore and TotalBarrierScore were statistically significant predictors of EducationImpact (Table 3.10). The resulting regression model was statistically significant $F(2,353) = 14.73$, $p < .001$. TotalStigmaScore ($\beta = -.26$) was a significant
predictor of EducationImpact, and accounted for 7% of the variance in EducationImpact. TotalStigmaScore had an inverse relationship with EducationImpact such that respondents with higher stigma scores endorsed more negative EducationImpact. This finding indicates that hypothesis 3a was supported for the relationship between TotalStigmaScore and EducationImpact. The relationship between Total Barrier Score and EducationImpact did not emerge as statistically significant, resulting in a failure to support hypothesis 3b.

**Hypotheses 4.** Multiple regression was used to examine whether TotalStigmaScore and Total Barrier Score were statistically significant predictors of LikelihoodAccess (Table 3.11). The resulting regression model was statistically significant $F (2,353) = 2.248, p < .05$. TotalStigmaScore ($\beta = -.11$) was a significant predictor of LikelihoodAccess, and accounted for approximately 1% of the variance in LikelihoodAccess. TotalStigmaScore had an inverse relationship with LikelihoodAccess such that respondents with higher stigma scores endorsed lower levels of LikelihoodAccess. This finding indicates that hypothesis 4a was supported for the relationship between TotalStigmaScore and LikelihoodAccess. The relationship between Total Barrier Score and LikelihoodAccess did not emerge as statistically significant, resulting in a failure to support hypothesis 4b.
Table 3.10

**Multiple Regression Predicting Education Impact (N=355)**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b</th>
<th>Lower</th>
<th>Upper</th>
<th>β</th>
<th>r</th>
<th>sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td>TotalStigmaScore</td>
<td>-0.03</td>
<td>-0.05</td>
<td>-0.02</td>
<td>-0.26*</td>
<td>-0.27</td>
<td>0.07</td>
</tr>
<tr>
<td>TotalBarrierScore</td>
<td>-0.01</td>
<td>-0.03</td>
<td>0.01</td>
<td>-0.06</td>
<td>-0.09</td>
<td>0.01</td>
</tr>
</tbody>
</table>

*Note.* Dependent Variable: EducationImpact

*Note.* *Correlation is significant at the 0.001 level (1-tailed).

*Note.* Fit for model $R^2 = .077$, Adjusted $R^2 = .072$, $F(2, 353) = 14.73$, $p < .001$. The squared semi-partial ($sr^2$) correlation given is the squared Part correlation from SPSS. The $r$ given is for the zero-order correlation from SPSS.

Table 3.11

**Multiple Regression Predicting Likelihood Access (N=355)**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b</th>
<th>Lower</th>
<th>Upper</th>
<th>β</th>
<th>r</th>
<th>sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td>TotalStigmaScore</td>
<td>-0.03</td>
<td>-0.06</td>
<td>0.00</td>
<td>-0.11*</td>
<td>-0.11</td>
<td>0.01</td>
</tr>
<tr>
<td>TotalBarrierScore</td>
<td>-0.01</td>
<td>-0.05</td>
<td>0.03</td>
<td>-0.03</td>
<td>-0.04</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*Note.* Dependent Variable: LikelihoodAccess

*Note.* *Correlation is significant at the 0.05 level (1-tailed).

*Note.* Fit for model $R^2 = .013$, Adjusted $R^2 = .007$, $F(2, 353) = 2.248$, $p < .05$. The squared semi-partial ($sr^2$) correlation given is the squared Part correlation from SPSS. The $r$ given is for the zero-order correlation from SPSS.

**Hypothesis 5.** Mediation analysis was conducted using the theoretical framework of Baron and Kenny (1986), and was analyzed in SPSS with PROCESS. Mediation analysis was used to investigate the hypothesis that EducationImpact mediates the effect of TotalStigmaScore on LikelihoodAccess. Results (Table 3.12) indicated that TotalStigmaScore was a significant predictor of EducationImpact, $b = -.029$, $t(353) = -2.058$, $p < .05$, and that EducationImpact was a significant predictor of LikelihoodAccess, $b = .313$, $t(352) = 2.758$, $p < .01$. These results support the mediational hypothesis. TotalStigmaScore was no longer a significant predictor of
LikelihoodAccess after controlling for the mediator, EducationImpact, $b = -.018$, $t(352) = -1.25$, $p = .21$, consistent with full mediation. Approximately 3% of the variance in LikelihoodAccess was accounted for by the predictors ($R^2 = .03$). The indirect effect was tested using a bootstrap estimation approach with 1000 samples (Shrout & Bolger, 2002). These results indicated the indirect coefficient was significant, $b = -.01$, $SE = .005$, 95% CI = -.022, -.003. In the presence of the mediation variable impact of education, total stigma scores was no longer associated with the likelihood veterans would access care post discharge.

Table 3.12

<table>
<thead>
<tr>
<th>Effect</th>
<th>$b$</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>-0.03</td>
<td>-0.06</td>
<td>-0.01</td>
</tr>
<tr>
<td>Direct</td>
<td>-0.02</td>
<td>-0.05</td>
<td>-0.01</td>
</tr>
<tr>
<td>Indirect (mediation)</td>
<td>-0.01</td>
<td>-0.02</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

Figure 3 depicts the mediation effects of EducationImpact on the relationship between TotalStigmaScore and LikelihoodAccess.
In summary, the findings from the current study provided support for hypotheses 1a, 1c, 1i, and 1m; hypothesis 2e; hypothesis 3a; hypothesis 4a; and hypothesis 5. A discussion about the implications and applicability of the findings is provided in the following chapter. Additionally, limitations and future directions are discussed.
Chapter Four: Discussion

The purpose of the current study was to examine the relationship between a set of independent variables and the dependent variables of stigma and barriers to mental health care in a sample of veterans who served in the military from 2001 to the present, and who were no longer serving. In addition, this study explored the relationship between the independent variables of stigma and barriers to care and the dependent variables of the impact of education and the likelihood of accessing care. Lastly, this study examined whether the education received while in the military about mental health illness and treatment mediated the relationship between stigma and the likelihood a veteran would access mental health care if they believed it was needed.

