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Predictors of help-seeking in returning Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans

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Predictors of Help-Seeking in Returning Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) Veterans

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ABSTRACT

Despite a significant number of Afghanistan and Iraqi veterans who reported symptoms of PTSD, depression, anxiety, and substance abuse, the majority of these veterans did not seek help for these problems. Past research has shown several variables that may contribute to an individual seeking help for a mental health problem including demographic variables, nature and severity of the mental health problem, and psychological variables. All Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans and service members that registered with the Ann Arbor VA Healthcare System between 2001 and 2007 were contacted by mail and asked to participate in the Internet-based survey. Participants were asked to complete several questionnaires regarding their current physical and psychological health, social support, self-efficacy, stigma, and barriers relating to seeking help for a psychological or physical problem as well as informal and formal help-seeking patterns. The primary goal of this study was to examine predictors of help-seeking for a psychological problem within the framework of a new model of help-seeking. Results indicated a significant model fit in the multiple linear regression analyses for help-seeking intentions; however, results were not strong in the logistic analyses for past help-seeking behavior. Interestingly, the independent variable, attitudes toward seeking mental health services, was a significant coefficient in all psychological and physical help-seeking models. Implications for this population regarding assessment, outreach, and program development are discussed.

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Predictors of Help-Seeking in Returning Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) Veterans

The primary focus of this study was to survey returning Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans via the Internet to determine which variables best predict those veterans who have sought or were willing to seek help for a psychological or physical problem. These variables were organized within the framework of a new model of help-seeking. In addition, help-seeking intentions and behavior from formal VA sources versus private and informal sources were examined. To aid the reader, a list of acronyms can be found in Appendix A.

Problem Statement

In October 2001, the United States launched Operation Enduring Freedom (OEF) in Afghanistan and in March 2003 launched Operation Iraqi Freedom (OIF). These two military initiatives have resulted in the largest sustained military operations since the Vietnam War. Prior research on the effects of military combat have consistently shown an increased risk of developing posttraumatic stress disorder (PTSD), depression, generalized anxiety, substance abuse, and impairment in social and occupational functioning (Hoge, Auchterlonie, & Milliken, 2006; Kessler, Sonnega, Bromet, & Hughes, 1995; Kulka, et al., 1990).

PTSD in particular is a significant problem within the veteran population. The National Vietnam Veterans Readjustment Survey ([NVVRS], Kulka et al., 1990) reported that lifetime prevalence of PTSD among American Vietnam theater veterans was estimated to be 30.9% for men and 26.9% for women. In addition, the NVVRS reported that 22.5% of men and 21.2% of women have had PTSS (posttraumatic stress symptoms) at some point in their lives. This suggests that more than half of all male Vietnam veterans and almost half of female Vietnam

veterans have experienced "clinically significant stress reaction symptoms" (Kulka et al., 1990, p. 53).

Although studies have shown that combat exposure contributes to the development of PTSD, soldiers are at risk for developing other psychopathology as well. The NVVRS reported that lifetime prevalence of a major depressive episode (MDE) among American Vietnam theater veterans was estimated at 5.1% for men and 12.4% for women. Generalized Anxiety Disorder was estimated to be 14.1% for males and 16.6% for women, and alcohol abuse or dependence was estimated to be 39.2% in males and 9.1% in females (Kulka et al., 1990). In a primarily civilian sample from the National Comorbidity Survey (NCS; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), lifetime prevalence for MDE was higher among men and women, 11.7% and 18.8% respectively. Prevalence rates for generalized anxiety disorder were lower in the NCS, 3.3% for men and 5.9% for women, and substance abuse rates were comparable to the Kulka et al. (1990) sample at 34.4% for men and 13.5% for women. Lifetime prevalence for PTSD in the NCS was found to be 7.8%, much lower than the veteran sample in Kulka et al. (1990). Based on the statistics from these surveys, veterans seem more susceptible to mental disorders than the civilian population.

