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Predicting Attitudes Towards Telemental Health Therapy Among U.S. Military Veterans

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PREDICTING ATTITUDES TOWARDS TELEMENTAL HEALTH THERAPY

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Dissertation Approval

This is to certify that the thesis presented to us by _____
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requirements for the degree of Doctor of Psychology, has been examined and is
acceptable in both scholarship and literary quality.

Committee Members' Signatures:

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Abstract

The recent U.S. military conflicts have brought to light the destruction of war. The amount of stress involved in deployment and exposure to combat has been found to increase the risk of mental health disorders. Many veterans are at risk for mental health disorders such as depression, anxiety, alcoholism, post-traumatic stress disorder, and traumatic brain injuries. The purpose of this study was to examine age, education level, computer technology skills, personality, and barriers to seeking treatment to determine if these variables would predict attitudes towards the use of telemental health (TMH) treatment. Participants from student veterans' organizations across the country were recruited to complete an online survey. Results from this study indicated that participants with high concrete barriers and distrust of caregivers were more likely to have favorable attitudes towards TMH compared to those without such attitudes. Participants with more favorable TMH attitudes also endorsed having a higher current need of help for mental health treatment than those with less favorable TMH attitudes.

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Chapter 1: Introduction

Statement of the Problem

The recent U.S. military conflicts, Operation Iraqi Freedom/Operation Enduring Freedom/Operation New Dawn (OIF/OEF/OND), have brought to light the vast destruction endured during wartime. Many servicemembers have returned from deployment with broken bones, scars, severe brain injuries, and missing limbs. Nearly 20% of servicemembers returning from deployment are at risk for mental health disorders, many of whom suffer from symptoms related to depression, anxiety, post-traumatic stress disorder (PTSD), and traumatic brain injuries (TBI; Elder & Cristian, 2009; Hoge, 2010; Hoge et al., 2004; Jones, Young, & Leppma, 2010; Mental Health Advisory Team 9, 2013; Patel, 2015; Richardson, Frueh, & Acierno, 2010). In order to readjust successfully into society, it is imperative that the veteran population be provided effective mental health care that is made available in a manner that will be accepted and utilized. Unfortunately, once identified as having mental health care concerns, only 30-45% of returning servicemembers expressed an interest in receiving help, only 23-40% sought treatment, and as little as 50% sought treatment after a referral to behavioral health (Hoge, Auchterlonie, & Milliken, 2006; Hoge et al., 2004; Kim, Thomas, Wilk, Castro, & Hoge, 2010; Milliken, Auchterlonie, & Hoge, 2007).

One of the foremost reasons for not seeking mental health care is the perceived stigmatization that accompanies treatment (Hoge et al., 2004; Kim, Britt, Klocko, Riviere, & Adler, 2011; Ouimette et al., 2011; Zinzow et al., 2013), including the perception of being seen as cowardly or weak (Visco, 2009). This is a prevalent theme among military members, especially those who are at higher risk for depression and

PTSD (Britt et al., 2008; Kim et al., 2011; Ouimette et al., 2011). Even when depression symptoms were controlled for, individuals with PTSD symptoms reported higher levels of perceived barriers, such as public or social stigma and personal beliefs or self-stigma (Vogt, 2011), and placed greater importance on these barriers than did their counterparts (Ouimette et al., 2011). Social, or public, stigma is comprised of three components: stereotypes, discrimination, and prejudice (Corrigan & Watson, 2002). Self-stigmatization occurs when societal stigmas are internalized, leaving the individual to feel less valued due to their mental concerns, which can lead to lower self-esteem and self-efficacy (Corrigan, 2004; Corrigan & Watson, 2002). Other barriers to seeking care include avoidance behaviors, particularly for those with PTSD (Ouimette et al, 2011; Sayer, Friedemann-Sanchez et al., 2009), and difficulties accessing care through the Department of Veterans Affairs (VA; Britt et al., 2008). Additional barriers to seeking mental health services are career concerns, discomfort speaking about mental health problems, and medication concerns (Zinzow et al., 2013). These stigmas and perceived barriers have the potential to impede veterans from seeking mental health treatment.

An additional barrier to seeking treatment, particularly in the VA system, is being able to navigate the logistical barriers (Ouimette et al., 2011). A predominant reason for seeking treatment outside of the VA system is proximity, accessibility to services, and difficulty scheduling appointments (Kim et al., 2011; Sayer, Friedemann-Sanchez et al., 2009). Utilizing technology in mental health treatment such as virtual reality, computerized therapy, and video teleconferencing can help mitigate both the stigma as well as logistical barriers to receiving care (Wilson, Onorati, Mishkind, Reger, & Gahm, 2008). The use of telemental health (TMH) services would allow individuals having

difficulty getting to the VA for appointments the opportunity to be treated through the use

of technology from their homes. Wilson et al. (2008) found the majority of

servicemembers have the required internet and broadband technology available in their

homes that is necessary for TMH use, and that 33% of those who would not speak with a

mental health professional in person were willing to try technology-based therapy.

Purpose of the Study

The purpose of this study was to examine whether age, education level, computer

technology skills, personality as determined by the Five Factor Model (FFM), and

barriers to seeking treatment would predict attitudes towards the use of TMH treatment.

This study also examined whether utilization of services provided through the VA system

would be considered if treatment through TMH was provided as an option. Another goal

of the study was to assess whether individuals who have greater perceived barriers to

seeking treatment would be more willing to utilize TMH compared to those with fewer

barriers. The present study has implications that may address whether the use of TMH

treatment through the VA has the potential to reach veterans who could benefit from

mental health services, but would not otherwise seek treatment through traditional means.

Chapter 2: Review of Literature

The recent military conflicts of OIF/OEF/OND have demonstrated the destructions of war in a variety of ways. Many servicemembers have returned from deployment with devastating injuries including broken bones, scars, TBI, and missing limbs. Although these injuries are visible and clearly warrant medical attention, it is the invisible wounds, those that occur in the mind, that have the potential to do the most harm. The amount of stress that can occur during deployment, in addition to exposure to the horrific nature of combat, increases the risk of developing mental health concerns (Hoge et al., 2004; Kelly, Boyd, Valente, & Czekanski, 2014). The most common stressors encountered by servicemembers in combat include lengthy and multiple deployments, exposure to roadside bombs such as IEDs, witnessing multi-casualty events such as suicide bombers, handling human remains, killing an enemy combatant, the inability to stop an act of violence, and seeing the injury or death of close friends, women, or children (Conard & Sauls, 2013; Hoge et al., 2004; Kelly et al., 2014).

The number of servicemembers experiencing trauma directly related to combat increased greatly from 2005 to 2012. For example, the number of servicemembers in Iraq who reported experiencing a casualty within their unit increased from 59.3% in 2006 to 73.4% in 2010 (Joint Mental Health Advisory Team 7 [J-MHAT 7], 2011). Moreover, the number of servicemembers who were responsible for the death of the enemy increased from 15% in 2006 to 48% in 2010 (J-MHAT 7, 2011). Killing a fellow human being has been found to be one of the most traumatic experiences for servicemembers in combat, and has been found to be a factor in the development of PTSD as well as suicidal ideation (Maguen et al., 2012). The greater the number of combat-related incidents

servicemembers experience is correlated with an increased prevalence of meeting criteria

for a mental health diagnosis (Mental Health Advisory Team 9, 2013). Specifically,

those who experienced direct threat of death, were shot or seriously injured, witnessed

someone being wounded or killed in combat, and were exposed to violence prior to

military service were found to have higher rates of PTSD (Phillips, Leardmann, Gumbs,

& Smith, 2010).

The percentage of servicemembers returning from OIF/OEF/OND with mental

health issues, particularly PTSD, is unsurprising given the traumatic experiences and

stress they undergo while deployed, and their return home from deployment can be

difficult. Rates for PTSD have been found to vary across militaries from different

countries that played a role in OIF/OEF/OND. For example, research has found that 4-

17% of U.S. servicemembers returning from Iraq developed PTSD, as compared to 3-6%

of those returning to the U.K. (Fear et al., 2010; Richardson et al., 2010). In past military

conflicts, the journey home for servicemembers was long, often returning across an ocean

by ship. It has been argued that the extended length of time to travel home allowed for

individuals to process their experiences and to adjust from the anxieties and discomforts

of war to home life. Servicemembers had the opportunity to rest and focus on their

personal well-being, while also being able to normalize their experiences and emotional

reactions with others who survived the same hardships. Now, with more efficient modes

of transportation, servicemembers are returning abruptly from war in a matter of days

rather than months, losing the benefit of time for self-reflection and normalization of their

emotional experiences (Deahl, Klein, & Alexander, 2011). The U.K. has taken this idea

into account in an attempt to decrease rates of PTSD among deployed servicemembers.

Since 2004, their military personnel experience a graduated return home with time and space specifically designed for decompression from their deployment experience. By 2006, U.K. servicemembers spent 36 hours in Cypress on their return home from combat operations. Although only 50% of personnel reported wanting decompression time prior to arriving home, greater than 90% reported the time being helpful afterward (Jones, Burdett, Wessely, & Greenberg, 2011). The decompression time for returning servicemembers might be a factor in the lower rates of PTSD among the U.K.'s military compared to that of the U.S. There has not been sufficient research on this approach and its impact on PTSD; however, it warrants continued examination (Hacker Hughes et al., 2008).

Just as differences among PTSD rates have been found between countries, it is a popular belief that female servicemembers are at greater risk of developing PTSD than their male counterparts (Chaumba & Bride, 2010). Nevertheless, studies analyzing mental illness among female servicemembers have found that women are less or equally as likely as men to develop PTSD (Chaumba & Bride, 2010; Jacobson, Donoho, Crum-Cianflone, & Maguen, 2015; Vogt et al., 2011; Woodhead, Wessely, Jones, Fear, & Hatch, 2012). Women have reported less exposure to combat-related stressors in comparison to men; however, they reported a higher level of exposure to other stressors, such as prior life stress and sexual harassment while deployed (Conard & Sauls, 2013; Vogt et al., 2011). Although males were found to be at higher risk for abusing substances, females were found to be more prone to depression (Conard & Sauls, 2013). This research suggests that female servicemembers may be just as resilient to the stressors of combat as men. The role of women serving in direct combat is currently

undergoing changes, with military occupational specialties being open to female

servicemembers in all branches of the military in 2016 (Servick, 2015). Further, in April

2016, the U.S. Army announced that 22 women were being commissioned as infantry and

armor officers (Michaels, 2016). As female servicemembers' exposure to combat

increases, research on prevalence rates of mental health conditions, as well as how to best

treat them, should continue.

It has been estimated that up to 17% of servicemembers returning from combat

deployment are at risk for mental illness, with an estimated prevalence of 5-20% among

those not seeking treatment having PTSD (Hoge et al., 2004; Ramschand et et al., 2010;

Richardson et al., 2010). Of those found to have mental health symptoms, fewer than

50% sought treatment even after a referral to a mental health provider, with only 23-40%

of them actually seeking treatment (Hoge et al., 2006; Hoge et al., 2004; Kim et al., 2010;

Milliken et al., 2007). For those who did seek treatment, as many as 50% screened

positive for PTSD (Ramschandet et al., 2010). With nearly 20% of servicemembers

returning from deployment having mental health concerns, and a large percentage of

those not seeking treatment, it is imperative that this population is provided not only with

effective treatment options, but offered services in a way that will be accepted and

utilized.

Prevalence Rates of Mental Health Issues

Traumatic brain injury. TBI has been identified as one of the signature injuries

of OIF/OEF/OND due to its high rate of occurrence (Elder & Cristian, 2009; Hoge, 2010;

Jones et al., 2010; Patel, 2015). The recent military conflicts in Iraq and Afghanistan

have paved the way for increased awareness and study of TBI. There is an increased

probability of suffering from a TBI as a result of the number of servicemembers exposed to blasts and the frequency of multiple deployments (Jaffee & Meyer, 2009). Due to modern technology in the development of protective gear, more servicemembers are surviving blast injuries from IEDs, rocket propelled grenades, explosively formed projectiles, and other life-threatening munitions than in previous hostile conflicts (Hoge, 2010; Jaffee & Meyer, 2009). This has led to an increase in the number of servicemembers with physical injuries returning home with an array of lingering symptoms, including sleep disorders, cognitive processing deficits, chronic headaches, and memory loss (Hoge, 2010). New medical technologies and behavioral health interventions for treating TBI have been a result of the frequency of these injuries in the military, and the need to provide quality care (Doncevic & Boerman, 2010; Jaffee & Meyer, 2009; Trudel, Nidiffer & Barth, 2007).