Prior to reviewing the results, it is important to note that the variable EducationImpact was used as an independent variable in the first two hypotheses and as a dependent variable in hypothesis three. This decision was made after careful consideration, and was due to several factors. First, measuring the impact of education about mental illness and treatment given to veterans while still in service is unique to this study, as is the variable. The existing body of relevant literature to this study examines several independent variables for their relationship with dependent variables of stigma and barriers to care. Therefore, I was interested in examining the new variable of EducationImpact as a predictor of the dependent variables of stigma and barriers to care as well. However, I was also interested in whether or not stigma and barriers to care would predict EducationImpact. Of particular interest was whether or not the education that was given was impactful enough to reduce the pervasive stigma regarding mental
health concerns in the military. As such, the variable EducationImpact was used as both an independent and a dependent variable in this study.

It was expected that the independent variables of gender, ethnicity, age, RankatDischarge, education, employment, relationship, PTSD, anxiety, depression, alcohol, MultipleDiagnoses, and EducationImpact would have a significant relationship with the dependent study variables of TotalStigmaScore and TotalBarrierScore. In addition, it was expected that the independent variables of TotalStigmaScore and TotalBarrierScore would have a significant relationship with the dependent variables of EducationImpact and LikelihoodAccess. Lastly, it was expected that the relationship between the independent variable of TotalStigmaScore and the dependent variable of LikelihoodAccess would be negatively mediated by the independent variable of EducationImpact.

The findings of this study provided partial support for the overall models and support for some of these hypotheses. In particular, a direct relationship was found between the independent variables of gender, age, depression, and the impact of education and the dependent variable of stigma. A direct relationship was also found between the independent variable of employment, and the dependent variable of barriers to care. In addition, a direct relationship was found between the independent variable of stigma and the dependent variables of the impact of education and the likelihood of accessing care. Lastly, results indicated that stigma was no longer a significant predictor of lower levels of the likelihood of accessing care when the mediator variable of the impact of education was added to the regression.
**Stigma in the Current Study**

For the purposes of discussion in the current study, the construct of stigma includes both internalized self-stigma and internalized structural stigma as defined by Overton and Medina (2008). Therefore, when concepts such as reducing the levels of stigma, or having an impact on the levels of perceived stigmas are mentioned in this discussion, these both include and infer reducing internalized stigma (an internal evaluation process in which persons evaluate themselves, and feelings of hate, doubt, and shame that emerge as a result of these evaluations; Lendhardt, 2004; Overton & Medina, 2008). Internalized stigmas ultimately impact self-efficacy (Lendhardt, 2004). Items on the PSBCPP that reflect internalized stigma include: It would be too embarrassing, I would be seen as weak, It would harm my career, and My peers would blame me for the problem.

**Implications of Accessing Care**

The military has policies and procedures – in relation to mental illness and treatment – that restrict the abilities of personnel in their service, and that can restrict personnel from continuing to serve. These restrictions may directly effect a service member’s level of experienced stigma while still in service. For example, if leadership is aware that a service member is engaged in counseling for depression, and is taking medication as part of treatment, the particular type of medication may restrict the service member from performing particular functions of their military occupation (e.g., operating a military vehicle, lifting certain amounts of weight, having the energy necessary to work long shifts, and experiencing adverse interactions between such medication and the food that is provided). If a service member is restricted in their capacity to serve for too great
a time period, then his value to the organization could be questioned as he may not be deployable. The intent of the U.S. government is to have a military force that is both qualified to, and ready to, deploy. Certain medications, as well as the presence of certain mental health (and medical) diagnoses, are automatic obstacles to a person’s deployment. Thus, military policies and procedures such as these may directly effect a person’s level of experienced stigma. Though these consequences are not the same for veterans post discharge from service, there are some employment opportunities that may be out of reach for a veteran if there are restrictions related to secret or top secret clearances and a preexisting diagnosis of mental illness. Therefore, internal stigmas related to mental health treatment may persist even after veterans have left the service.

**Barriers to Care in the Current Study**

For the purposes of discussion in the current study, the construct of barriers to care refers to external barriers to care, as measured by the PSBCPP. Therefore, when the concept of reducing the levels of barriers to care is mentioned, this is referring to reducing the perceived levels of external barriers to care. Items on the PSBCPP that reflect external barriers to care include: I don’t know where to get help, and Mental health care costs too much money.

**Hypotheses 1 and 2 Findings**

Hypotheses 1 and 2 predicted significant relationships between a set of independent variables and the dependent variables that measured total stigma scores and total barriers to care scores. The findings from multiple regression analyses provided partial support for the models, and partial support for the predicted significant relationships.
**Hypotheses 1 findings.** The existing body of literature pertaining to current or past military service members suggests that male gender, White ethnicity, younger age, lower rank at discharge, lower levels of education, higher levels of employment, and not being in a relationship are all significant predictors of increased levels of stigma (Britt et al., 2008; Clement et al., 2012; Crawford & Brown, 2002; Hoge et al., 2004; Kessler et al., 1995; Lenhardt, 2004; Overton & Medina, 2008; Simmons, 2001).

**Gender and age findings.** Results of the current study parallel these previous findings with regards to gender and age such that male gender and younger age were found to be significant predictors of increased levels of internal stigma. This result indicates that veterans who are younger, and veterans who identify as male reported higher levels of stigma. As such, it can be inferred that younger veterans and male veterans experience more perceived internal stigmas than do older veterans and female veterans (no participants endorsed being transgendered, and as such, results from the current study include data from veterans who identified as female or male).

This finding supports the need for future research to explore which perceived internal stigmas are experienced by younger veterans, and by male veterans. By identifying the particular types of stigma these veterans experience, targeted programs intended to reduce these stigmas can be developed. However, programs such as these are not enough to perpetuate an overarching change leading towards the reduction of internal stigmas experienced by veterans. Systemic change is necessary within all branches of the military; with supportive participation from all ranks; and with guidance, regulation, backing, and provision from all levels of leadership; in order to institute meaningful
change that reduces the level of stigma about mental illness and treatment that veterans experience.

Predictor variables such as gender and age were reported to be indicators of stigma not only in stigma theories (Crawford & Brown, 2002), but also in stigma measures from other researchers (Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011). The findings from this study supported findings from Britt et al. (2008), Hoge et al. (2004), and Kim et al. (2011) in that female gender and older age were statistically significant predictors of lower levels of stigma. As such, it can be inferred that veterans who are older, and veterans who identify as female, experience lower levels of perceived external and internal stigmas than do younger veterans and male veterans. Therefore, future research should explore what factors contribute to female veterans and older veterans experiencing lower levels of stigma. Is there something unique to identifying as female, or something unique to being older that contributes to those veterans experiencing lower levels of stigma? For example, are there aspects of gender [such as: roles, identities, norms, cultural constructions, societal constructions, social locations, and intersecting identities; (Worell & Remer, 2003)] that contribute to female veterans experiencing lower levels of perceived internal stigma? Identification of contributing factors that reduce stigma about mental illness and treatment could lead to the institution of protective factors against experiencing higher levels of stigma.