Military operations in the Gulf War during the early 1990s also represented a significant military effort. Results from various studies reported prevalence rates of PTSD ranging from 2% - 10% (Kang, Natelson, Mahan, Lee, & Murphy, 2003; The Iowa Persian Gulf Study Group, 1997). Depression and alcohol abuse were found to be 17.0% and 17.4%, respectively, among Gulf War veterans, with anxiety being estimated at 4%. These rates represent much lower prevalence of psychopathology than the Vietnam veteran sample (Kulka et al., 1990).

A recent study by Hoge et al. (2004) reported prevalence of mental health problems among OEF/OIF veterans after deployment to either Iraq or Afghanistan. Higher rates of psychopathology were reported for those units serving in Iraq than those in Afghanistan, and these higher rates were correlated to exposure to combat. Using a more strict definition of psychopathology that included either a criterion for functional impairment or a large number of symptoms, prevalence rates were found to be 17.1% overall for PTSD, depression, anxiety, and substance abuse. In a more recent study by Hoge et al. (2006), approximately one third of OIF veterans accessed mental health services within their first year of returning home.

Despite the significant numbers of veterans that reported symptoms of PTSD, depression, anxiety, and substance abuse, the majority of these veterans did not seek help for these problems (Hoge et al., 2004). Hoge and colleagues queried three U.S. Army units from OEF/OIF and asked them whether they were "currently experiencing stress, emotional problems, problems related to the use of alcohol, or family problems" and whether these problems were mild, moderate, or severe. Results showed that 17.1%-19.5% of soldiers perceived themselves as having a moderate or severe mental health problem. Of those, 78%-86% indicated a perceived need for use of mental health services, but only 13%-27% had actually sought help in the past year from a mental health professional. This discrepancy raises important questions regarding variables that may be affecting help-seeking behavior. In a non-veteran sample (Mojtabai, Olfson, & Mechanic, 2002), two groups of individuals were found to be least likely to express a need for professional help, younger individuals and men, two characteristics that represent the current OEF/OIF veteran demographic.

Past research on help-seeking in veteran samples has examined various demographic (e.g., age, ethnicity) and illness-related variables (e.g., PTSD) that may affect an individual's

decision to seek help. However, results from these studies have been mixed, suggesting other processes may be involved. In non-veteran samples, researchers have begun to investigate various psychological mechanisms (e.g., attitudes) that may be involved in help-seeking behavior, and results from these studies have demonstrated the predictive value of several psychological variables. What seems clear from the literature is that help-seeking is a complicated process involving multiple variables (Mojtabai et al., 2002). A better understanding of the mechanisms and thought processes involved in help-seeking with this population would aid clinicians and administrators in assessment, outreach, program development, allocations of mental health resources, and provision of services to those who need them.

Theoretical Models of Help-Seeking

Help-seeking is defined as the act of seeking assistance for a perceived problem. There are many theoretical models that have been developed over the years in an attempt to predict or explain a behavioral action or intention. A brief review and critique of these models provides a context and basis for the new model of help-seeking behavior and the predictors that were ultimately selected for this study.

Health Belief Model. The Health Belief Model (HBM) is a psychological theory of decision-making that attempts to explain and predict health behaviors (Becker, 1974). The HBM construct focuses on the attitudes and beliefs of individuals and consists of the following four dimensions: 1) *perceived susceptibility*, an individual's perception of the chances of contracting a certain illness or their susceptibility to the problem condition; 2) *perceived severity*, an individual's perception of how serious their condition is or to what extent it interferes with their daily functioning; 3) *perceived benefits*, an individual's perception as to the effectiveness of some action to reduce symptoms; and 4) *perceived barriers*, an individual's perception of any

concrete or psychological costs of this action (see Appendix B for a visual depiction of the HBM).

Two additional concepts were added later to the HBM, *cues to action* and *self-efficacy*. Cues to action are events (internal or external) thought necessary to trigger the decision-making process (Janz & Becker, 1984). Self-efficacy, one's confidence in their ability to successfully perform an action, was added by Rosenstock, Strecher, and Becker (1988) to address the challenges of habitual unhealthy behavior patterns.