The brain is a complex organ and, in like manner, TBI is a complex medical condition that can be difficult to diagnose. A commonly agreed upon definition of TBI is a "blow, jolt, or other injury to the head that disrupts the functioning of the brain" (Jaffee et al., 2009, p. 656). Jaffee et al. (2009) also describe primary injury as an external force "applied to the brain that is significant enough to alter neurological functioning or consciousness" (p. 656). Further, secondary injury can follow primary injury, resulting in the aggravation of cerebral dysfunction (Jaffee et al., 2009). Subsequently, the severity of the injury sustained to the brain is what delineates which of the three levels of TBI an individual suffers: mild, moderate, or severe (Girard, 2007; Jaffee et al., 2009). First, mild traumatic brain injuries, better known as mTBI or concussions, involve a temporary change in cognitive functioning and may include short-term symptoms such as headache,

confusion, and blurred vision (Girard, 2007; Sayer, Rettmann et al., 2009). Second, moderate TBI includes a period of loss of consciousness due to the injury and may result in memory loss, mood and emotional changes, and physical problems that may be ongoing for several months (Girard, 2007). Finally, severe TBI consists of the injury resulting in a coma or posttraumatic amnesia that lasts for one week or longer (Girard, 2007). The levels of TBI have also been categorized by the amount of time the injured loses consciousness. For example, a loss of consciousness of no more than 30 minutes is evaluated as mTBI, moderate TBI is considered a loss of consciousness lasting between 30 minutes to 24 hours, and greater or equal to 24 hours of loss of consciousness is equated to severe TBI (Roy & Francis, 2011). Not only is diagnosing the severity of an injury to the brain difficult and may vary depending on the attending physician, but it is also challenging given that there is no agreed upon definition of what constitutes TBI.

Diagnosing TBI after time has passed since the injury, particularly mTBI, poses challenges even when the best medical care and technology are available (Hoge, 2010). War zones, especially for units that are on remote missions, present new challenges, which have led to the development of the Military Acute Concussion Evaluation (MACE) that medics can use to screen for TBI immediately (Elder & Cristian, 2009; Jaffee et al., 2009; Jaffee & Meyer, 2009). There are two components in the MACE: the servicemember's history, which is used to determine the event that took place and a change or loss in consciousness, and an evaluation of his or her cognitive processing using the Standardized Assessment of Concussion (SAC; Jaffee et al., 2009; Jaffee & Meyer, 2009).

The military has recognized the need to identify TBI in a more effective, efficient

manner, which prompted researchers at the Defense and Veterans Brain Injury Center

(DVBIC) to develop an assessment that can be administered in the field to gather

information on reaction time, memory, and mood. The data received can be uploaded via

a secure web-based system, and combined with additional medical information for

specialists located remotely to review and provide treatment guidelines and

recommendations for forward operating medical staff (Girard, 2007). The

implementation and utilization of the telemedicine consultation program for TBI in

warzones was evaluated from 2008 to 2010. Throughout this period, the number of TBI

consultation requests increased, whereas the mean response time from an expert in the

U.S. decreased to 2 hours and 44 minutes. The majority of consultations originated from

Afghanistan followed by Iraq, and consultants were able to recommend a care plan that

could be carried out by the local medical team (Yurkiewics et al., 2012).

Another recent approach that assists in the diagnosis of TBI is the Automated

Neuropsychological Assessment Metrics (ANAM), which is taken by servicemembers

prior to deployment and establishes a baseline assessment of cognition (Girard, 2007;

Jaffee et al., 2009; Jaffe & Meyer, 2009). Following an injury, the same test can be used

to determine if the servicemember is able to return to duty (Jaffee & Meyer, 2009).

Additionally, upon return from deployment, a version of the Brief TBI Screen (BTBIS) is

administered to help identify those who sustained a brain injury but were not evaluated

and treated (Jaffee & Meyer, 2009). The Veterans Health Administration (VHA) has also

been thoroughly screening veterans who were deployed to OIF/OEF/OND and offering

rehabilitation services. The VHA's TBI screening process was found to be an effective

method of connecting servicemembers with appropriate follow-up care, as more than

90% who were evaluated received further care from the VHA within the next year

(Hendricks et al., 2013).

In order to address TBI more proactively, TBI education for patients can help in

understanding symptoms, treatments, projected recovery time, and the various resources

available (Jaffee et al., 2009). Learning about TBI does not stop with patients

themselves; rather, information also needs to be provided for caregivers (Girard, 2007).

In addition to educating servicemembers, information about TBI should be disseminated

to the families of those suffering with TBI as well. The head injury does not only affect

the individual, but also his or her spouse, children, and parents. Therefore, families

should be made aware of symptoms, how they may change the dynamics within the

family, and coping strategies for themselves as well as their injured loved ones (Dausch

& Saliman, 2009; Perlick et al., 2011; Sayer, Rettmann et al., 2009). Families that

understands the diagnosis and, most importantly, support their injured servicemembers

are valuable to servicemembers' successful rehabilitation and recovery (Doncevic &

Boerman, 2010). Additionally, continued education for mental health care providers

regarding best practices for treating TBI with comorbid diagnoses such as PTSD,

depression, or sleep concerns is needed (Sayer, Rettmann et al., 2009).

There are a multitude of comorbid medical and mental health issues that are

prevalent with TBI in the military population (Dausch & Saliman, 2009; Lew et al.,

2007). The very nature of exposure to blasts that cause TBI may induce the development

of PTSD or other anxiety-related complications in individuals witnessing the vast

destruction to property and life (Hoge, 2010; Jaffee & Meyer, 2009). Integrated and

comprehensive treatment for veterans is necessary because of their multifaceted and complex medical and mental health needs (Batten & Pollack, 2008; Girard, 2007; Jaffee et al., 2009; Lew et al., 2007). Care that is tailored to each TBI patient's needs is fundamental in order to obtain results that lead to optimal recovery (Jaffee et al., 2009; Pegg et al., 2005). One means of achieving optimal recovery is including the integrated health care system in this discussion to fully address the complex needs of today's modern military.

Inclusion of integrated health care is a necessity given the change in demographics among deployed troops, increase in the number of women serving, a wide age span, and, especially, the number of reservists being deployed. Moreover, many more servicemembers are married and have children than during previous military engagements, which leads to the need for family and marital treatments (Batten & Pollack, 2008). Another reason for an integrated health system is the reality of multiple deployments and the stress incurred during training for the mission as well as while deployed, and the need for coping skills while away and upon return home (Batten & Pollack, 2008). Through integrating a servicemember's primary care physician, neurologist, psychologist, and other military and civilian medical professionals, a comprehensive treatment plan can be developed with the ultimate goal of improved patient health and a quicker recovery (Batten & Pollack, 2008). Caring for veterans in an evidenced-based, holistic and interdisciplinary manner will require increased networking and facilitation of collaboration (Batten & Pollack, 2008). There are many benefits that come from an integrated treatment approach, including early identification of problems, increased treatment compliance, greater continuity of care, decreased patient resistance

through the use of a team approach, increased rapport with patients, fewer treatment

errors, and a reduction of provider burnout (Patrick, Hebert, Green, & Ingram, 2011).

There are many challenges involved in implementing and maintaining integrated

health care for veterans with TBI. For instance, a patient with TBI may be under the care

of physicians from a variety of care centers including the military, Veteran's Affairs

Medical center, and civilian facilities over the course of his or her recovery (Jaffee et al.,

2009). Further, comorbid medical and mental health issues can interfere with patients'

ability to fully engage in treatments, as can differences in treatment methods on behalf of

specialists and mental health professionals (Sayer, Rettmann et al., 2009). A study

focusing on the use of cognitive-behavioral therapy for treating psychological distress

and community integration within the acquired brain injury (ABI) population found no

difference in longer-term benefits between those receiving treatment in a group setting

versus those receiving teletherapy (Arundine et al., 2012). This study suggests that the

benefits of teletherapy may be equivalent to those of traditional therapy within the ABI

population. Although the ABI and TBI populations differ, it is worth exploring whether

teletherapy can be equally beneficial with the TBI population.

Alcohol use. The VHA provides more services targeting alcohol and other

substance misuse than any other organization in the U.S. (Humphreys, Harris, &

Kivlahan, 2009). Alcohol misuse includes the continuum of unhealthy alcohol

consumption from at-risk drinking and extends to include all of the alcohol use disorders

(Hawkins, Lapham, Kivlahan, & Bradley, 2010). Of the veterans who have served in

OEF/OIF/OND, between 12-40% have been found to misuse alcohol (Eisen et al., 2012;

Hoge et al., 2004), with substance use disorders being among the most diagnosed mental

health problems among those who utilize the VHA (Seal, Bertenthal, Minder, Sen, & Marmar, 2007). Veterans of OEF/OIF/OND who are male, younger, and single, and have other mental health problems, lower income, and more combat experience are at an even greater risk of alcohol misuse (Burnett-Zeigler et al., 2011; Hawkins et al., 2010). Nevertheless, similar prevalence rates have been found among women veterans, with few being given treatment for alcohol misuse (Nunnink et al., 2010). Although OEF/OIF/OND veterans engage in alcohol misuse to the same extent and rates as other mental health concerns, referral rates for alcohol treatment are lower than for other mental health care treatment (Milliken et al., 2007). These authors also found that fewer than 1% of active duty National Guard and Reserve members are referred to substance treatment of any kind.

National Guard and Reserve members are a subset within the military who are at an increased risk of mental health concerns, with rates as high as 42%, compared to 20% among active duty members (Burnett-Zeigler et al., 2011; Milliken et al., 2007). They have also been found to have higher rates of alcohol misuse (Jacobson et al., 2008; Milliken et al., 2007), especially among the National Guard and Reservists who have been exposed to combat. The exposure has been associated with heavy drinking, as well as other alcohol-related problems (Jacobson et al., 2008). Of National Guard members who met the criteria for alcohol misuse, only 31% were utilizing mental health services, with only 2.5% receiving treatment specific to their substance use (Burnett-Zeigler et al., 2011). This low percentage of servicemembers engaging in substance use treatment could be increased potentially by taking advantage of and addressing substance misuse in general mental health treatment (Burnett-Zeigler et al., 2011).

The methods used for screening for alcohol misuse may not be the most effective in identifying those who could benefit from treatment. In 2004, the VHA implemented screening for alcohol misuse, and has been using the Alcohol Use Disorders Identification Test–Consumption Questions (AUDIT-C) for screening since 2006 (Bradley et al., 2006). A study in which AUDIT-C questionnaires were mailed to veterans who had completed the AUDIT-C at the VHA within 90 days determined that twice as many patients met criteria for alcohol misuse on the mailed survey than during in-person clinical screenings (Bradley et al., 2006). This brings into question the validity of clinical screening methods and the need for a more effective means of identifying those with alcohol misuse. Many veterans may be underreporting their alcohol consumption during the clinical assessments, which would result in the severity of alcohol misuse being underestimated (Eisen et al., 2012).

Barriers to receiving treatment for alcohol-related problems vary by individual; however, one study found that 30% of servicemembers did not want their treatment noted on their records, 24% were concerned they would be seen as weak, 22% were concerned they would be viewed differently by their unit leadership, and 22% were embarrassed about the issue (Burnett-Zeigler et al., 2011). These barriers have the potential to keep many that could benefit from treatment from seeking the help they need. Educating not only to those meeting the criteria for alcohol misuse, but also at a system level, can help address and minimize the concerns that prevent individuals from seeking treatment (Burnett-Zeigler et al., 2011).

Comorbidity rates with alcohol misuse, PTSD, and depression are high (Burnett-Zeigler et al., 2011). Research shows that 82-93% of OEF/OIF/OND veterans with

substance use disorders were found to have an additional diagnosable mental health

disorder (Seal et al., 2011). In particular, comorbidity between alcohol misuse and PTSD

have been well established (Stewart, 1996), with the prevalence being between 41-85%

(Kessler et al., 1995; Kulka et al., 1990). Further, women who meet criteria for PTSD

report higher usage of substances when compared to women who are not diagnosed with

PTSD (Dobie et al., 2004). The rate of coexistence between these two problems may be

due to alcohol being used to alleviate symptoms of PTSD (Kehle et al., 2012).

Avoidance symptoms, in particular, can accurately predict those who will have an onset

of diagnosable post deployment alcohol misuse (Kehle et al.). Additionally, individuals

with high levels of anxiety have increased alcohol usage due to the belief that alcohol

will reduce their emotional tension (Watt, Stewart, Birch, & Bernier, 2006). There has

been debate regarding which diagnosis to treat first; however, Stewart and colleagues

(1998) surmised that the two disorders often maintain each other in a vicious cycle,

which leads to simultaneous treatment as the logical preference. When servicemembers

were given an integrated treatment for both PTSD and alcohol misuse, an effective

change in both disorders was found, which provides some evidence for concurrent

treatment (Steindl, Young, Creamer, & Crompton, 2003). Most notably, using a

cognitive-behavioral approach with OEF/OIF/OND veterans for treating both alcohol use

disorders and PTSD promises to be a successful intervention. This treatment method

provides skills training while interweaving a focus on both alcohol use and PTSD

symptoms (McDevitt-Murphy, 2011).