**Depression findings.** The findings of this study did not support research results from Britt et al. (2008), Hoge et al. (2008), and Kim et al. (2011) in that PTSD, anxiety, alcohol, and having multiple mental health diagnoses were not found to be significant predictors of higher levels of stigma. In several studies, a diagnosis of depression was
reported to be a predictor of increased levels of stigma (Greene-Shortridge, Britt, & Castro, 2007; Gary, 2005; Hoge et al., 2004; Ojeda & McGuire, 2006; Segal, Coolidge, Mincic, & O’Riley, 2005; Wynaden et al., 2005). Findings from this study supported these previously reported results such that depression was found to be a significant predictor of higher levels of stigma. This result indicates that veterans who reported ever being diagnosed with depression after discharge from the military reported higher levels of stigma. It can be inferred from this finding that veterans who have a diagnosis of depression, and who need therapy as a result, may not be reaching out for help due to the stigmas they perceive and experience. Veterans who report having a diagnosis of depression may already be experiencing internalized stigma of having a mental illness. As such, veterans may not report symptoms of depression. Screening for depression in veterans who present for medical appointments could help to identify the presence of depression. Ideally, medical providers would work in cohesive and comprehensive treatment teams, and as a result, they could refer veterans with positive screens for mental health treatment. In addition, clinicians should screen for stigma in veterans who present with depression. As a result, practitioners and veterans can work together in therapy to address screening results with the intent of reducing identified stigmas. The relationship between the presence of depression and the levels of internal stigmas that veterans experience should be a continued focus of future research.

*Education Impact findings.* The last independent variable examined for its relationship with the dependent variable stigma was a variable that, to my knowledge, has not been explored in previous studies. This variable assessed the impact of the education received while in the military on the likelihood of accessing care post discharge.
(EducationImpact). It was predicted that this independent variable would have a significant negative relationship with the dependent variable stigma. Findings provided support for this hypothesis such that more positive endorsements of education impact significantly negatively predicted higher levels of stigma.

The significant finding indicates that the more positively impactful that veterans perceived the education they received, the less internalized stigma they reported. Therefore, lasting relationships existed between the impact of education that active service members received and the veteran’s level of stigma years later. While this study’s design does not allow causation to be inferred, these findings suggest that perceiving a positive impact of the education received may have the desired effect of reducing internalized stigma. As such, future research should continue to explore what perceived impact current military mental health education has on stigma. What constitutes meaningful or impactful education? Who is disseminating the information? Is it intended as part of a prevention program, an awareness program, or a retention program? What is the content of the current educational briefings surrounding mental illness and treatment in the military? How does this education impact perceived levels of internal stigma? All of these are potential areas for future exploration.

**Hypotheses 2 findings.** The existing body of literature pertaining to current or past military service members suggests that male gender, White ethnicity, younger age, lower rank at discharge, lower levels of education, higher levels of employment, and not being in a relationship are significant predictors of increased levels of barriers to care (Britt et al., 2008; Clement et al., 2012; Crawford & Brown, 2002; Hoge et al., 2004; Kessler et al., 1995; Lenhardt, 2004; Overton & Medina, 2008; Simmons, 2001).
**Employment findings.** Similar to previous findings, being employed was found to be a significant predictor of increased levels of barriers to care. This result indicates that veterans who were employed reported experiencing more perceived barriers to care for mental health treatment. Therefore, actually being employed makes it more difficult for veterans to get mental health treatment. If clinicians offered flexible hours outside of the normal work day to accommodate varying work schedules, and if clinicians provided referrals for services in geographic areas that might be more convenient for the veteran, veterans’ perceived external barriers to care may be reduced. Periodically screening for any barriers to care with veteran clients in therapy will allow the clinician and veteran a chance to process, and mitigate, barriers to care that may arise.

**Remaining hypotheses 2 findings.** The findings of this study did not support research results from Britt et al. (2008), Hoge et al. (2008), and Kim et al. (2011) in that PTSD, anxiety, alcohol, depression, and having multiple mental health diagnoses were not found to be significant predictors of higher levels of barriers to care.

The last independent variable examined for its relationship with the dependent variable barriers to care was a variable that again, to my knowledge, has not been explored in previous studies. It was predicted that the independent variable of the impact of education would have a significant negative relationship with the dependent variable barriers to care. The findings that emerged did not result in the expected statistically significant relationships between these variables.

In summary, findings from this study suggest that external barriers to care does not appear to have a relationship with the other variables except for employment. The failure to find significant predictors of barriers to care may be due to measurement
problems associated with the barriers to care subscale. These are discussed in a later section of this report.

**Possible explanations for differences in findings.** Several considerations could be offered for the failure of the expected relationships between all independent and dependent variables in hypotheses 1 and 2 to emerge from this study. One is that the demographics of the sample from the current study differed from the sample demographics of previously reviewed studies. For example, the current study had a higher percentage of respondents who were male, African American, ages 30-39, and who had a Bachelor’s degree. In addition, the majority of previously reviewed studies were conducted using an active duty, reserve, or Guard military sample with personnel who are still serving. Research is sufficiently lacking with regards to veterans who are no longer serving. Further, many of the studies in the reviewed body of literature use samples of military members who served in eras other than OIF-OEF-OND. If service members from these three eras were included in previously reviewed studies, they were predominantly still in service. The current study was conducted using a population of veterans who served from 2001 to the present, and who were no longer serving. The findings of the current study suggest that veterans of the OIF-OEF-OND eras have different variables that influence their internalized stigma and barriers to care while also reflecting some similar patterns to active service members. Therefore, conducting research on OIF-OEF-OND veterans, and conducting research with veterans from these eras who are no longer serving, are both important additions to the existing literature.

A second consideration is that the instrument used to measure the construct stigma and the construct barriers to care was different across studies. Though the
PSBCPP was used in this, and several other reviewed studies, instruments such as the BACE, the Internalized Stigma of Mental Illness (Ritsher, Otilingam, & Grajales, 2003), and the Perceived Need for Care Questionnaire (Meadows et al., 2000) were also used in other studies. When comparing these measures, two consistent differences were found. One was that measures other than the PSBCPP included a wider range of questions assessing for barriers to care. A second was that questions assessing for stigma were present throughout the other surveys, however, the construct of stigma may have fallen under the umbrella of barriers to care, rather than being a separately measured construct. A final consideration is that the instrument used in this study may not have been a valid measure of the variables of barriers to care, meaning that the items on the barriers to care subscale may not have measured the construct of barriers to care as it solely pertains to veterans, as the instrument used in the current study was normed on both veterans and current service members. This consideration is examined more closely in the section below titled “Perceived Stigma and Barriers to Care for Psychological Problems Survey.”