The HBM is one of the most frequently cited and researched models in health psychology (Harrison, Mullen, & Green, 1992). However, the model was originally designed for and has been used primarily for the prediction of prevention-related behaviors (e.g., breast self-examination, using condoms, or obtaining vaccinations) and less often for sick role behaviors (Becker, 1974). Another issue concerning this model represents both strength and a weakness, specifically the broad definitions of the HBM's dimensions allow for flexibility in measuring specific beliefs related to specific behaviors. However, this also allows for greater variability in the operationalization of the dimensions, making it difficult to determine consistency of the model (Ogden, 2003). The wide variety of variables that may be considered relevant "barriers" for a given population may include psychological, physical, logistical, or any combination of these barriers.

However, despite these issues, the model's use of benefits and barriers opposing each other provides a dynamic representation of the decision-making process, as some individuals typically weigh the pros and cons of a situation before acting. In a meta-analysis of retrospective preventative-health studies utilizing HBM (Harrison et al., 1992), perceived barriers was found to be the most significant variable, followed by perceived benefits, perceived susceptibility, and

perceived severity. However, results indicated that at best, 10% of the variance was accounted for by any one dimension.

Theory of Planned Behavior. Ajzen's Theory of Planned Behavior (TPB) is an extension of the theory of reasoned action (TRA; Ajzen & Fishbein, 1980) where the researchers posit that human action is guided by three factors: 1) *behavioral beliefs*, beliefs about the likely outcomes of the behavior and the evaluations of these outcomes; 2) *normative beliefs*, beliefs about the normative expectations of others and motivation to comply with these expectations; and 3) *control beliefs*, a concept related to self-efficacy, which refers to beliefs regarding the presence of factors that may facilitate or impede performance of the behavior (Ajzen, 1991). Respectively, it is hypothesized that behavioral beliefs produce a favorable or unfavorable *attitude toward the behavior*; normative beliefs result in perceived social pressure or *subjective norm*; and control beliefs give rise to *perceived behavioral control*. Attitude toward the behavior, subjective norm, and perception of behavioral control then ultimately lead to behavioral intentions. In general, the greater the subjective norm and the greater perceived control, the more likely an individual is to engage in a specific behavior with a more favorable attitude. Finally, intention to perform the behavior is followed by the actual behavior if the individual has a sufficient degree of control over the behavior.

Similar to the HBM, the TPB has shown utility in predicting preventative health behaviors (Ajzen, 1991; Armitage & Conner, 2001; Godin & Kok, 1996). No studies were found that examined the entire model in relation to a mental health problem; however, studies have been conducted that examine specific constructs of the TPB, specifically attitudes and social norms (Vogel & Wester, 2003; Vogel, Wade, Wester, Larson, & Hackler, 2007). As in the HBM, this model assumes a rational decision-making process in determining behavior;

however the model omits any evaluation of perceived distress or severity of the condition. This is not to suggest a weakness in the model; merely to highlight the original intent of the model. In a meta-analysis of studies incorporating the TPB, Godin and Kok (1996) found that attitudes toward the behavior and perceived behavioral control accounted for the explained variation in behavioral intention.

The Self-Regulation Model. The Self-Regulation Model also known as the Common Sense Model (SRM; CSM; Leventhal, Nerenz, & Steele, 1984) proposes that an individual's representation of their illness is directly related to the individual's adoption of adaptive coping strategies and behaviors (see Appendix C for a visual depiction). Five specific components are identified as contributing to this illness representation: 1) *perceived identity* of the illness, how the individual labels the symptoms they are experiencing; 2) *perceived consequences* of the symptoms, referring to beliefs regarding the impact of the illness on overall quality of life; 3) *perceived causes* of the symptoms, beliefs regarding the factors that are responsible for causing the illness; 4) the *timeline*, expectations regarding how long the symptoms might last; and 5) *perceived control* or *cure* of the illness, the sense of empowerment regarding performance of coping behaviors or the efficacy of treatment adherence (Lau & Hartman, 1983).