     Suicide. The VA serves a population that inherently holds many risk factors for

suicide, including being predominately older males, and having physical difficulties,

problems with substance abuse, and mental illness (Agha, Lofgren, VanRuiswyk, & Layde, 2000). In 2007, President George W. Bush identified a primary goal of suicide prevention in his New Freedom Commission on Mental Health and the VA Mental Health Strategic Plan. In response, the VA initiated a suicide prevention campaign (Godleski, Nieves, Darkins, & Lehmann, 2008). That same year, Kaplan, Huguet, McFarland, and Newsom (2007) published a study stating that veterans were twice as likely to die of suicide as civilians. One of the major factors found to increase suicide risk in this study was being limited in performing daily life tasks. Given the number of servicemembers returning from combat with serious physical injuries, there is cause for great concern (Godleski et al., 2008). Research suggests that reintegrating into society after deployment can be challenging for veterans (Kukla, Rattray, & Salyers, 2015). A study by Interian, Kline, Callahan, and Losonczy (2012) identified that greater than 70% of returning servicemembers experienced at least one stressor related to readjustment. Furthermore, veterans with mental health disorders who experienced combat reported experiencing more barriers that impede reintegration into the workforce than those without mental health disorders or combat experience (Kukla et al., 2015). In addition to reintegration with family and society, post-deployment stressors may include chronic pain, emotional numbing and distancing, guilt from combat experiences, emotional dysregulation, discomfort seeking care, and physical injuries sustained from war, each of which can lead to increased risk of suicide (Lusk et al., 2015).

Mental health disorders such as depression and PTSD are common diagnoses among veterans and have been linked to an increased risk of suicide and suicidal behaviors (Martin, Ghahramanlou-Holloway, Lou, & Tucciarone, 2009; Seal et al.,

2010). Of veterans who screen positive for depression and/or PTSD and also endorsed

hopelessness, 75% had suicidal ideation, approximately 13% endorsed having a suicide

plan, and just over 4% reported having suicidal thoughts and a plan (Maguen et al.,

2015). Additional factors that may increase veteran suicide risk include a burden due to

illness, employment and combat experiences, and knowledge of and access to firearms

(Haney et al., 2012; Kaplan, McFarland, Huguet, and Valenstein, 2012; Martin et al.,

2010,). Risk factors identified specifically among OIF/OEF/OND veterans include

family relationship difficulties, legal problems, and challenges with employment (Kaplan

et al., 2012; Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011; Pietrzak, Russo,

Link, & Southwick, 2011).

Patients accessing the VA have been found to live in more rural areas when

compared to the general population (McCarthy et al., 2012). It has been noted that the

risk for suicide may be greater for VA patients residing in more rural areas than those

living in urban areas. Studies have shown that rural VA patients suffered greater physical

difficulties and had a lower quality of life in regard to health than those living in more

suburban or urban settings (Weeks et al., 2004). VA patients in rural areas were also

found to have higher rates of suicide and an increase in risk of suicide, even after both

individual and contextual factors were adjusted (McCarthy et al., 2012). Additionally,

veterans in rural areas had less access to health care services and fewer options to access

VA care (West & Weeks, 2006). McCarthy and colleagues (2012) expressed the

importance of outreach programs for suicide prevention to rural veterans, and noted that

these veterans could benefit from greater access to mobile crisis teams as well as

telehealth services, in addition to previously established crisis hotlines.

The VA, through suicide initiatives, has implemented and incorporated approaches to improve detection and response to those at risk for suicide. This includes improved access to mental health care services; delivery of evidence-based treatment; educational programs for staff, veterans, and their caregivers; and establishment of a national free crisis hotline (Kemp & McKeon, 2009, as cited in Dobscha et al., 2013). Of veterans who screened positive for depression, 80% received a brief suicide assessment (BSA), and over 90% of BSAs administered occurred within one day of the positive screen (Dobscha et al., 2013). Despite advances in screening procedures, one area for concern was that at two of the three VA sites involved in the study, women were less likely to receive BSAs than men. Nevertheless, overall, 9 out of 10 patients with positive depression screens were followed with a BSA (Dobscha et al., 2013), which is an important step in preventing suicide among the veteran population.

The Portland VA recognized the need for veterans living in rural areas, and in 2009, the Rural Mental Health (RMH) team was established as part of the Oregon Rural Mental Heal Initiative. The RMH allowed for greater access to top quality mental health care for veterans living in rural areas throughout the Pacific Northwest (Lu, Woodside, Chisholm, & Ward, 2014). This program focused on reducing suicide risk factors and strengthening protective factors. Additionally, case studies from RMH indicate promising findings that TMH services can help reduce suicidal ideation and behaviors (Lu et al., 2014). Research examining the role of telehealth in reducing suicidal ideation or behaviors specifically has yet to be conducted; however, Godleski, Darkins, and Peters (2012) found that those receiving TMH services had 25% fewer psychiatric admissions and hospitalizations in contrast to those receiving no mental health treatment. The use of

TMH in suicide prevention among veterans is promising; however, further research is needed.

Stigma and Barriers to Care

The military is known for instilling attitudes of toughness that are not necessarily present in civilian life. Throughout basic training, new servicemembers are taught to be strong physically and mentally (McFarling, D'Angelo, Drain, Gibbs, & Olmsted, 2011). Specific values are highlighted in the military community, such as duty, honor, and country (Visco, 2009). This ideology is even present in the recruiting slogans for many of the services, such as "Army Strong," and "The Few, the Proud, the Marines," which certainly represent an underlying attitude within the military services (McFarling et al., 2011). These beliefs, which are promoted by military culture, serve as a barrier to servicemembers seeking mental health treatment when it is needed (Zinzow et al., 2013). The tremendous value placed on strength within military culture creates an environment where weakness is not tolerated, which can increase the risk for stigma. It is understandable why servicemembers may perceive a stigma against seeking mental health treatment when all of their training, from the moment they became recruits to basic training and throughout their careers, focuses on messages of strength and pride. Although this may be an asset when creating battle-ready servicemembers, it may be a barrier to seeking mental health treatment when needed.

Research suggests that barriers to mental health treatment may be related to concerns that are incorporated into stigma. For example, servicemembers may avoid treatment because of the perception of being seen as cowardly or weak (Visco, 2009), and there is worry that it will negatively impact their careers and promotion potential (Hoge

et al., 2004; Kim et al., 2011; Warner, Appenzeller, Mullen, Warner, & Grieger, 2008), especially among those with high security clearances (Visco, 2009). In addition, it has been suggested that active duty servicemembers lack confidence in the ability of mental health care providers to help, based on previous negative experiences, and they are reluctant to see a civilian provider who may not be able to relate to the deployment experience (Visco, 2009). This is illustrated by servicemembers' increased likelihood of truthfulness in a mental health screening that is conducted by a physician or mental health provider attached to their deployment unit (Warner et al., 2008). This suggests that accessing mental health care within the VHA would reduce this particular treatment barrier, as they have had experience working with servicemembers who have deployed. Even when providers have not been deployed themselves, having worked with individuals who experienced deployment situations may enable them to be a more relatable resource.

The military culture provides unique factors for social stigmatizations. Within this culture, there are concerns about how peers and leadership will perceive servicemembers who seek treatment (Greene-Shortridge, Britt, & Castro, 2007; Hoge et al., 2004). In addition, some servicemembers who perceive peers are having difficulty with mental health problems may distance themselves (Greene-Shortridge, Britt, & Castro, 2007), which can add to the perception of social stigma and hindrance of seeking help. Due to these perceptions among military members, barriers to receiving care have been found to be of particular importance in regard to seeking mental health care treatment (Britt et al., 2008). As a result, it is important to understand the factors that are preventing servicemembers from seeking the treatment they need. Specifically,

understanding the two types of stigma, external and internal, as well as avoidance is important to begin breaking down these barriers.

External stigmas are concerns regarding public or social stigma (Vogt, 2011). Due to such stigmatizations, many of those who could benefit from evidence-based behavioral health treatment never seek treatment, whereas others do not adhere to treatment (Corrigan, 2004; Vogt et al., 2014). It is important to understand these key factors as a means of developing more effective treatment models. Addressing both social and self-stigmas in behavioral health care may have an impact in ultimately being able to treat those individuals most in need. Social stigma is comprised of three components: stereotypes, discrimination, and prejudice (Corrigan & Watson, 2002). Nearly 75% of OIF veterans reported concerns regarding being labeled with a mental health disorder (Stecker, Fortney, Hamilton, & Ajzen, 2010). Social stigma has the potential to be a detriment on social opportunities due to the preconceived notions of the general public on those with mental illnesses (Corrigan, 2004). Servicemembers emphasized the need for increased mental health providers both while deployed and while at home, and to decrease stigma (Bush, Fullerton, Crumpton, Metzger-Abamukong, & Fantelli, 2012).

Internal stigmas are personal beliefs or self-stigmas (Vogt, 2011). Self-stigmatization can grow out of the behaviors of other individuals in a social group. When individuals with mental health concerns experience the social and emotional distancing of others, they may manifest internal self-stigma (Greene-Shortridge, Britt, & Castro, 2007). Essentially, societal stigmas are internalized, which leaves the individual feeling less valued due to his or her mental health concerns, which can lead to lower self-esteem and

self-efficacy (Corrigan, 2004; Corrigan & Watson, 2002). A servicemember's personal

beliefs regarding mental health treatment are a consequence of internalizing and

incorporating negative beliefs about mental illness, which can result in not seeking

treatment (Vogt, 2011). Understanding that internal stigma is a factor in the decision to

seek out mental health care treatment provides more support for the development of

approaches that help reduce, if not fully break down, barriers. This may be especially

valuable given prior research demonstrating that those with symptoms of PTSD and

depression have increased perceptions of stigma and barriers to receiving care (Britt et

al., 2008; Hoge, 2004; Kim et al., 2011; Ouimette et al., 2011). The utilization of TMH,

especially in one's home, has the potential to reduce barriers to seeking mental health

treatment. Expanding the already existing TMH options within the VA has the potential

to reach veterans who are in need of psychological services that could improve the

quality of life of the veteran population.

Avoidance behaviors are generally recognized as maladaptive compensatory

strategies, and are considered a barrier to seeking care. Research demonstrates that

PTSD symptoms expressed highly through avoidance behaviors are correlated with

perceived barriers to care (Ouimette et al, 2011; Sayer, Friedemann-Sanchez et al., 2009).

More specifically, the avoidance symptoms take the form of avoiding PTSD treatment in

order to refrain from talking about specific traumatic events and reliving painful emotions

and memories from deployment (Ouimette et al., 2011; Sayer, Friedemann-Sanchez et al.,

2009). Denying there is a problem and actively evading treatment is an example of this

avoidance behavior (Overton & Medina, 2008). If treatment for PTSD is made more

accessible with TMH technology, servicemembers may be more inclined to engage in treatment from a familiar and comfortable environment of their own choosing.

Military Response to Mental Health

The Department of Defense mandated that all servicemembers returning from deployment starting March 1, 2004 engage in a Post-Deployment Health Reassessment (PDHRA; Visco, 2009). This measure is intended to provide a means for early identification and treatment of individuals experiencing symptoms of PTSD and other mental health concerns within 3 to 6 months of their return (Visco, 2009). This singular act exemplifies the military's recognition of the importance of identifying individuals who may be experiencing mental health and readjustment difficulties, with an ultimate goal of providing the necessary care once identified. In the same way that a servicemember suffering from an intense blast injury would receive medical care to treat physical wounds, the servicemember experiencing mental health-related issues would also receive the proper resources and services. Although this has been a tremendous asset to many servicemembers, not all are referred or identified by the PDHRA process for two main reasons: delayed onset of symptoms and stigma (Visco, 2009).

First, not all servicemembers present with symptoms of depression or PTSD immediately following a deployment. Conversely, symptoms may increase with time upon returning from deployment (Bliese, Wright, Adler, Thomas, & Hoge, 2007; Hoge et al., 2004; Kim et al., 2010; Thomas et al., 2010). Given that severe symptoms of PTSD and depression are not always experienced immediately upon return from deployment, there is a large group who may pass the PDHRA with minimal symptoms after their arrival home from a combat zone, but go on to develop more severe symptoms. Many of

these servicemembers then separate from the military and no longer have the established

support network checking for good mental health. Some research has suggested that 10-

15% of cases with PTSD have a delayed onset (NICE, 2005), and the full impact of

experiencing a traumatic event can be delayed as long as 50 years (Murray, 2005). These

findings illustrate the need to continue monitoring and providing veterans with the best

behavioral health care possible.