A possible explanation of the differences in the findings from the current study versus previously reported results (with regards to the relationship between the reported presence of mental health diagnoses and stigma and barriers to care) is that in previously reviewed studies, participants (whether actively serving, or discharged from service) were given screening measures for the presence of PTSD, anxiety, alcohol use disorders, and depression. In the current study, however, participants were asked to report whether or not they were ever diagnosed with any, or multiple, of these diagnoses post discharge from the military. As such, in the current study, these variables were assessed using questions that required a self-reported “yes” or “no” answer, versus being assessed using
screening measures for these disorders. Though the data were collected anonymously, with no identifying information that could link the identity of a participant to one’s individual answers, the reported answers were still reliant on the participant being truthful. In addition, veterans could have had a lapse in memory, or could have been experiencing memory problems, such that they forgot they had a diagnosis. Without the presence of screening measures for mental illness in the current study, there was not a supplemental means of confirming participant self-reports of diagnoses of mental illness. Therefore, the differences in the ways of assessing for the diagnoses of mental illnesses in the current study, versus the ways of assessing for the same diagnoses in previously reviewed studies, could account for some of the discrepancies in expected outcomes and reported outcomes.

**Hypotheses 3 and 4 Findings**

Hypotheses 3 and 4 hypothesized significant relationships between independent variables measuring total stigma and total barriers to care scores and dependent variables of the impact of mental health education while in service and the likelihood of accessing mental health care. Findings from regression analyses provided partial support for the models, and partial support for the hypothesized significant relationships.

**Hypotheses 3 findings.** In the third regression, the impact of mental health and treatment education received while in the military (EducationImpact) was used as a dependent variable, with total stigma scores (TotalStigmaScore) and total barrier scores (TotalBarrierScore) used as independent variables. It was found that higher total stigma scores significantly negatively predicted the reported positive impact of education, and that barriers to care did not have significant relationship with the impact of education.
The significant finding is unique to this study, and as such, it is also an important addition to the literature. This result indicates that veterans who reported experiencing higher levels of internal stigma believed the education they received while in the military was negatively impactful. It can be inferred from these findings that the perpetuation of pervasive systemic and cultural stigma surrounding mental illness and treatment in the military may be a contributing factor to the education being perceived as positively or negatively impactful, thereby not changing – or reducing – the likelihood those service members would access mental health care post discharge from service. Therefore, if targeted programs designed to reduce systemic and cultural stigma in the military about mental illness and treatment were offered to current service members (more than once a year in annual briefings), then veterans may report lower levels of perceived stigma, and may report a more positive impact of education. Internal stigma appears to influence how veterans view the impact of the mental health related education that they receive while in the military. Further, this finding indicates that military leaders need to fully explore and understand the multitude of factors that cause and perpetuate stigma related to mental health diagnoses and treatment, and actively seek to reduce these stigmas, as failure to do so may result in the education that is disseminated being an ineffective method of reducing stigma.

**Hypotheses 4 findings.** When the likelihood of accessing care (LikelihoodAccess) was used as a dependent variable in the fourth regression, with total stigma scores (TotalStigmaScore) and total barrier scores (TotalBarrierScore) as independent variables, it was found that higher total stigma scores negatively predicted the level of the likelihood of accessing mental health care. This finding is unique to this
study, and as such, this significant finding is also an important addition to the literature. This finding indicates that veterans who perceived higher levels of internalized stigma were less likely to access mental health care services if they believed it was needed. Again, this finding highlights the necessity of military leaders actively working to reduce the stigma related to mental illness and treatment, as failure to do so may continue to perpetuate the deficiencies with regards to the likelihood that veterans would access mental health care if they believed it was needed. In addition, military leaders and future researchers would benefit from exploring what actions could be taken to reduce stigma for current service members, and what actions could be taken to improve the likelihood of accessing mental health care for veterans post discharge. Future research should concentrate on a veteran population from all branches who are no longer serving, and should explore factors that contribute to veterans accessing mental health care if they believed it was needed.

As barriers to care did not emerge as a statistically significant predictor of the impact of education received while in the military, or of the likelihood a veteran would access mental health care post discharge if they believed it was needed, future research should also examine what veterans from all branches perceive as barriers to accessing mental health care. Future research should also explore which barriers to accessing mental health care can be targeted for change in order to improve the likelihood a veteran would access mental health care if they believed it was needed.

**Hypothesis 5 Findings**

In the last regression, a mediation analysis using PROCESS, the relationship between stigma (TotalStigmaScore) and the likelihood of a veteran accessing mental health care services if they believed it was needed.
health if the participant believed it was needed (LikelihoodAccess), was significantly negatively mediated by veterans’ perception of the education received about mental health diagnoses and treatment while in the military (EducationImpact). This means that the perceived positive impact of the education received changed the relationship between reported levels of perceived internal stigma, and reports of the likelihood veterans would access mental health care if they believed it was needed. Results from this mediation analysis indicated a total mediation. As such, what was a significant negative relationship between reported levels of experienced internal stigma by veterans and the likelihood those veterans would access care if it was needed, was not just reduced, it was eliminated through the addition of positively impactful education, thereby increasing the likelihood a veteran would access care if they believed it was needed. This result also means that the strength of the relationship between the levels of perceived internal stigma and the reported likelihood of accessing mental health care differs depending on the perceived positive impact of the education received. In addition, findings from this mediation analysis indicate that veterans’ perception of the positive impact of mental health education does significantly predict the likelihood of accessing mental health care as veterans. As such, the effects of stigma appear to last beyond those in service affecting veterans accessing mental health care.

Due to several reasons, findings from this mediation analysis are potentially the most important and relevant outcome of this study. First, this finding supports the notion that the education received by current service members has a bearing on whether or not those service members would access care post discharge if they believed it was needed. Second, this finding supports previous outcomes from this study in highlighting the
importance of reducing stigma. Third, this finding indicates that one mechanism for reducing stigma could be the education given to veterans while they are in service. Therefore, this outcome supports the notion that by administering impactful education, it is possible to increase the likelihood a veteran would access care, thereby reducing the levels of stigma for that veteran.