As with the HBM and TPB, Leventhal's model has been used extensively in the area of health psychology, examining variables that may contribute to an individual's coping response to their physical illness, such as increased doctor visits or seeking social support. Although no studies were found utilizing SRM for a mental health problem, Hagger and Orbell (2003) conducted a meta-analysis of SRM studies for physical illness, such as Fibromyalgia, Chronic Fatigue Syndrome, and Diabetes, among others. The researchers found that overall, the

control/cure dimension of the SRM was positively associated with problem-focused coping and seeking social support.

Behavioral Model of Health. The Behavioral Model of Health (BMH) is a model that specifies a combination of *predisposing*, *enabling,* and *illness/need* variables that may determine the likelihood and quantity of health service use (Anderson, 1995). Predisposing variables are characteristics that may exist prior to the condition, such as personal history, demographics, or beliefs about treatment. Enabling factors reflect the individual's available resources in accessing health services, and illness/need variables reflect the diagnosis and severity of the condition (a visual depiction of the BMH can be found in Appendix D).

The BMH has been used as a framework for examining help-seeking in several studies of mental health (Elhai, Grubaugh, Richardson, Egede, & Creamer, 2008; Elhai, Reeves, & Frueh, 2004; Elhai, Richardson, & Pedlar, 2007; Goodwin & Andersen, 2002; Goodwin, Koenen, Hellman, Guardino, & Struening, 2002; Koenen, Goodwin, Struening, Hellman, & Guardino, 2003; Pickard, 2006). In four of the seven studies, predisposing, enabling, and illness/need variables were represented as significant coefficients in the final model; the illness/need variable was a significant predictor in all studies utilizing the BMH. In Pickard (2006), younger participants within this elderly population, lesser social support and increased levels of stress predicted increased help-seeking. Koenen et al. (2003) found that older age, being separated or divorced, Caucasian, and level of symptom interference predicted increased help-seeking.

Three studies used the BMH to examine help-seeking in veteran samples. In Elhai et al. (2004), *illness/need* variables (scores on the MMPI-2) were the sole predictors of specialty care service use with the BMH framework. Younger age, more health problems, and PTSD severity were found to be predictive of psychological treatment use in a sample of Canadian

peacekeeping veterans (Elhai, Richardson, & Pedlar, 2007). Results from the 2001 National Survey of Veterans (Elhai, Grubaugh, Richardson, Egede, & Creamer, 2008) indicated that *predisposing* (younger age, unmarried, combat exposure), *enabling* (lack of health insurance, unemployment), and *illness/need* (disability rating, poorer mental and physical health functioning) variables were associated with VA mental health treatment use with the strongest effects for disability and physical health functioning.

Solomon's Model of Help-seeking. Zahava Solomon (1993) theorizes a 5-stage model for help-seeking specific to combat veterans: 1) the *perception of severe distress*, 2) the identification of the *distress as requiring professional help*, 3) weighing the *costs and benefits* of seeking help, 4) the *decision to seek help*, and 5) the selection of the *type of help sought*. The components of this model are similar to those of the HBM; however, the fifth component, the type of help sought, is a component not addressed in the other models (see Appendix E for a visual depiction of Solomon's model).

Solomon posits that once a decision has been made to seek help for a psychological problem, the individual may chose to seek informal or formal help (Solomon, 1993). Informal help includes spouses, friends, parents, or other family members not specifically trained to offer counseling for mental health issues or the Internet and self-help books. Formal help includes trained persons such as a physician, psychiatrist, psychologist, counselor, or minister/clergy (Barker & Pastrang, 2002). Solomon's study of Israeli veterans suggests the primary care physician is often the first contact for veterans experiencing psychological problems (Solomon, 1993). No studies were found that validated the specific steps or framework of this model to examine help-seeking.