Second, it has been documented that once identified as having mental health

concerns, very few servicemembers seek treatment (Hoge et al., 2006; Hoge et al., 2004;

Kim et al., 2010; Milliken et al., 2007). One of the primary reasons for not seeking

mental health care is the perceived stigma that goes along with treatment (Hoge et al.,

2004; Kim et al., 2011; Ouimette et al., 2011). This is a prevalent theme among military

members, especially those who are at higher risk of depression and PTSD (Britt et al.,

2008; Kim et al., 2011; Ouimette et al., 2011). Studies suggest that servicemembers

reporting mental health symptoms are twice as likely to report fears of being stigmatized

and other barriers to treatment as those not reporting mental health concerns (Hoge et al.,

2004; Menke & Flynn, 2009). In addition, even when depression symptoms are

controlled for, individuals with PTSD symptoms report higher levels of perceived

barriers and placed more importance on these barriers (Ouimette et al., 2011). Therefore,

it is important to continue the efforts to reduce stigma associated with seeking mental

health treatment, especially among servicemembers.

According to the Joint Mental Health Advisory Team-7 report (2011), behavioral

health providers were described as being high in demand and low in supply. They were

also considered to be, among medical specialties, highly active in reaching out to troops

on the front lines. The inclusion of behavioral health care providers embedded within

units has been a way to increase servicemembers well-being (Russel et al., 2014). An

additional way the Department of Defense has attempted to identify and treat mental

health problems early, reduce barriers to seeking mental health treatment, and provide

greater access to care is through Combat/Operation Stress Control teams (Momen,

Strychacz, & Viirre, 2012). The three goals of COSC teams are prevention,

identification, and treatment of combat stress to facilitate long-term mental health and

well-being services (Momen et al., 2012). These teams consist of behavioral health

providers that are deployed to forward areas to provide education, prevention, treatment,

and consultations to servicemembers (Jones et al., 2013). Providing access to behavioral

health care close to the front lines is a way that the military is attempting to address

barriers to care and the prevention and treatment of mental health problems.

Telemental Health

The use of distance management for mental health crisis dates to 1953 when "The

Samaritans Service" offered counseling over the telephone for those in emotional distress

in the U.K. and the Republic of Ireland (San Francisco Suicide Prevention, as cited in

Godleski et al., 2008). In the U.S., the first telephone suicide prevention service, "Call

Bruce," was established in San Francisco in 1963 (San Francisco Suicide Prevention, as

cited in Godleski et al., 2008). The first documentation of TMH in the U.S. was in 1959

at the University of Nebraska, and the first published report documenting remote group

therapy was in 1961 (Wittson, Affleck, & Johnson, 1961). The first VA connection with

TMH occurred in 1968 and was developed by the University of Nebraska between the

Omaha, Lincoln, and Grand Island VA Hospitals (Wittson & Benschoter, 1972). This

connection allowed patients in more rural areas to have access to care, and served as an

educational tool. In 1970, this early telehealth program was utilized for 1,267 hours

during the year, with 68% of use for educational activities, 25% of use for patient care,

and the remaining 7% for miscellaneous purposes. The VA in Bedford, Massachusetts

also started a TMH connection in 1968 with Massachusetts General Hospital (Dwyer,

1973). This format for treatment was far too expensive and unmanageable for

widespread use until the 1990s due to the computer and technology age. Beginning in

1997, the VA has been implementing TMH services throughout the United States at

community-based outpatient clinics (CBOCs) to connect patients with providers at larger

treatment facilities (Godleski et al., 2008). In 2007, the VA utilized videoconferencing

TMH to complete more than 45,000 visits and served over 24,000 patients, with about

5,000 of those visits occurring in patients' homes using videophones and messaging

devices (Godleski et al, 2008).

The rapid development of new technology as it relates to health is transforming

the way care is provided by clinicians, particularly to those in remote locations. Utilizing

technology to provide medical care across vast distances has come to be known as

telemedicine (Girard, 2007). The increase of wounded servicemembers, particularly

those with TBI, has increased the demand for services provided through telemedicine,

including psychiatric interventions and behavioral therapy (Girard, 2007).

Technology required. Research has examined the requirements needed to

effectively and efficiently utilize technology in medical care practice. Physicians testing

the use of iPads within their medical care services to rural and frontier communities

expressed a need for applications (i.e., apps) that are dedicated specifically for medical

care and services. A dedicated app could be designed to store information locally and allow for access of information in the absence of an internet connection, which is important because of inconsistent internet service (Anderson, Henner, & Burkey, 2013). Additionally, physicians reported the need for improved graphics and video to augment education for their patients (Anderson et al., 2013).

Clinical video teleconferencing (CVT) equipment was provided to clinicians at the Puget Sound VA, which consisted of a web camera with an integrated microphone that attached to a computer with internet access. In addition, particular software programs were necessary to provide security and allow CVT calls to take place. Further, CBOCs designated special TMH rooms outfitted with CVT equipment connected to a desktop computer. All communication between clinicians and patients transpired through a secure system that encrypted all exchanged data. Generally, internet bandwidths have been noted to work as low as 350 Kb/sec for individual sessions and 750 Kb/sec for group sessions. A high speed internet connection is required for in-home use, as well as a computer with sufficient memory (512MB RAM) and processing speed (Smucker Barnwell et al., 2012). Obtaining access to the technology required to utilize TMH is a potential barrier, especially in rural and low socioeconomic communities.

Use of telemental health in rural areas. Rural geography poses unique demographic differences and challenges to accessing mental health care. Rural veterans have been found to have a higher likelihood of meeting screening criteria for PTSD, have a greater proportion of persistent post-concussive symptoms related to deployment, and have more problems with alcohol use than urban veterans (Whealin et al., 2014). Several factors reduce access to medical services in remote areas of rural and frontier

communities, such as distance, a limited number of providers, and limited funding

(Anderson et al., 2013; Lambert, Gale, Hartley, Croll, & Hansen, 2015). Additional

obstacles to accessing treatment include an increased amount of time out of school or

work, limited transportation options, and difficulties finding childcare while at

appointments (Shealy, Davidson, Jones, Lopez, & Arellano, 2015). Specialists, such as

mental health providers, are extremely rare in rural communities, prohibiting appropriate

care from being received (Shealy et al, 2015), with mental health services predominately

rendered by primary care physicians (Anderson et al., 2013). The mental health quality

of life in rural veterans has been rated lower than those living in urban communities

(Whealin et al., 2014). In order to provide care, some communities have started to

implement the use of technology to provide specialty medical care services. The use of

TMH services in rural areas has reduced travel barriers on behalf of both providers and

patients, and has the potential to expand much needed services to rural communities

(Lambert et al., 2013). Connecting rural communities with TMH services may continue

to increase the access this population has to receiving high quality specialty mental health

services.

     Use of telemental health in the American Indian population. There is serious

concern for mental health issues among American Indian veterans. Data from the

American Indian Vietnam Veterans Project (AIVVP) and the National Vietnam Veterans

Readjustment Study were examined for prevalence rates of PTSD among male Vietnam

veterans. The study found that American Indian and Alaska Native veterans in the

western U.S. have higher rates of PTSD, along with comorbid psychiatric conditions,

than their White counterparts (Beals et al., 2002). Obtaining effective mental health care

has proven to be a difficult challenge in Native communities (Duran et al., 2005) due to

reservation and trust lands being primarily situated in rural and isolated areas with the

average income being below the poverty level (Duran et al., 2005). In accordance with

rural communities, there is limited availability of medical specialists in Native

communities (Fannin & Barnes, 2007). Some veterans in these communities would have

to travel four hours to the nearest VA facility prior to the implementation of TMH clinics.

In order to address this disparity, the VA implemented a number of TMH clinics to

provide services for American Indians with mental health conditions. This was in

response to research conducted by the AIVVP that documented difficulties Native

veterans incurred in accessing mental health services (Brooks, Manson, Bair, Dailey, &

Shore, 2012).

     There are additional barriers that are unique to Native populations. For instance,

in order for TMH services to be widely accepted and utilized in Native communities, the

community must perceive a need for mental health services, receive supportive feedback

from patients and staff, and have an influential individual in the role of the telehealth

outreach worker (TOW). The TOW is typically a veteran and member of the tribe that

serves as a liaison between the tribe and the telehealth clinic. The level of trust the

community has in the TOW can greatly impact the community's acceptance of the clinic

(Brooks et al., 2012). Despite a clinic being established within the Tribal community,

transportation was still noted as a barrier, which strengthens the case for home-based

TMH services (Brooks et al., 2012). The VHA has made great strides in broadening the

scope of mental health treatment accessibility to the American Indian population once the

need to improve access to care was identified.

Implementation of telemental health in the VHA. Telemedicine is playing a key role within the VA system by allowing access to care to those who would otherwise go without. Providers are now able to monitor the health of veterans who are unable to attend regular medical appointments because of financial reasons, geography, or disability (Girard, 2007). Veterans who once were left untreated are now receiving quality care in their homes and communities (Girard, 2007). There is research to suggest that although TMH has been disseminated in VHA, much work and expansion of new and innovative means of providing this type of care is needed. For example, Bush et al. (2012) noted that servicemembers emphasized an interest in receiving mental health care services through interactive apps on smartphones to assist with stress management, self-assessment exercises, and communicating live with therapists, all while being assured of confidentiality. Additionally, 59% of respondents reported being willing to download health-related apps.

The VA Maryland Health Care System implemented a TMH program at rural clinics in 2008 that provided evidence-based psychotherapy, psychiatry, and other services. Before this, few veterans were able to engage in treatment due to the limited number of providers available. Thus, implementation of the program allowed patients to receive necessary services that they were otherwise unable to obtain (Koch, 2012). The staff was required to complete an orientation program that consisted of online courses, as well as didactic training on equipment operation and troubleshooting. Online trainings were completed through the VA Rocky Mountain Telehealth Training Center and reviewed topics including operation of equipment, clinical considerations, and safety procedures (Smucker Barnwell et al., 2012). Additionally, the program coordinator held

regular sessions for non-staff members to inform them about the services provided,

referral procedures, response plans for crises, and a demonstration of how the treatment

would work (Koch, 2012). Another TMH service program provided through the Puget

Sound VA provides care for veterans in Washington, Oregon, and Alaska (Smucker

Barnwell et al., 2012). Veterans who were referred to this program in the 2010 fiscal

year had an average age of 52.6 years, with 39.2% having a diagnosis of PTSD and

31.1% having depressive disorder diagnosis (Smucker Barnwell et al., 2012).

Barriers for TMH therapy exist despite the empirical evidence supporting its use.

Clinicians who are accustomed to in-person sessions and are not familiar with TMH have

been reluctant to provide services in this way. An informal assessment of VA Maryland

Health Care System's therapists identified an expressed concern on the part of some

clinicians that TMH is a "passing trend and a modality that patients will not be willing to

accept" (Koch, 2012, p. 204). Mental health providers reported barriers to implementing

TMH services, such as uncertainty regarding treatment effectiveness, viewing the use of

technology as inconvenient, and confusion regarding reimbursement for services

(Brooks, Turvey, & Augusterfer, 2013). Expressions such as these emphasize the need

for properly trained clinicians and education for providers on the benefits of utilizing

TMH for veterans.

Ethical and privacy barriers for telemental health. Understanding the barriers

for TMH, particularly with regard to ethics and privacy, is important in order to address

the potential concerns of clinicians who may be skeptical of providing mental health

treatment remotely. Although the use of technology shows great promise for allowing

those in rural, frontier, and underserved areas to receive adequate mental health care,

continued research is needed (Anderson et al., 2013), particularly in regard to patient

privacy and other obstacles. A major barrier for implementing TMH programs is regular

maintenance of equipment, which can tax the limited resources of clinics (Smucker

Barnwell et al., 2012). Three additional prominent barriers to telemedicine interventions

among the veteran population are difficulties with patient adherence to the technology,

keeping up-to-date with emerging technology, and having appropriately trained personnel

to provide treatment through telemedicine (Hill et al., 2010). Further, strategies for

ensuring patients are capable of using the required technology in their homes are

necessary for successful treatment (Hill et al., 2010).

Ethically, there are concerns regarding implementing appropriate procedures to

guarantee that patients' protected information is secure (Hill et al., 2010). Maintaining

compliance with the Health Insurance Portability and Accountability Act of 1996

(HIPAA) is a requirement that is must be maintained, even when providing care

remotely. The use of TMH presents new challenges, as patient information is being

transmitted in new ways (Kramer, Kinn, & Mishkind, 2015). As the prevalence of TMH

continues to grow, it is important for ethical and privacy guidelines to be updated to

outline the standard of care by which providers are required to abide.

Efficacy of telemental health treatment. The use of telemedicine within the VA

system has been reducing the number of patient hospitalizations, visits to the emergency

room, and lengths of stay when hospitalized (Darkins, 2006). During the 2010 fiscal

year, the Puget Sound VA's TMH service provided 507 sessions between VA medical

centers, CBOCs, and veterans' homes. These sessions saved over 30,000 miles in travel

and $13,000 in related costs, while maintaining a greater than 95% participant

satisfaction rate (Barnwell et al., 2012).