**Suggestions for improving the impact of education.** As previously mentioned in chapter 1 of this study, it is my experience as a current service member in the Army National Guard that education relating to mental illness, symptoms, and treatment is given once a year, by personnel of varying ranks who are not of a medical military occupation. The majority of the suggestions in this section are a direct result of my observations over nine years of service. The impact of this type of education could be improved through several changes. First, briefs relating to mental illness and treatment could be offered more than once a year versus in a singular event. Several briefings have the potential to more effectively impact internalized stigma. Second, mental health briefs should be separated from all other annual briefs, and should be given at a separate time from annual briefs. In doing so, the audience may be more attentive to the content of the brief as they will not be inundated with a succession of required information dissemination. Third, these briefs should be engineered in such a way that they promote discussion and inquiry from the audience. Fourth, briefs related to mental health should be given by a senior ranking enlisted individual (E7-E9) or by a senior officer (O3 and above). This will help to highlight the importance of the topic, and will aid in the audience being attentive and responsive. Fifth, these briefs should be given by personnel who perform a medically related function in the military – preferably a provider (i.e.,
physician’s assistant, doctor, nurse, psychologist, social worker). This will help to facilitate a discussion with the audience from a person who has subject matter expertise, and who can answer difficult or poignant questions appropriately using their medical background. Sixth, these briefs should be structured in a way that they are revisited and disseminated multiple times throughout the year, quarterly at the least. Seventh, as a protective mechanism against stigma and barriers to care, there should be a safe and confidential means of inquiring about mental health care separate from approaching unit leadership. Such means might include designating a member within the unit as the mental health liaison, or highlighting medical personnel within the unit. Finally, there should be a coalition between the chaplain and medical/mental health personnel such that service members are referred to both types of personnel instead of singularly being referred to the chaplain.

Perceived Stigma and Barriers to Care for Psychological Problems Survey

After examining measures of stigma and barriers to care for veterans accessing mental health treatment, the Perceived Stigma and Barriers to Care for Psychological Problems survey (PSBCPP; Britt et al., 2008) - an 11-item instrument in which six items are designed to assess perceived internal stigma and five items are designed to assess external barriers to care - was chosen for use in this study. This measure was normed using military personnel that were both currently and formerly serving. The PSBCPP was found to be the most commonly used measure of stigma and barriers to mental health care with a military population in the studies reviewed for the current report. The authors of the PSBCPP reported that the measure demonstrated good internal consistency (Cronbach’s alpha = .91 for the stigma subscale, and Cronbach’s alpha = .74 for the
barriers to care subscale). The authors also reported that the measure appeared to be a valid measure of stigma and barriers to care with a sample of active service members and veterans (Britt et al., 2008). The measure of reliability for the barriers to care subscale ($\alpha=.64$) was subpar in this study, but was close enough to the level of accepted reliability ($\alpha=.70$) that I chose to continue with the analyses. Manipulation of Cronbach’s alpha by removing or adding items to the barriers to care subscale could have improved the subscale’s internal consistency, but would have changed it such that former findings about its validity might not apply. In addition, it is possible that the stigma subscale was measuring two factors (internalized self-stigma and internalized structural stigma). As such, reliability concerns may have been due to within factor differences.

It is plausible that there were instrumentation problems with my measure of the dependent variable barriers to care such that the measure chosen was not reliable enough to detect true effects. Though other researchers (Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011) have used the same measure of stigma and barriers to care with military populations, in this study, analyses of the subscales did not produce the same outcome of reliability as in previous studies. It is postulated that these differences in reliability were not due to sample size, as the current study had a sample size that was appropriate in number to utilize multiple regression analyses (Mertler & Vannatta, 2005). It is also plausible that the understanding of how the independent variables relate to the dependent variable of barriers to care (measured by the items: don’t know where to get help, do not have transportation, difficulty scheduling an appointment, difficulty getting time off, and mental health treatment costs too much) in a veteran population may need to be reexamined.
In comparison to the PSBCPP which measures more external barriers to care, different measures of barriers to care may have addressed a wider breadth of barriers. For example, the BACE, developed by Clement et al. (2012), included items such as: Wanting to solve the problem on my own; Thinking the problem would get better by itself; Preferring to get alternative forms of care (e.g. traditional / religious healing or alternative / complementary therapies); Thinking that professional care probably would not help; Dislike of talking about my feelings, emotions or thoughts; Not wanting a mental health problem to be on my medical records; Concern that I may lose custody of my children; and Having no one who could help me get professional care. These items were not assessed in the current study. No instruments reviewed as measures for stigma and barriers to care for the purposes of the current study were normed solely on a veteran population. As such, it becomes evident that the development of an instrument designed to measure these constructs in a veteran population is necessary.

**Implications**

The findings from this study have implications for practitioners who work with veterans, as well as implications for improving the education about mental health care which is received in the military. Findings from this study indicate the need for continued research that studies just a veteran population versus veterans and active service members. Findings from the current study support previous reports that younger males will endorse higher levels of stigma (Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011; Pietrzak et al., 2009). Therefore, when working with a younger male veteran, results indicate that assessment of stigma may need to be a careful consideration. Findings from this study support a relationship between diagnoses of depression and
increased levels of stigma, whereas findings from other studies support increased stigma and barriers to care with the presence of other mental health diagnoses as well such as: PTSD, anxiety, alcohol use problems, or multiple diagnoses (Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011; Pietrzak et al., 2009). Therefore, future research should further explore the relationship between diagnoses of, and self-reports of, mental illness and their relationship to stigma and barriers to care in a veteran population. The implication from the current study findings, as well as from previously reviewed study findings, is that the veterans who need mental health treatment the most are not accessing the care. One way mental health practitioners could mitigate this is to screen for the presence of any, or all, of these diagnoses (if not already being addressed in treatment) at several times during the course of treatment. Another way to mitigate this would be partnering with other types of health practitioners – medical, spiritual, social work, alternative care – and offering screenings for mental health disorders. Through these partnerships, persons who screened positively for mental health disorders would then be referred to mental health practitioners. Building treatment teams with other types of health practitioners may be a protective factor for veterans accessing mental health treatment.

It was expected that findings from the current study would provide more support for hypotheses listed under hypotheses 2 (all of which had barriers to care as the dependent variable). Results did indicate that being employed was a predictor of higher levels of barriers to care. Therefore, regularly checking in with veterans regarding their work schedule, providing alternative hours outside of a normal work day for treatment, and being flexible in scheduling may be helpful.
It is clear that barriers to accessing mental health care exist based on the reviewed literature; however, the barriers assessed in the current study may not be mitigating factors in veterans accessing care. Using differently worded items to assess for predictor variables of barriers to care, or using different measures of barriers to care for veterans, may have yielded different results. Future research would also benefit from exploring the relationship between the diagnosis of a mental illness and barriers to care by using a different instrument, or by using different instruments.