A retrospective study by Grady and Melcer (2005) found higher rates of full

compliance with treatment among those using TMH care (89%) compared with those

receiving in-person treatment (79%). Additionally, participants' Global Assessment of

Functioning (GAF) had an average seven-point increase for those utilizing TMH care

verses those obtaining in-person sessions. The advantages of using telemedicine with

veterans have been noted across 19 studies, which include the ability to continually

monitor patients, greater access to health care professionals, improved efficiency between

patients and providers, easy access to patients' medical records and other electronically-

based information pertinent to patients' treatment needs, and provision for facilitation of

integrated and collaborative treatment (Hill et al., 2010).

Underutilization of VA Services

Kim et al. (2011) found that only 0.3% of servicemembers seeking behavioral

care services from a mental health professional were utilizing the VA health facilities or

Vet Centers. Another study noted that the VA provides health-related services to about

5.5 million veterans every year, which encompasses approximately one fifth of all

veterans (McCarthy et al., 2012). This data may suggest that VA organizations are being

underutilized for the treatment of mental health care concerns. The VA system was

designed to service older male veterans, and the majority of those accessing services

through the VA served in Vietnam with an average age of approximately 70 years (Liu et

al., 2010). This highlights concerns related to the current usage among female veterans

who may not feel welcome (Ouimette et al., 2011; Vogt et al., 2006; Washington, 2007),

as well as younger veterans from the OIF/OEF campaigns. The younger the age of the

individual, the greater his or her perception was of not fitting into the VA system

(Ouimette et al., 2011). Women's nonuse of VA health services is of particular concern

given that they are the fastest growing population among veterans today. With women

comprising 15% of active duty members and 20% of new recruits, the number of female

veterans is expected to continue to grow (Washington, Yano, Simon, & Sun, 2006).

Indeed, females encompass the fastest growing subset within the veteran population

(Meehan, 2006), and understanding their unique health care needs is important for the

VHA to provide appropriate care. Of female veterans, 23.4% identified the VHA as their

primary source of accessing health care in comparison to 9.6% of male veterans. Female

veterans are more likely to be younger, single, racial minorities, and screen positive for

depression and PTSD. Additionally, those who seek services from the VA are more

likely to have a lower income, be unemployed, have combat experience, be diagnosed

with a disability, and report poorer mental health functioning than their non-VA using

female veteran counterparts. Differences in utilization of mental health care services

among male and female veterans have not been found, and the most commonly endorsed

barrier to using mental health care were the high costs of treatment outside of the VA and

the perception of weakness (Tsai, Mota, & Piertrzak, 2015). Using an alternative method

of treatment could be beneficial in reaching out to the female and younger populations.

Utilizing technology in its various forms may be an effective method for targeting and

reaching out to this underserved population of veterans.

　　　　One of the many barriers noted in using the VA system is accessibility (Britt et

al., 2008). This can take many forms, one of which is being able to navigate the system.

Ouimette and colleagues (2011) found that logistical barriers, especially among minority men, prevented utilization of the services provided by the VA. Many, including active duty servicemembers, military commanders, and servicemembers' families, prefer treatment from military mental health providers, as they can better understand their issues and how they interface with military culture in regard to both social and operations matters in contrast to a civilian provider (Grady & Melcer, 2005). Thus, those living in remote locations can travel numerous hours to obtain mental health care services at a military facility (Grady & Melcer, 2005), which is not always feasible. One possible solution to achieve greater utilization of the VA system among veterans is to provide services that have a far reaching capacity, as a predominate reason for seeking treatment outside of the VA system is proximity, accessibility to services, and difficulty scheduling appointments (Kim et al., 2011; Sayer, Friedemann-Sanchez et al., 2009).

Utilizing technology in mental health treatment, such as virtual reality, computerized therapy, and video teleconferencing, can help minimize both the logistical barriers as well as stigma related to receiving care (Wilson, Onorati, Mishkind, Reger, & Gahm, 2008). The use of TMH services would allow individuals having difficulty getting to the VA for appointments the opportunity to be treated through the use of technology from the comforts of their homes. It is believed that the use of such technology would be amenable with the military population due to the transient nature of their line of work (Wilson et al., 2008).

Technology use Among Younger Adults (OIF/OEF/OND Veterans)

Wilson et al. (2008) found that the majority of servicemembers have the internet and broadband technology available in their homes that is required for TMH use. In

addition, they identified that most were comfortable with the required technological system and would be open to utilizing technology-based mental health models. One of the more significant findings of this study that has widespread implications is that 33% of those who would not speak with a mental health professional in person were willing to try technology-based therapy. Up to one third of those unwilling to seek in-person treatment have become more open to trying mental health care through technology, which is an important finding for providing service to those who could benefit. Being able to receive treatment in the privacy and comfort of their own homes may also reduce many of the initial fears and anxieties this population has concerning mental health treatment. Further, the increased prevalence of smartphone technology provides an additional approach for using technology with behavioral health. It is possible that apps can be designed for specialized treatment that can be monitored by mental health professionals, and has the potential to reduce barriers to treatment (Luxton, McCann, Bush, Mishkind, & Reger, 2011).

It was estimated that in the year 2015, there would be over 288 million people accessing the internet in the United States, with 2.8 billion users worldwide. Further estimates surmise that over 95% of American households will have personal computers, 196 million will be connected wirelessly, and over 330 million cellular telephones will be in use. One of the major driving forces for increased internet use has been attributed to cellular technologies that allow increasing time for connection to the internet, as well as accessibility from a variety of locations. Smartphones may surpass personal computers for the leading device to access the internet sometime after 2015 (eTForecast, 2013). A study conducted by Bush and colleagues (2012) assessed personal technology use both at

home and while deployed among servicemembers. The mean age of participants was

28.3 years (SD = 7.8), with 32 of the 331 total participants being age 40 or older. Rates

of personal technology use by servicemembers while at home mimicked that of the

civilian population with high rates of laptop computer owners who utilize those devices

for internet use such as e-mail, instant messaging, social networking, watching videos,

and listening to music. Smartphones are being used by servicemembers at home for text

messaging and voice communication, along with downloading and using apps.

Technology use while deployed differed slightly from home use primarily due to

restrictions in availability, opportunity to use devices, connectivity, and military warzone

regulations. Frequent laptop computer usage was reported for similar activities as being

at home; however, the use of mobile phones was considerably lower due to availability

with a greater reliance on land-line phones.

Five-Factor Model

The Five-Factor Model (FFM) has been in development since the early 1900s and

started as a two-factor model of intellect and will (Webb, 1915). This model was later

expanded into three- and four-factor models (Cattell, 1933; Garnett, 1919), which Fiske

(1949) then developed into the essential foundation for the FFM that is known today.

Factorial techniques were applied to measures of personality almost immediately after

they were developed. Fiske (1949) identified five factors in three separate factor

analyses. The first analysis included the combined judgments by three trained and

experienced psychologists based upon extensive materials on each subject. The second

was based on the median ratings of three teammates who had spent a week with a subject.

The subjects in the study rated themselves for the third factor analysis. The rating scale

used in Fiske's study included 22 items that were adapted from Cattell. Four factors recurred throughout each of the three factor analyses including *social adaptability*, *emotional control*, *conformity*, and *inquiring intellect*. Two factors, from teammate ratings and self-ratings, embodied a common foundation called *confident self-expression*.

The FFM was later developed by Tupes and Christal (1961/1992); however, it was largely ignored until nearly 20 years later, and then quickly grew to be widely accepted (McCrae & Costa, 2013). Throughout the following decades, many researchers supported the FFM (Costa & McCrae, 1992b; Goldberg, 1992), and it is now widely considered the "default model of personality structure" (McCrae & Costa, 2013, p. 15), influencing several fields of study. Several FFM measures have been developed with the five fundamental factors: *conscientiousness*, *extroversion*, *neuroticism*, *openness*, and *agreeableness*.

Conscientiousness is described as the degree or level of organization, determination, and motivation in goal directed behavior (Devaraj, Easley, and Crant, 2008). It characterizes individuals who work diligently, are purposeful, and have a sense of discipline rather than being more laid-back, lacking ambition, and having a low willpower (McCrae & Costa, 2013). Extraversion is described as being sociable, ambitious, and outwardly expressive (Devaraj et al., 2008). This trait contrasts traits such as being affectionate, gregarious, and cheery with being standoffish, private, and solemn (McCrae & Costa, 2013). Having emotional instability that is illustrated by insecurity, antagonism, and anxiousness is encompassed in neuroticism (Devaraj et al., 2008). Neuroticism has the traits of being sad and scared at the high end of the spectrum, compared with the opposite pole defined by being calm and stable (McCrae & Costa,

2013). Openness relates to an individual's thought flexibility and acceptance of new

ideas (Devearaj et al., 2008). Openness describes those who have an imagination, are

curious, and have the inclination to explore, as opposed to those who tend to be more

rigid, pragmatic, and tend to be more traditional (McCrae & Costa, 2013). Having an

interpersonal point of reference that is compassionate describes agreeableness (Devaraj et

al., 2008). This trait contrasts having generousity, honesty, and modesty with

characteristics such as self-centeredness, aggression, and self-importance (McCrae &

Costa, 2013).

The FFM helps in specifying the traits a personality measure should assess, and

factors emerging from an analysis of the traits are what are considered the basic

dimensions of personality. Four positions of reasoning outlined by Costa and McCrae

(1992a) provide support the five factors are representative of the basic dimensions of

personality. This support stems from evidence gleaned from longitudinal as well as

cross-observer studies that have demonstrated all five factors are enduring traits that are

noticeable in behavioral patterns. In addition, traits that are related to each of the five

factors are evident in various systems of personality as well as in the innate language

used to describe personality, and each of the factors are found across age, gender, race,

and different languages. Further, there is evidence that each of the five factors are

hereditary, which suggests there is a biological component to them. A study specifically

investigating personality factors across a variety of languages found there is, in fact, a

common structure of personality across humans (McCrae & Costa, 1997). Overall, the

FFM has been noted to be the most useful tool in categorization of personality in research

(Barrick, Mount, & Judge, 2001).

In addition to personality, an individual's cognition or thinking style is one characteristic that has the potential to affect the acceptance of technology (Devaraj et al., 2008). Another difference among individuals that appears to have an impact on the perceived usefulness and ease of use of technology is education (Agarwal & Prasad, 1999). The role that personality plays in acceptance to technology can be best determined through analyzing the technology acceptance model (TAM) and its theoretical foundation, which comes out of the theory of reasoned action (TRA). The TRA views personality as a variable that is external and is only able to affect behavior indirectly. Personality is seen as an outside variable in this model, which links behavior and external variables. In particular, personality is theorized to lead to beliefs related to behavior. When this logic is applied to TAM, arguments founded on the TRA propose that personality factors would be associated with specific beliefs about the perceived usefulness of a particular technology (Devaraj et al., 2008). Psychologists who study personality have generally agreed with the idea that personality is connected to an individual's behavior by way of the cognitive process, which establishes his or her motivation to take part in a particular action (Barrick, Stewart, & Piotrowski, 2002).

A study designed to determine the relationship between the five factors of personality and the perceived usefulness of technology and the intention to use it yielded significant findings. Devaraj and colleagues (2008) found that participants categorized by conscientiousness, extraversion, openness, and agreeableness were found to perceive the usefulness of technology positively, whereas there was a negative correlation for those in the neuroticism category. Additionally, those categorized as conscientious or agreeable also had higher intentions to use that technology. These findings suggest that

individuals in the conscientiousness and agreeableness categories are more likely to find technology useful, but also have greater intentions for utilization.

Summary

Finding TMH to be an effective mode of treatment that can be provided through the VA and would be accepted especially among the younger and female veteran populations can have three major impacts. First, TMH treatments could be a more acceptable means of treatment for those who perceive the greatest stigma and avoid seeking treatment. Second, TMH treatment could increase the number of veterans utilizing the VA services. Third, TMH may be more cost-effective for both providers and patients.

Chapter 3: Hypotheses

The present study was designed to identify factors that would predict favorable attitudes toward participation in TMH treatment, as well as to gather information that can improve access to and quality of mental health care treatment for veterans.

Hypothesis 1. It was hypothesized that younger age and higher education level would predict participants' experiences with technology (as measured by the Soldier Technology Survey [STS]).

Hypothesis 2. It was hypothesized that younger age and higher education level would predict willingness to utilize TMH treatment (as measured by demographic information questionnaire).

Hypothesis 3. It was hypothesized that veterans who endorse having a current need to get help for mental health problems would report significantly more favorable attitudes toward TMH treatment as compared to those who do not have a current need (as measured by responses to demographic information questionnaire).

Hypothesis 4. It was hypothesized that veterans with greater technology experience (as measured by the STS) would report being significantly more open to utilizing TMH treatment to access mental health care (as measured by responses to demographic information questionnaire).

Hypothesis 5. It was hypothesized that veterans who endorse having a current need to get help for mental health problems would be more likely to utilize mental health services through the VA if they were able to receive treatment via TMH, as compared to participants reporting no current need for help (as measured by responses to demographic information questionnaire).

Hypothesis 6. Individuals endorsing greater barriers to seeking mental health treatment (as measured by the Barriers to Help Seeking Scale [BHSS]) were hypothesized to have significantly more favorable attitudes towards TMH care (as measured by responses to demographic information questionnaire) than individuals who endorse no barriers to seeking treatment.

Hypothesis 7. It was hypothesized that individuals whose highest mean scores fall in the domains of conscientiousness and/or agreeableness categories (as measured by the Five-Factor Model Rating Form [FFMRF]) would report significantly favorable attitudes towards TMH, in comparison to those whose highest means scores are in the domains of extraversion, neuroticism, and/or openness (as measured by the FFMRF).

Chapter 4: Methodology

Overview

  Approval for the current qualitative survey study was granted through

Philadelphia College of Osteopathic Medicine's Institutional Review Board (IRB). The

Vice President of Research for the Student Veterans of America was contacted to inquire

if IRB approval needed to be granted to recruit participants through their organization.

No IRB approval was required, and permission was given to proceed with recruitment.

Design and Design Justification

  This study utilized a cross-sectional, correlational survey design. This particular

design was chosen because survey instruments were administered to a group of

participants during a brief duration. Comparisons were made between groups to

determine the extent to which multiple variables were related. This method does not

determine whether one or more variables cause changes in one or more other variables

(Privitera, 2014).

Participants

  This study was comprised of U.S. veterans from all branches of military service,

including the Army, Air Force, Navy, Marine Corps, and Coast Guard. A power analysis

was performed for a sample size estimation on each of the hypotheses. The hypothesis

requiring the largest number of needed participants was utilized for the sample size

estimation. A priori analysis determined that a medium effect, with $p = 0.80$, and $\alpha = .05$,

required a projected sample size for this effect size (GPower 3.1) of a minimum of 102

participants (n = 102; H:3).

Inclusion criteria. Inclusion criteria for participants in this study included veterans of U.S. military service with a minimum age of 18. Veterans from all branches of the military including the Army, Air Force, Navy, Marine Corps, and Coast Guard were included in this study. Participants needed to have sufficient English reading and comprehension skills to be able to read, understand, and answer the questions in the survey. Additionally, access to e-mail and internet were required to participate.

Exclusion criteria. Individuals who had not earned veteran status, meaning they had not previously served in the U.S. military or who were still in active duty, were excluded, as were those under the age of 18. Individuals who did not have adequate English reading and comprehension skills to be able to complete the survey were excluded. Those who did not have access to e-mail or the internet were also unable to participate in the study.

Recruitment/Procedures

All surveys and measures were integrated into an online format and uploaded to the SurveyMonkey.com website. Participants were recruited for this study through e-mail requests, and were offered a donation to their veteran's organization as an incentive to participate. More specifically, an e-mail was sent to presidents and faculty advisors of Student Veterans of America (SVA) chapters across the country that were listed on the national organizations website. The e-mail included a brief explanation of the study, informed consent, a link to the survey to participate in the study, and a request to forward the information to the members of their chapters. At the completion of all measures for the online survey, each participant had the opportunity to provide his or her SVA chapter information to receive a donation to their general fund.

Veteran's organizations in the greater Philadelphia, Pennsylvania area, specifically local chapters of the Veterans of Foreign Wars, American Legion, and Am Vets, were also contacted and informed about this study. A formal letter explaining the purpose of the study was mailed or e-mailed to the head of each organization, depending on the contact information provided on their websites. The letter stated that a follow-up telephone call would be placed to discuss the possibility of obtaining access to members of their organization. During each telephone call, more details were given about the study, including the assurance of confidentiality of each member's responses. For the veteran's chapters where a contact address or e-mail address was not provided, an initial telephone call was placed as the first method of contact.

Mailing addresses of all members for each of the veteran's organization chapters that were willing to participate were obtained. Packets including the survey were mailed. Completing the measures on their own time and in the comfort of their home was thought to be the best method, especially given the nature of the topic of mental health. There is a higher rate of perceived stigma to mental health, as previously noted, and completing the measures anonymously was meant to provide each participant with the maximum amount of privacy. In a study designed to assess the difference between recently deployed servicemembers' responses on an anonymous health survey and the standardized PDHRA, reports of both depression and PTSD were between two to four times higher on the anonymous surveys. In addition, 20% of servicemembers screening for depression or PTSD reported feeling more comfortable answering honestly on the anonymous survey as compared through the regular screening process (Warner et al., 2011).

Once contact information was obtained, veterans received a packet in the mail

that included a letter of explanation (similar to the original letter sent to the head of each

organization), an informed consent form, and each of the measures included in the

survey. Upon completion, participants were instructed to place all items into the

addressed and stamped envelope that was provided in the packet. On this envelope, the

sending and return addresses were the same, as it placed as an added measure of

participant confidentiality. As an incentive to participate in the study, each mailing

packet contained an index card to be filled out with their veteran's organization chapter

information. The introductory letter explained that for each packet received, a small

donation would be made to their chapter's general fund. A sample total of 100 paper

copies of the survey were mailed out to members of veteran's organizations from

addresses collected following the procedures outlined. No surveys were returned out of

the initial 100 that were mailed, giving a 0% survey return rate. Due to the poor rate of

return, remaining recruitment efforts were solely focused on electronic responses through

SVA chapters.

Measures

Technology. Participants completed the Soldier Technology Survey (STS),

which was developed by a five-member panel of experts (Wilson et al., 2008). Each

member on this panel had an extensive background and experience working with military

personnel, as well as with technology-based mental health services. The STS evaluates

use of personal technologies regarding computers and internet, telephones and

smartphones, and other mobile or technological devices. This measure also collected

valuable demographic information. The STS does not have psychometric data, as it is a

tool used for gathering information and assessing technology use in a variety of environments.

Demographic Information Questionnaire. The Demographic Information Questionnaire (see Appendix) was specifically designed for the purposes of this study to gather general demographic information not assessed in the STS. Questions regarding participants' mental health history, current mental health status, and health information (vision, hearing, motor) were included in order to assess for the minimum functioning needed to utilize TMH. Additionally, questions related to technology knowledge and skills were also included.

Personality traits. Participants' personalities were assessed in relation to the five-factor model using the Five-Factor Model Rating Form (FFMRF). This is a one-page form comprised of 30 items that represent each of the 30 facets of the FFM, which are organized to each of the five domains. Each of the 30 items are rated on a Likert scale ranging from 1 to 5, where 1 = *extremely low*, 2 = *low*, 3 = *neither high nor low*, 4 = *high*, and 5 = *extremely high*. Scores for each of the five factors range between 5 and 30. This measure was assessed for both convergent and discriminant validity across five studies (Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006). The FFMRF was also compared to the Revised NEO Personality Inventory (NEO PI-R), which is the most frequently used measure of the FFM, on four of the studies as a criterion measure (Mullins-Sweatt et al., 2006). Domain and facet scales of the FFMRF were similar across each of the samples with coefficient alphas for domain scales ranging from acceptable to good. Specifically, measures for neuroticism had a range of α = .62 - .73, extraversion from α = .60 - .76, openness from α = .51 - .69, agreeableness from α = .56 - .72, and

conscientiousness from α = .73 - .78. Items on the FFMRF significantly correlated with each of the other items in their factor and did not correlate with items from the other factors. Morey (2003) recommended the averages to fall between .15 and .30 and to stay below .50 "unless the scale is quite brief and highly specific in nature" (p. 396). The ranges for neuroticism were from .09 - .41, extraversion from -.01 - .45, openness from .08 - .33, agreeableness from .12 - .40, and conscientiousness from .22 - .50 (Mullins-Sweatt et al., 2006).

Convergent as well as discriminate validity with the NEO PI-R (Costa & McCrae, 1992) were found to be good across all four studies in respect to each of the domains. The domain of openness was found to be not as strong as the other domains as it was .37 when it was averaged across each of the four studies. The facet items on the FFMRF were significantly correlated with those of the NEO PI-R within each domain, and generally had insignificant correlations with facets from other domains and ranged from .37 ($p < .001$) for the six items on openness, to .50 ($p < .001$) for extroversion. The FFMRF confirmed good to acceptable discriminant and convergent validity when compared to the NEO PI-R for each of the factors including neuroticism (.47), extraversion (.78), openness (.34), agreeableness (.57), and conscientiousness (.31). Overall, results of the four studies provided support for the use of the FFMRF as a brief measure of the FFM (Mullins-Sweatt et al., 2006). The overall reliability of the FFMRF for this study was found to be acceptable (Cronbach's α = .79). Reliability for each of the five factors was also analyzed and found Cronbach's α = .85 for neuroticism, .75 for extraversion, .72 for openness, .69 for agreeableness, and .85 for conscientiousness.

Barriers to treatment. The Barriers to Help Seeking Scale (BHSS) was used to assess obstacles that prohibit participants from seeking health treatment (Mansfield, Addis, & Courtenay, 2005). Although this scale was designed and validated for males, it was used with all participants in this study for consistency and because no similar scale designed for women exists to the author's knowledge. Items of the BHSS are measured through the use of a 5-point Likert scale with lower numbers indicating there is not much concern for the item as a barrier to care (0= *not at all*, 4 = *very much*). Internal consistency for the BHSS for this study sample ranged from α = 0.79 - 0.93. As this scale was only validated for males, statistics for women on the overall BHSS scale were calculated and found to be highly reliable (Cronbach's α = .92).

Chapter 5: Results

A total of 223 survey responses were collected online at the conclusion of data collection. Several participants (n = 51) completed demographic and technology use information; however, they did not answer critical items in regard to the hypotheses of this study and were, therefore, excluded. Additionally, participants who were currently serving in the military on active duty status (n = 11) were also excluded, leaving a total of 161 participants (n= 161) that were included in this analysis.

Descriptively, 14% of participants were National Guard or Reservists, and 86% had previously served in the military and had been discharged or retired. In regard to age, 27% were between the ages of 18-29, and 73% were 30 and older. Demographically, 79% of the participants were male and 21% were female. There were approximately twice as many females in this sample as there are in the overall general veteran population (U.S. Department of Veterans Affairs, 2016). The majority of participants (76%) self-identified as White/Caucasian, 6% identified as Hispanic/Latino, 6% identified as Black/African American, 3% identified as Asian/Pacific Islander, 8% identified as Other/Mixed, and 1% identified as American Indian/Alaska Native. Most participants (99%) had completed some college, and 63% earned an Associate's degree or higher. In relation to marital status, 29% were never married, 48% were currently married, 18% were divorced, 2% were legally separated, 2% were widowed, and one participant did not answer this question. In regard to branch of military service, 44% of participants served in the Army, 20% in the Marine Corps, 17% in the Navy, 16% in the Air Force, and 3% in the Coast Guard. Regarding participants' highest rank achieved in their military service, 60% were between E5-E9, 30% were between E1-E4, 6% were

between O1-O5, 2% were in the ranks between W1-CS5, 1% were between O6-O-10, and one participant did not answer this question. Most participants (72%) had deployed at some point during their career, 66% deployed to OIF/OND/OEF, and 19% had deployed two or more separate conflicts. Almost half (45%) of those who served in the Iraq and/or Afghanistan theaters were deployed two or more times, and 7% reported five or more deployments. Other wars, conflicts, or peace keeping missions to which participants had been deployed included Operation Desert Storm, Operation Desert Thunder, Operation Southern Watch, Columbia, Beirut, Lebanon, Kosovo, Bosnia, Somalia, Haiti, Japan, Vietnam, Panama, and Korea.

The sample population in this study is considered to be generally representative of the student veteran organization from which participants were recruited. In regard to branch of military service, 44% in this study served in the Army compared to 43.65% in the population, 19% served in the Marine Corps compared to 18.4% in the population, 18% served in the Navy compared to 18.49% in the population, 17% served in the Air Force compared to 18.04% in the population, and 2% served in the Coast Guard compared to 1.78% in the population. Participants in this study who were enlisted constituted 90% of the survey sample as compared to 90.35% in the population, 2% were warrant officers compared to 1.20% in the population, and 8% were officers compared to 8.45% in the population (Cate & Davis, 2016).

To test hypothesis 1, a loglinear analysis was conducted to determine whether a relationship was present between younger age and higher education on technology experience. Participants reported their age based on four categories: 18-24, 25-29, 30-39, and 40 and older. A frequency and descriptive analysis was run and the distribution of

participants was examined. It was determined appropriate to combine age groups to have

two categories in order to increase the number of participants in each group. The age

groups used for the analysis were 18-29, and 30 and older. Participants had six education

level options from which to choose. Based upon the frequency and descriptive analysis,

categories were combined into two options. The first included participants who had a

GED, high school diploma, some college, or an Associate's or technical degree. The

second group included those who earned a Bachelor's level degree or higher. Regarding

technology experience, participants rated their current level of computer knowledge as

novice/beginner, intermediate moderate, advanced amateur, or professional (e.g.

programmer). Results of the three-way loglinear analysis produced a final model that did

not retain all effects. The likelihood ratio of this model with all effects retained was χ^2

$(6) = 2.529$, $p = .865$. This indicated that the highest-order interaction (age $\times$ education $\times$

technology experience) was not significant, χ^2 $(3) = .554$, $p = .907$. Therefore, the

analysis seems to reveal that younger age and higher education do not predict technology

experience.