Additional implications include practitioners being cognizant of the idea that if a veteran endorses a mental illness, they may have higher levels of perceived stigma. Therefore, clinicians need to assess for perceived levels of stigma, measured at several time intervals, when working with veteran clients. The findings of the current study also challenge customary assumptions, and thus, give cause for practitioners to pause and examine the person – not the construct – in front of them. Veteran issues are complex, fluid, and enigmatic. Each veteran may respond to the same situation differently. As such, practitioners should be educated about new developments in the field, and should be wary of the tendency to categorize persons with whom they treat.

Last, but certainly not least, are implications regarding the education veterans receive about mental illness and treatment while still in the military. Future research into the construct of education impact and its relationship with stigma, barriers to care, and the likelihood of accessing mental health care, is warranted. Specifically, future research would benefit by exploring the content of education disseminated, who administers this education, directives given to personnel for follow up if they believe they need mental
health care, and the impact of the education received on the likelihood of accessing mental health care.

In my experience as a service member, the education about mental health diagnoses and treatment is given through annual briefings, is standardized within the National Guard, and is intended to be part of a prevention program. Future research would benefit from exploring the similarities and differences between branches in relation to mental health care education, briefings, and information offered to service members. Do all branches of service use DoD approved briefs which are standardized to fit all branches? Do the separate branches have individualized and specific briefs related to mental health that reflect the needs and composition of the branch? Do these briefs, in some way, reflect or contradict the branch’s code of ethics and operation (such as the Soldier’s Creed for the Army)? Do these briefs aim to reduce stigma and barriers to care while increasing the likelihood of accessing care? Do these briefs have an impact on veterans when they are no longer serving? All of these are relevant questions for future researchers.

Pervasive stigma relating to mental health diagnoses and treatment across the military could be mitigated by a “call to arms” so to say for senior leadership in the military. Top-down dissemination of resources, information, and supportive briefings relating to mental health indicators and treatment to service members could expand expressed interest by veterans to access mental health care. In addition, openly discussing the ramifications of accessing mental health care on a career in the military would help to mitigate service member concerns about confidentiality, effects on secret/top secret clearances, and the potential for discharge if a mental illness is present.
A more open, aware, and heightened sense of addressing mental health issues by senior leadership could eventually begin a process of stigma and barriers to care reduction, and would aid in relieving internalized stigma experienced by service members and veterans that leads to feelings of shame and weakness by those needing treatment.

**Limitations of the Current Study**

One limitation of the current study was generalizability. As this study was conducted with members who voluntarily responded through online survey methods, the response rate from states, regions, and branches of service may not be generalizable to the entire veteran population as a whole. Another limitation was that all of the measures used in this study were self-report measures. A third limitation was that several independent and dependent variables were measured using one item questions, and as such, reliability analysis becomes difficult. Though it was made clear in the cover letter that service members who were currently serving would be excluded, a fourth limitation was that the only way to measure the actuality of this would have been through a question on an informed consent which asked participants to check a box stating that they verify that they have formerly served, and are not currently serving. As there was no informed consent, a fourth limitation is that I had to trust that respondents carefully read the cover letter, and were honest when choosing to participate in the study based on being within the inclusionary criteria.

Another limitation was the use of one item measures for the variables of Likelihood Access and Education Impact. Though the use of one item measures has the advantage of adding brevity to the survey, when these items are used as dependent variables, questions remain about their reliability and construct validity. As previously
discussed, choosing another instrument (such as the BACE) may have yielded outcomes that demonstrated different relationships between the dependent and independent variables. Therefore, another limitation to this study was the conceptualization and operationalization of the variable of barriers to care. Lastly, as surveys were administered only once, cause and effect was not verifiable.

**Strengths of the Current Study**

The current study had several strengths. This study sought to explore data from a sample of veterans, and not from a mixed population of veterans and active service members. As such, this study provides a unique contribution to the literature. In addition, the current study was conducted with veterans from the OIF-OEF-OND service eras. Existing data is lacking in relation to veterans from these service eras, and as such, this study provides another distinctive contribution to the literature. Another strength of the current study is that 355 veterans provided data that were used in analyses. Surveys were completed with no incentive, and were completed and submitted online with only a two-month window of data collection. As such, it appears as though veterans are self-motivated to respond, which reflects the need to share their stories even after discharge from service. This speaks to the need for continuing research with the OIF/OEF/OND population regarding mental health concerns and treatment. For active duty personnel, there are more real-life, structural consequences to seeking treatment (e.g., loss of DoD secret or top secret clearance, loss of the ability to carry a weapon, loss of duties and responsibilities) that are not present for veterans. Therefore, having such a positive outcome with the number of veterans who returned survey data for the current study may also indicate a need by veterans who are no longer serving to have their voices heard.
regarding the issues surrounding stigma and barriers to mental health care post discharge from service, as their civilian status may contribute to a semblance of safety and protection from previously held fears of consequences.

As a further strength, this study was conducted by a researcher who is also in the military. Many of the studies reviewed did not have a current service member as a researcher. I have been in the Army National Guard for approximately nine years at the time of this study’s completion. Without a doubt, I can say that being a member of the armed forces has given me valuable insight to which I could refer throughout this study process. It has helped me to know what questions to ask, to have experience with what the education about mental health and treatment looks like in one branch, and to utilize my first-hand knowledge base when designing survey measures. In addition, I was able to traverse the avenues needed for approval for this study, as well as for survey dissemination, with a greater ease than would have been had I not ever served.

The current study explored variables relating to education about mental illness and treatment that was received while veterans were still in service, and the relationship between this education and stigma, as well as the likelihood of accessing care. To my knowledge, this is the only study that explored the impact of mental health educational programing given by the military. In addition, to my knowledge, this is the only study that explored the relationship between education, stigma, and the likelihood of accessing care. The findings from this study were paramount in that the relationship between stigma and the likelihood of accessing care was mediated by the impact of education.
Summary of the Current Study

The current study is one of a sparse body of literature that examines stigmas and barriers to mental health care and treatment in a sample population of veterans from the OIF/OEF/OND war eras. This study sought to explore variables that might predict levels of stigma and barriers to care in a sample of former military service members from all branches who served in the military from 2001 to the present time of data collection in 2017- or those veterans from the OIF/OEF/OND eras. In addition, my study explored the relationship between the independent variables of stigma and barriers to care and the dependent variables of the impact of education and the likelihood of accessing mental health care. Lastly, my study examined whether the education received while in the military about mental health illness and treatment mediated the relationship between stigma and the likelihood a veteran would access mental health care if they believed it was needed.