A loglinear analysis was also used for hypothesis 2, to examine whether younger

age and higher education would predict favorable attitudes towards TMH treatment. Age

and education categories were determined as previously described. Participants were

asked to rank order their preference for obtaining mental health care out of six treatment

options. If one of the top two choices for a participant was obtaining treatment remotely,

they were considered to have higher favorable attitude towards TMH treatment. All other

participants who did not have a remote treatment option ranked in their top two were

considered to have lower favorable attitude towards TMH treatment. Results of the

three-way loglinear analysis produced a final model that did not retain all effects. The

likelihood ratio of this model with all effects was χ^2 (4) = 1.763, p = .779. This indicated

that the highest-order interaction (age × education × attitudes towards TMH) was not

significant, χ^2 (1) = .018, p = .892. Therefore, the analysis seems to reveal that younger

age and higher education do not predict higher favorable attitudes towards TMH

treatment.

   To test hypothesis 3, an independent-means t-test was conducted to determine

whether veterans endorsing a current need to get help for mental health problems would

have more favorable attitudes towards TMH treatment than those who do not perceive a

current need. Participants provided a 5-point Likert scale response to questions regarding

their current need for mental or emotional help, where 0 indicated no need and 4

indicating a high need. Favorable attitudes towards the use of TMH treatment was

determined as previously described. Veterans expressing a favorable attitude toward

TMH treatment (M = 1.13, SD = 1.51) and veterans not expressing a favorable attitude

towards TMH treatment (M = .72, SD = 1.22) approached significance (t(158.6) =

1.91, p = .058). This analysis suggests that individuals with more favorable TMH

attitudes also endorsed having a higher current need of help for mental health problems

than those with less favorable TMH attitudes.

   A Pearson's chi-square test was conducted to test hypothesis 4. Specifically, the

analysis examined whether veterans with greater technology experience had higher

favorable attitudes towards TMH treatment, as determined by the methods previously

described. Assumptions of the chi-square test were not met (novice/beginner computer

skills and favorable attitudes toward TMH), therefore, the there was a loss of statistical

power. No significant association between technology experience and attitudes toward

TMH treatment were found (χ^2 (3) = 5.671, p = .129). When the two higher technology

groups were combined (professional and advanced amateur) and the two lower

technology groups were combined (novice/beginner and intermediate moderate), the odds

ratio indicated that those with greater technology skills were only .824 times more likely

to have high favorability towards TMH than those with lower technology skills.

Hypothesis 5 was tested using a Pearson's chi-square test to determine whether a

relationship was present between veterans having a current need of help for mental or

emotional problems and being more likely to utilize services through the VA if they were

able to receive TMH treatment, in comparison to those who do not have a current need of

help. To determine whether veterans were more likely to utilize services through the VA

if TMH was an option, participants were asked to rank order their preference for

obtaining mental health care out of six treatment options. If one of the top two choices

for a participant was obtaining treatment through the VA utilizing TMH treatment, he or

she was considered to be more likely to utilize the VA if telehealth services were

available than those participants who did not have that option ranked as one of their top

two choices. Participants provided a 5-point Likert scale response to questions regarding

their current need for mental or emotional help, where 0 indicated no need and 4

indicated a high need. Participants who responded with a 3 or 4 on either of the questions

were considered to have a high current need of help for mental health problems, and

those responding with a 2, 1, or 0 were considered to have no current need of help for

mental health problems. An insignificant association was found between participants

with a current need for mental or emotional help and seeking services through the VA

with TMH as an option (χ^2 (1) = .957, p = .328). The odds ratio indicated that veterans

needing help for mental or emotional problems were only 1.55 times more likely to

utilize the VA for services with TMH as an option.

To test hypothesis 6, an independent means t-test was conducted in order to

determine whether there was a relationship between favorable attitudes towards TMH

treatment (a categorical variable) and barriers to seeking mental health treatment

measured by the BHSS (a continuous variable). The variables were barriers to seeking

mental health treatment (measured by the BHSS) and favorable attitudes towards TMH

treatment. The BHSS consists of five factors, with a total of 31 items being assessed.

Participants rated each item using a Likert scale, where 0 = *no barrier*, and 4 = *very*

much a barrier. Items were added to determine the participants' total scores for each

factor. The factors included need for control and self-reliance, minimizing problem and

resignation, concrete barriers and distrust of caregivers, privacy, and emotional control.

A series of independent means t-tests were utilized to examine whether there were

significant differences between males and females on each of the BHSS scales. The only

significant difference was found on factor 4 (privacy; $t(159)$ = -2.16, p = .032). It is

important to note that were fewer females than males in the study, which may have

impacted findings. Favorable attitudes toward TMH treatment were determined by the

methods previously described. An independent means t-test was conducted for each of

the five factors to determine which barriers were most salient to the veteran population

with regard to higher favorable attitudes towards TMH treatment.

Veterans expressing a favorable attitude towards TMH treatment (M = 7.45, SD =

5.57) and veterans not expressing a favorable attitude towards TMH treatment (M = 5.59,

SD = 4.88) differed significantly on factor 3 (concrete barriers and distrust of care givers;

t(159) = 2.29, *p* > .05). Veterans expressing a favorable attitude toward TMH treatment

(*M* = 18.53, *SD* = 8.84) and veterans not expressing a favorable attitude towards TMH

treatment (*M* = 18.39, *SD* = 8.79) approached significance on factor 1 (need for control

and self-reliance; *t*(159) = 1.65, *p* = .102). Veterans expressing a favorable attitude

toward TMH treatment (*M* = 12.70, *SD* = 6.43) and veterans not expressing a favorable

attitude towards TMH treatment (*M* = 11.57, *SD* = 6.70) did not differ significantly on

factor 2 (minimizing problem and resignation; *t*(159) = 1.09 *p* = .277). Veterans

expressing a favorable attitude toward TMH treatment (*M* = 8.78, *SD* = 5.26) and

veterans not expressing a favorable attitude towards TMH treatment (*M* = 8.50, *SD* =

5.21) did not differ significantly on factor 4 (privacy; *t*(159) = .340, *p* = .734). Finally,

veterans expressing a favorable attitude towards TMH treatment (*M* = 8.92, *SD* = 4.70)

and veterans not expressing a favorable attitude towards TMH treatment (*M* = 8.34, *SD* =

4.52) did not differ significantly on factor 5 (emotional control; *t*(159) = .797, *p* = .427).

To test hypothesis 7, a Pearson's chi-square test was conducted to determine

whether there was a relationship between personality factors and endorsing more

favorable attitudes towards TMH care, both of which are categorical. In regard to

personality factors, participants' scores in each of the five factors (neuroticism,

extroversion, openness, agreeableness, and conscientiousness) based upon their answers

to the FFMRF were added, giving each participant a total of five scores, one for each

factor. These scores were then compared to one another, and the factor with the highest

score was considered each participant's dominant personality factor. Participants whose

dominant factor was agreeableness or conscientiousness were placed in one category and

participants with dominant factors of neuroticism, extroversion, and openness were

placed in another category. Favorable attitudes toward TMH treatment were determined

by the methods previously described.

No significant association between having agreeableness or conscientiousness as

a dominant factor and having a more favorable attitude towards TMH care was found (χ^2

$(1) = 0.85, p < .771$). Based on the odds ratio, the odds of veterans having higher

favorable attitudes towards TMH treatment were only 0.91 times more likely to have

agreeableness or conscientiousness as their dominant factor.

Chapter 6: Discussion

The goal of this study was to examine attitudes toward the use of TMH treatment and the effect of age, education level, computer technology skills, personality, and barriers to seeking treatment. Perhaps the most important finding from this study was that veterans who endorsed greater concerns regarding concrete barriers and distrust of caregivers (factor 3 on the BHSS) were found to have significantly higher favorable attitudes towards TMH, as compared to those with lower such concerns. The barriers included under this factor were transportation, health insurance, knowledge of available help, financial concerns, distrust of health professionals, and the expectation of needing to give something in return for help. These practical barriers are consistent with those noted in previous research for not seeking treatment (Zinzow et al., 2013); however, the findings in this study demonstrate that TMH may be a viable treatment option to help veterans surmount these barriers. This important finding offers support for TMH programs as a means of providing services to veterans in need, who might not otherwise seek treatment due to perceived and actual barriers to care.

Although concrete barriers were the most salient obstacles to care for veterans in this study who had high favorable attitudes towards TMH, factor 1 (need for control and self-reliance) only approached statistical significance. Barriers in this factor included thinking less of oneself for needing help, seeming weak for asking for help, not wanting to appear weak, not wanting others to influence them, and not wanting to feel controlled by others. Although this factor was not significant in this study, it is an area that merits further consideration, as it may be an obstacle for some individuals and it seems to be congruent with the messages members of the military receive throughout their careers of

being both physically and mentally tough. The ideology of the military culture to internalize values of strength (McFarling et al., 2011; Visco, 2009; Zinzow et al., 2013) undoubtedly helps to create a strong fighting force; however, the same values may potentially create a barrier in relation to seeking needed services. Nevertheless, this was not the case in this study.

The other factors on the BHSS were not found to have a significant impact on attitudes towards TMH. Factor 2 (minimizing problems and resignation) included items regarding the problem not being worth getting help, that it would go away over time, wanting to be certain the problem is serious before seeking help, and not wanting to overreact to something that is not serious. Factor 4 (privacy) included items regarding not wanting others to know about problems, the problem being embarrassing, and not wanting to be physically examined, especially by a medical professional of the opposite gender. Factor 5 (emotional control) included items regarding not liking to talk about feelings, keeping feelings to themselves, and not wanting to be viewed as though they cannot figure the problem out.

Veteran participants with more favorable TMH attitudes also endorsed having a higher current need of help for mental health programs than those with less favorable TMH attitudes. This finding was expected, as individuals without a current need for assistance would be less motivated for treatment and, generally, would have less reason to contemplate accessing mental health care services such as TMH treatment. This finding is important in that it informs behavioral health providers that TMH services are a desirable option, especially for those with a higher current need for treatment. It is important to note that diagnostic profile and the type of care needed were not assessed,

and differences in treatment preference by disorder can exist. For example, it was

previously determined that veterans who screened positive for PTSD were found to be

significantly less likely to utilize TMH than veterans who screened negative for PTSD

(Whealin, Seibert-Hatalksy, Howell, & Tsai, 2015).

      This study determined that approximately half (53%) of all participants endorsed

having high favorable attitudes toward the use of TMH, which is consistent with other

findings that ranged between 32.2% and 56.7% (Whealin et al., 2015). A higher

percentage of those 30 and older (61%) endorsed higher favorable attitudes towards TMH

as compared to those 18-29 (50%). This difference was unexpected given the differences

in the amount of time Americans of different ages spend online. A recent study found

that 36% of Americans between ages 18-29 are almost constantly online, with 50% going

online multiple times per day. As age increased, the amount of time spent online

decreased (Perrin, 2015). These findings were counterintuitive and bode well for the

acceptability of TMH, even for older veterans.

      It was also expected that those with higher education would be more willing to

utilize TMH; however, that was also found to be insignificant, as 54% of those with

lower education had more favorable attitudes towards TMH as compared to 51% of those

with a higher education. Individuals with greater technology experience, as measured by

the STS, were also not found to be significantly more willing to access mental health care

through technology. A significant difference was not found even when the two higher

technology skill groups of professional and advanced amateur and the two lower

technology groups of novice/beginner and intermediate moderate were combined. A

possible explanation for this finding is that 96% of veterans in this study reported having

internet access in their homes and, therefore, likely have the minimum technological skills required for TMH. Additionally, responses from veterans were exclusively gathered online, thus suggesting a selection-bias, indicating at least a minimum level of computer and internet skills, as well as access and a positive attitude toward using this medium. Taking into account the high number of veterans found to have internet access at home in this study (96%), home-based TMH services appears to be convenient for this population.

From an ethical/legal perspective, it is important to note that encryption software could be used to maintain patient privacy and confidentiality, with veterans using webcams on their personal computers to effectively access treatment services at home (Shore, Goranson, Ward, & Lu, 2014). Participants in the Shore et al. study reported high levels of treatment satisfaction, felt comfortable, and believed that their privacy was safe, and even had fewer missed appointments when compared to traditional clinic-based treatment.

In the current study, veterans who endorsed having a current need of help for mental or emotional problems were not found to be more willing to utilize mental health services through the VA if they were able to access care remotely through TMH. Previous research has found that veterans who endorsed a high need for mental health care for complex diagnoses were more likely to utilize services through the VA than veterans with less of a need for help (Hundt et al., 2014). The current study did not replicate the findings of a greater need for mental health correlating with a higher likelihood to utilizing the VA for services.

Veteran participants were assessed for personality factors based on the five-factor model as measured by the FFMRF. Those with predominant personality factors of conscientiousness or agreeableness (highest of the factor scores) were not found to have significantly higher favorable attitudes towards TMH than those with extraversion, neuroticism, or openness as their dominant factor, as was hypothesized. When each personality factor was examined independently, they were not found to predict significantly more favorable attitudes towards TMH. Although significant findings were not found with regard to personality factors and more favorable attitudes toward TMH, it was intriguing that nearly 55% of all participants had conscientiousness as their dominant personality factor. This finding is consistent with a recent study on veterans by DeViva and colleagues (2016), showing that more participants in their study had conscientiousness as their dominant personality factor. The military is known for the growth and development of leaders, for which conscientiousness is essential. For example, servicemembers from Australia who scored high on conscientiousness and low on extraversion were found to be more effective leaders (McCormack & Mellor, 2002). A later study replicated these results using West Point cadets, with conscientiousness being the largest personality predictor of leadership success (Bartone, Snook, & Tremble, 2002). A study of German military members indicated that personality traits predicted military service, but also changed as a result of their service. Specifically, those lower in agreeableness, neuroticism, and openness were more likely to serve in the military, and levels of agreeableness declined further as a result of military training. This study additionally found that participants increased in conscientiousness after serving in the military (Jackson, Thoemmes, Jonkmann, Lüdtke, & Trautwein, 2012).

Conscientiousness is generally a desirable trait, in proper proportion, and has been found

to contribute positively to job performance (Ng & Feldman, 2010), which is something

that can be a matter of life and death in military conflict. A foundational paper in the

area of personality factors and employment success found that individuals with high

conscientiousness performed well in regard to job and training proficiency across varying

occupational groups, including professionals, managers, sales associates, and skilled and

semi-skilled workers (Barrick & Mount, 1991). Given the level of conscientiousness in

this population, the current study adds to the volume of research indicating veterans may

be particularly valuable employees after discharge.

Change in personality throughout adulthood has been found across the overall

population as well. Levels of agreeableness, and to a lesser extent conscientiousness,

were found to increase over time during the lifespan (Soto, John, Gosling, & Potter,

2011). In this same study, neuroticism was found to decrease over time. Conversely,

extraversion and openness showed small differences; however, these were insignificant.

Female veterans constituted 21% of the sample in this study, which is more than

twice as many found in the overall veteran population (9.6%; U.S. Department of

Veterans Affairs, 2016). Although the percentage of females in this study (21%) is

slightly lower than the overall percentage of females in the recruited population (26.94%;

Cate & Davis, 2016), they are still over-represented as a population of veterans. One

possible explanation for this is that a high number of female veterans are seeking higher

education opportunities, and they may be more likely to respond to requests for

participation. Routon (2014) found that females having veteran status increased their

likelihood of attending college substantially versus their civilian peers, which is likely

due to the availability of financial and educational benefits, as well as their demonstrated conscientiousness. An additional possibility for the high number of females in this study is that females have a higher likelihood of participating in research. Specifically, females have been found to be more likely to participate in surveys than males (Porter & Whitcomb, 2005).

Limitations

There were several limitations to this study. First, the participants were recruited though Student Veterans of America chapters. Thus, the education level of participants in this study may not be representative of the overall veteran population. The nature of being affiliated with a student organization indicates participants are currently attending or have previously attended an institution of higher education at the college level or above. It is therefore likely that participants would have obtained a minimum of some college credits, and possibly Associate's, technical, Bachelor's, or even graduate degrees. Nevertheless, it should be noted that some trainings that members of the military undergo, such as for their particular job duties, provide college credit upon successful completion. Additionally, serving as an officer in the military generally requires a minimum of a Bachelor's degree, and many enlisted personnel have also earned collegiate degrees.

Congruent with education level, the relatively high level of technology experience and access reported by participants may be another limitation to the generalizability of this study. Technology is being increasingly integrated into all aspects of higher education, from financial aid applications, communication, and registration. Many educational institutions utilize virtual learning for course instruction, as well as course

management systems such as BlackBoard (Morgan 2003). The level of technology skill

that is required to succeed in higher education continues to increase and is woven

throughout the college experience. Because participants were obtained through veteran

organizations at institutions of higher education where a minimum level of basic

knowledge and experience with technology is a necessity to succeed, participants in the

survey may have greater technology skills than those of the overall veteran population.

Another limitation is that the data obtained in this study were collected through an

online survey. Recruitment for those that participated in the study was completed

through e-mail, which is another indicator that the level of technology experience and

access may not be representative of the veteran population. Specifically, it would have

been impossible for veterans without e-mail or internet access to have been recruited for

this study. Nevertheless, it is also possible that individuals with lower levels of

technology experience may not be open to the use of TMH treatment due to their lack of

access and/or inability to utilize the technology. Finally, the BHSS is a measure designed

for and normalized on a male population; however, it was used in the present study for

both males and females. Consequently, reliability statistics for women on the overall

BHSS scale were calculated and found to be highly reliable. An independent means t-test

determined that the only significant difference between males and females on the BHSS

was found on factor 4 (privacy), indicating that privacy was more of a barrier for females

seeking help than males. It is important to note that there were a fewer females than

males in the study, which may have impacted findings.

Several participants (n = 51) did not complete the survey in its entirety.

Observationally, the majority of these participants filled out the first half of the survey

that included demographic, military service, and technology information, but discontinued when questions shifted to a mental health focus. The reasoning for why this pattern was observed in those that did not complete the survey is unknown; however, it does bring into question what the obstacles were for these potential participants, especially as these obstacles might relate to barriers to seeking treatment. It is possible that some level of discomfort surrounding mental health exists for those veterans who did not complete the survey, which is important information that would have been helpful to capture.

Summary and Treatment Recommendations

Overall, the most significant finding in this study was that veterans who endorsed higher concrete barriers and distrust of caregivers were more likely to have favorable attitudes towards TMH. This demonstrates that the use of TMH may have an influence on reducing barriers to seeking mental health treatment among veterans, who might be the least likely to present for treatment on-site and who may be in most need of services. This is an important finding, as it illustrates that expanding TMH services has the potential to attract veterans to seek behavioral health care who might not otherwise seek services. An additional finding was that participants with more favorable TMH attitudes also endorsed having a higher current need of help for mental health treatment than those with less favorable TMH attitudes. This indicates that veterans in need of mental health care treatment are open to the idea of treatment through technology, which is an additional and cost-effective method of behavioral health care delivery. This study found that 96% of participants have internet access in their homes, which would facilitate home-based telehealth (HBT). The results of the present study indicate that expansion of

the VA's TMH services is a viable and acceptable option for this population, as long as security is ensured, such as with the use of encryption software to maintain confidentiality. Additionally, it was found that a high percentage of veterans in this study had conscientiousness as their dominant factor. This finding is promising for veterans transitioning into the civilian workforce, given that conscientiousness is a desirable personality trait in the workplace. In conclusion, the present study demonstrated that there are perceived barriers to seeking treatment and that TMH can help to overcome these barriers for a substantial portion of the veteran population.

Future Research

Future research should examine whether HBT services could further reduce perceived barriers to seeking mental health treatment, especially for veterans with PTSD. The use of HBT that utilized behavioral activation and therapeutic exposure to treat PTSD was found to be just as effective in reducing symptoms of PTSD and depression as the same treatment in-person (Strachan, Gros, Ruggiero, Lejuez, & Acierno, 2012). Prolonged exposure (PE) therapy for the treatment of PTSD has also been found to have comparable reductions in symptoms through the use of telehealth as compared to in-person treatment (Gros, Yoder, Tuerk, Lozano, & Acierno, 2011). Another study is currently in the process of collecting data to determine treatment outcomes comparing home-based TMH and traditional treatment for depression in veterans (Luxton et al., 2014). More studies such as these should continue to explore HBT care to determine treatment outcomes, as well as perceived reduction in barriers to seeking mental health treatment. Adding to the scientific literature in the area of HBT could lead to greater acceptance of TMH and to the expansion of mental health services offered to veterans,

and would lead to enormous financial savings for the VA. By continuing to expand the

VA's TMH services, more veterans would be able to access high quality behavioral

health treatment, which could increase their quality of life.

Future research should also examine factors that may enhance treatment seeking

among servicemembers. For example, it would be valuable to examine how higher unit

cohesion and leadership qualities among NCOs and officers (Britt, Wright, and Moore

2012; Wright et al., 2009) could be used to facilitate treatment and reduce treatment-

related stigma, both in-person and via advanced technology to the benefit of active-duty

servicemembers and veterans. The effect NCOs and officers have on servicemembers,

whether positive or negative, has the potential to influence beyond active duty service

and impede or facilitate whether veterans seek mental health care treatment.

Research should also continue to explore whether there are significant

relationships among specific mental health diagnoses and favorable attitudes toward

using TMH. Obtaining these preference rates would allow providers to offer treatment

methods that would better appeal to their patients. Additionally, research should continue

to investigate specific personality factors among military members and their relation to

barriers to seeking mental health treatment. Understanding the dynamics between

personality factors and barriers to care would allow providers to develop treatment

options that would be better accepted and utilized. An assessment tool for providers

could be developed to help determine which patients might obtain treatment gains

utilizing TMH. This tool would ideally incorporate mental health screeners that take into

account diagnoses that have successful treatment outcomes using TMH. The clinical tool

should also include an assessment of perceived barriers to seeking treatment, as this

variable was found to be significant in relation to acceptability of TMH. The

development of such a clinical tool would allow providers to quickly assess their patients

to determine whether TMH is a viable treatment option.

Perhaps the most important area to study involves determining how to maintain a

battle-ready and mentally strong fighting force, who are also able to seek mental health

care services when it is warranted, both while enlisted and after discharge. TMH

treatment, particularly HBT, may be the means that allows for mental health services to

be accessed in a more private and sustainable way. This form of treatment may break

down barriers that might otherwise impede on a servicemembers' willingness to access

treatment.

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Appendix

Did you receive formal technology (computer/internet) training as part of your military

  service? ☐ Yes   ☐ No

Have you received formal technology (computer/internet) training at any time?

  ☐ Yes   ☐ No

Do you have internet access at your home?

  ☐ Yes   ☐ No

About how many hours/**week** on average do you spend on the internet (on any device)?

    ☐ 0   ☐ <1 hr/wk   ☐ 1-5 hrs/wk   ☐ 6-10 hrs/wk   ☐ >10 hrs/wk

 About how many hours/**day** on average do you spend on the internet (on any device)?

    ☐ 0   ☐ <1 hr/wk   ☐ 1-5 hrs/wk   ☐ 6-10 hrs/wk   ☐ >10 hrs/wk

About how many hours/**day** on average do you spend on social media (facebook, twitter,

etc…)?

    ☐ 0   ☐ <1 hr/wk   ☐ 1-5 hrs/wk   ☐ 6-10 hrs/wk   ☐ >10 hrs/wk

About how often on average do you use video chat through any device such as Skype,

FaceTime, Google hangouts, or other similar service?

☐ Never   ☐ <1 time/month   ☐ 1-5 times/month   ☐ 6-10 times/month   ☐ >10

times/month

Do you have the vision, hearing, and motor (movement) abilities to use video

chat?   ☐ Yes   ☐ No

Please rate each item on a 0 to 4 scale: |------------------------------|

                                    0   1   2   3   4

                             not at all   very much

I would like to get help from a chaplain now for mental health OR stress concerns.

   ☐ 1   ☐ 2   ☐ 3   ☐ 4

I have gotten help from a chaplain in the past for mental health OR stress concerns.

   ☐ 1   ☐ 2   ☐ 3   ☐ 4

I would like to get help from a counselor, social worker, or psychologist now.

   ☐ 1   ☐ 2   ☐ 3   ☐ 4

I have gotten help from a counselor, social worker, or psychologist in the past.

   ☐ 1   ☐ 2   ☐ 3   ☐ 4

Some people have told me I should seek help for mental or emotional concerns from a professional now.

☐ 1   ☐ 2   ☐ 3   ☐ 4

Some people have told me I should seek help for mental or emotional concerns from a professional in the past.

☐ 1   ☐ 2   ☐ 3   ☐ 4

Do you have a current active substance abuse

problem?   ☐ Yes   ☐ No

In the last two years, have you been diagnosed with a mental health

illness?   ☐ Yes   ☐ No

Have you at any time in your past been diagnosed with a mental health

illness?   ☐ Yes   ☐ No

Please rank your preference in order 1-6:

I would seek help for mental or emotional concerns:

_____ in person with a civilian provider.

_____ remotely with the use of technology (i.e. video chat) with a civilian provider.

_____ in person at a Veterans Affairs provider.

_____ remotely with the use of technology (i.e. video chat) with a Veterans Affairs

provider.

_____ in person with a faith based leader.

_____ remotely with a faith based leader.