In total, 355 veteran participants were recruited for this study from national veteran organizations, and through social media. Participants filled out and submitted surveys on line through survey monkey. Participants were excluded if they were currently serving, collecting a government pension, under the age of 18, and if they did not serve in the OIF/OEF/OND eras. Data were analyzed using SPSS version 24, with four multiple regression analyses and one mediation analysis.

Results indicated that the sample population was largely white, male, employed full-time, in a relationship, of enlisted rank, had a high school diploma, and were predominantly between the ages of 30-39. Findings from hypotheses one and two testing indicated that female gender, older age, and reports of experiencing more positive impact
of mental health education that was received while in the military were found to significantly positively predict lower levels of stigma, whereas a self-reported diagnosis of depression significantly predicted higher levels of stigma. Being employed full-time was found to significantly positively predict higher levels of barriers to care. Findings from hypotheses three and four testing indicated that stigma was found to significantly negatively predict the impact of education and the likelihood of accessing mental health care. Findings from hypothesis five testing indicated that while in the presence of the mediation variable impact of education, stigma was no longer associated with the likelihood veterans would access care post discharge.

The results from this study supported findings from Britt et al (2008), Hoge et al (2004), and Kim et al (2011) in that veterans who are older, and veterans who identify as female experience lower levels of perceived internalized stigmas than do younger veterans and male veterans. These findings supports the need for future research to explore what factors contribute to female veterans and older veterans experiencing lower levels of stigma, as well as the need for exploration of which perceived stigmas are experienced by younger veterans and by male veterans. By identifying the particular types of stigma these veterans experience, targeted programs intended to reduce these stigmas can be developed. In addition, identification of contributing factors that reduce stigma about mental illness and treatment could lead to the institution of protective factors against experiencing higher levels of stigma.

Results from this study supported findings from seven reviewed studies in that depression was found to be a significant predictor of higher levels of stigma. This also supports the notion from three reviewed studies that veterans diagnosed with depression
who are in need of mental health care may not be reaching out for help due to the stigmas they perceive and experience. Therefore, screening for depression in veterans who present for medical appointments could help in the identification and referral for treatment. In addition, clinicians should screen for stigma in veterans who present with depression. As a result, practitioners and veterans could work together in therapy to reduce the identified stigmas.

Based on my review of existing research and to my knowledge, the independent variable of the impact of education and its relationship with stigma, has not been explored in previous studies. Findings from this study indicated that more positive endorsements of education impact significantly negatively predicted higher levels of stigma. These finding suggest that perceiving a positive impact of the education received may have the desired effect of reducing stigma.

With regards to employment, results of this study indicate that veterans who were employed reported experiencing more perceived barriers to care for mental health treatment. Therefore, if clinicians offered flexible hours outside of the normal work day to accommodate varying work schedules, perceived external barriers to care may be reduced. In addition, periodically screening for any barriers to care with veteran clients in therapy will allow the clinician and veteran a chance to process and mitigate barriers to care that may arise.

When the impact of education was used as a dependent variable, results indicate that veterans who reported experiencing higher levels of internal stigma believed the education they received while in the military was negatively impactful. This significant finding is unique to this study, and as such, it is also an important addition to the
literature. It can be inferred from these findings that the perpetuation of pervasive systematic and cultural stigma surrounding mental illness and treatment in the military may be a contributing factor to the education being perceived as positively or negatively impactful. When the likelihood of accessing care was used as a dependent variable, results indicate that higher levels of experienced stigma significantly negatively predicted the likelihood of accessing care. This significant finding was unique to this study, and as such, is also an important addition to the literature.

Due to several reasons, the findings of the mediation analysis from this study are potentially the most important and relevant outcome of this study. First, this finding supports the notion that the education received by current service members has a bearing on whether or not those service members would access care post discharge if they believed it was needed. Second, this finding supports previous outcomes from this study in highlighting the importance of reducing stigma. Third, this finding indicates that one mechanism for reducing stigma could be the education given to veterans while they are in service.

A number of implications arise as a result of the current study. Most importantly is the need for continued research with veterans from modern war eras. Other implications include: an awareness that veterans who need treatment the most are not accessing care; if a veteran endorses mental illness, they may have higher levels of perceived stigma; assessment of stigma with younger and male veterans is warranted; and the development of an instrument that measures for stigma and barriers to care in veterans is necessary. Future research into the construct of education impact and its relationship with stigma, barriers to care, and the likelihood of accessing mental health
care is warranted. Specifically, future research would benefit by exploring the content of education disseminated, who administers this education, directives given to personnel for follow up if they believe they need mental health care, and the impact of education received on the likelihood of accessing mental health care. Overall, these findings support that stigmas encountered in military can still exist after leaving the service and have lingering effects related to seeking treatment.
Appendix A

Cover Letter
Dear Veteran,

You are being invited to take part in a research study because you were a military service member, of any branch, serving in the OIF/OEF/OND era (since 2001). You are eligible to participate in this study only if you are not currently serving, and if you are not collecting a government retirement or pension. If you are currently serving, or collecting a pension or retirement, you are not eligible to participate. I, Anna Mastapha, am a doctoral student at the University of Kentucky and am conducting this research project under the guidance of Dr. Pamela Remer.

The purpose of this study is to gather data about perceived stigmas and barriers to mental health care that former military members face. In addition, the purpose is to gather data regarding education about mental health care that you may have received while in service. Finally, the purpose of this study is to gather confidential data regarding common mental health concerns that soldiers might be experiencing.

Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about why former military service members would or would not access mental health care, and about how to improve the education about mental health diagnoses and mental health care.

We hope to receive completed questionnaires from about 320 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey/questionnaire, but if you do participate, you are free to skip any questions or discontinue at any time.

The survey/questionnaire will take about 10 minutes to complete.

Although we have tried to minimize this, should you experience any discomfort from answering these surveys, the Veteran’s Crisis line- 1-800-273-Talk – is an available resource. However, the risks are minimal with this study, and it is expected that you will encounter no more discomfort than in regular everyday life.

All information gathered from you during this study will be kept confidential. This study does not require you to divulge any personal information that may identify you. No names will be attached to any individual responses, instead, your surveys are submitted on line through Survey Monkey. Only summary statistics and general impressions of the collective group of research participants will be communicated in any potential publications.
Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company’s servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company’s Terms of Service and Privacy policies.

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Anna Mastapha at 859-321-7812, or at annamastapha@gmail.com. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky between the business hours of 8am and 5pm EST, Mon-Fri. at 859-257-9428 or toll free at 1-866-400-9428.

Thank you in advance for your assistance with this important project. To ensure your responses/opinions will be included, please complete your surveys by August 1, 2017.

Sincerely,

Anna Mastapha
Educational, School, and Counseling Psychology Department
University of Kentucky
Appendix B

Demographics Questionnaire
Demographics Questionnaire

1. Gender: _______ Male _______ Female _______ Transgender

2. Age (in years): _____________

3. Ethnicity: _______ Caucasian (White)
   _______ African American (Black)
   _______ Asian
   _______ Latin
   _______ Native American or Alaska Native
   _______ Hawaiian or Pacific Islander
   _______ Multiple racial origin
   _______ Other: _____________________________________

4. Branch of Service: _____ Army _____ Air Force _____ Navy
   _____ Marines _____ Coast Guard _____ Reserves
   _____ Army National Guard _____ Airforce National Guard

5. Rank at discharge: ____________________________

6. Military occupation: _____________________________

7. Years in the military: ___________________________

8. Have you ever served in more than one branch or component? _____Yes _____ No
   If so,

   Which: ____________________________________________
9. Have you ever deployed? ______ Yes ______ No If yes,
Where: _______________________________________________________

How many times: _______________________________________________

Combat or non-combat deployment: ________________________________

10. Education level: ______ High School Diploma ______ Bachelor’s Degree
     ______ Master’s Degree ______ Doctorate Degree

11. Employment status: ______ Full-time ______ Part-time ______ Not currently employed

12. Are you in a relationship with someone you consider a significant other?
    ______ Yes ______ No

13. Before the military, were you ever in mental health treatment? ______ Yes _____ No

14. While you were in the military, were you ever in mental health treatment?
    ______ Yes ______ No

15. In your own words, please provide possible reasons why Veterans do not seek mental health care.
    ____________________________________________________________________
    ____________________________________________________________________
    ____________________________________________________________________
    ____________________________________________________________________
    ____________________________________________________________________

16. After discharge from the military, were you ever diagnosed with Posttraumatic Stress Disorder (PTSD)? ______ Yes ______ No
17. After discharge from the military, were you ever diagnosed with an anxiety disorder?
   _____ Yes    _____ No

18. After discharge from the military, were you ever diagnosed with depression?
   _____ Yes    _____ No

19. After discharge from the military, were you ever diagnosed with an alcohol use disorder?
   _____ Yes    _____ No

20. After discharge from the military, were you ever diagnosed with more than one of the
    previously mentioned mental health disorders (items 16 through 19)?
   _____ Yes    _____ No

21. Please check all places and venues that you can recall receiving education about mental
    health care and education about symptoms of common mental disorders (for example PTSD,
    depression, anxiety, or an alcohol use disorder) while in the military.
   _____ Annual briefings    _____ Basic training
   _____ AIT                  _____ Flyer in the armory
   _____ Active duty posts    _____ Training centers
   _____ Predeployment SRP    _____ Postdeployment SRP
   _____ Other ______________________________________________________

22. How did the education you received while you were in the military about mental health care
    (and symptoms of common disorders) affect your likelihood of accessing mental health care
    after discharge from service? Please circle your response.
   1 Reduced my likelihood of accessing care
   2 Did not change my likelihood of accessing care
   3 Increased my likelihood of accessing care
23. How did the information and education you received from any source while in the military about mental health treatment (and symptoms of common disorders) impact you?

_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

24. What is the likelihood that you would access mental health services if you believed you needed it? Please circle your answer.

   1       2       3       4       5
   Not likely           Very likely
Appendix C

U. S. Armed Forces Rank and Pay Grade Chart
### RANK INSIGNIA OF THE U.S. ARMED FORCES

#### ENLISTED

<table>
<thead>
<tr>
<th>Rank</th>
<th>Insignia</th>
<th>Army</th>
<th>Marines</th>
<th>Air Force</th>
<th>Coast Guard</th>
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#### OFFICERS

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<tr>
<th>Rank</th>
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<th>Army - Air Force - Marines</th>
<th>Navy - Coast Guard</th>
<th>W-1</th>
<th>W-2</th>
<th>W-3</th>
<th>W-4</th>
<th>W-5</th>
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<tbody>
<tr>
<td>O-1</td>
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<td>Second Lieutenant (2LT)</td>
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<td></td>
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<tr>
<td>O-2</td>
<td></td>
<td>First Lieutenant (1LT)</td>
<td>Captain (CP)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O-3</td>
<td></td>
<td>Major (MAJ)</td>
<td>Colonel (COL)</td>
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<td></td>
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<tr>
<td>O-4</td>
<td></td>
<td>Lieutenant Colonel (LTC)</td>
<td>Brigadier General (BRG)</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>O-5</td>
<td></td>
<td>Colonel (COL)</td>
<td>Major General (MGEN)</td>
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<tr>
<td>O-6</td>
<td></td>
<td>Lieutenant General (LGEN)</td>
<td>General (GEN)</td>
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<td>General of the Army (AG)</td>
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* Warrant Officer 1 W-1 * The grade of Warrant Officer W-1 is no longer in use.
Appendix D

Perceived Stigma and Barriers to Care for Psychological Problems Survey
Perceived Stigma and Barriers to Care for Psychological Problems

Using the scale provided, rate each of the possible concerns that might affect your decision to seek treatment for a psychological problem (e.g., a stress or emotional problem such as depression or anxiety attacks) from a mental health professional (e.g., a psychologist or counselor).

Please read each statement below, and select the choice that best fits for you. Answers range from strongly disagree (1), disagree (2) neither disagree or agree (3), agree (4), to strongly agree (5).

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Disagree or Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It would be too embarrassing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>2. It would harm my career</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. My peers might treat me differently</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. My peers would blame me for the problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>5. I would be seen as weak</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>6. People important to me would think less of me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>7. I don’t know where to get help</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>8. I don’t have adequate transportation</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>9. It is difficult to schedule an appointment</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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<tr>
<td>10. There would be difficulty getting time off for treatment</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>11. Mental health care costs too much money</td>
<td>1</td>
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References


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January 2006-     Park Place Behavioral Health Care, Kissimmee, FL
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Contract/Fee for Service Employee

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Contract/Fee for Service Employee

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Cunningham, L. E., Farro, A. R., & Lloyd, H. J., Ethical Considerations for Technologically-Based Assessments.