Summary of Help-seeking Models

Based on the literature from the various help-seeking models, several variables stand out as consistent predictors of help-seeking. From the HBM, barriers to help-seeking were found to be the most consistent predictor of help-seeking behavior. It should be noted, however, that the definition of "barriers" varied widely from study to study depending on the health issue and sample population. Perceived control regarding the illness as well as attitudes toward help-seeking behavior was found to have predictive value in the context of the TPB and SRM models. Finally, illness and need variables seem the most consistent predictor with the framework of the BMH and the only studies that examined veterans' patterns of health care consumption. The following sections continue to examine the literature on help-seeking behavior, though not within the framework of any one behavioral model.

Predictors of Help-seeking

Past research of help-seeking has shown several variables in various population samples that may contribute to seeking help for mental health problems (Elhai, North, & Frueh, 2005). In previous studies, demographic variables, nature and severity of the mental health problem, as well as psychological and environmental variables have been examined as predictors of help-seeking behavior. Studies involving demographic variables have investigated gender, age, marital status, education, and ethnicity as predictive of seeking help. Nature and severity of various Axis I psychopathology has been studied as predictive of help-seeking that includes mood, anxiety, substance use, having experienced a traumatic event, and the individual's physical health. Various psychological variables such as perceived need for services, mental barriers to seeking help, and attitudes toward seeking help from a mental health professional have been studied, although to a lesser extent in the veteran population. Environmental factors

such as logistical barriers and the individual's social network have been found to be associated with help-seeking behavior.

Finally, studies of help-seeking that have examined the type of help sought for a mental health problem are presented. The literature on help-seeking is vast and as such, the review of this study was organized within the five categories described above: demographic variables, illness/need variables that address nature and severity of the problem, internal psychological variables that pertain to the individuals attitudes and beliefs, external variables and barriers that pertain to factors in the individual's environment, and a review of the type of help sought, including studies that have examined formal and informal sources of help-seeking. Studies are presented within these categories that reflect both non-veteran and veteran populations.

Demographic Predictors of Help-Seeking

Non-veterans. Studies have shown mixed results regarding age as a predictor of help-seeking in non-veteran samples. Older age indicated a lower likelihood of accessing formal help in a national sample of women (Lewis et al., 2005). New and Berliner (2000) reported no significant relationship between treatment-seeking and age in adult crime victims as did Rodriguez et al. (2003) for primary care patients diagnosed with PTSD. Still other studies are contrary to the aforementioned studies, where older individuals indicated an increased likelihood of seeking formal help in primary care and mental health settings (Boscarino et al., 2004; Koenen et al., 2003). In a study of natural disaster victims in Japan, findings indicated that younger and/or female victims frequently sought help from informal sources while male and/or older victims frequently sought help from professionals (Goto, Wilson, Kahana, & Slane, 2002).

Ethnicity as a predictor for help-seeking has shown mixed results in non-veteran samples. In some studies, more mental health use is related to Caucasian ethnicity (Koenen et al., 2003;

New & Berliner, 2000; Ullman & Brecklin, 2002). In the wake of the September 11, 2001, attack, Caucasians living in New York City were more likely to access mental health care than were African Americans or Hispanics (Boscarino et al., 2004). In another community sample following the September 11th attack, no association was found between ethnicity and mental health care use (Boscarino, Galea, Ahern, Resnick, and Vlahov, 2002).

Studies of gender as a predictor of help-seeking in non-veteran samples indicate that female trauma survivors are more likely to seek out mental health services than male trauma survivors (Elhai et al., 2005). In the study by Boscarino et al. (2004), there was no apparent relationship between gender and overall mental health use after the September 11th attack; however, among those in the sample with a PTSD diagnosis, women were slightly more likely than men to seek services, 24% versus 18.2%.

Veterans. Prior studies have also shown mixed results regarding age as a predictor of help-seeking in veteran samples, although the majority of veteran samples found age was unrelated to help-seeking in males (Elhai et al., 2004; Frueh, Elhai, Monnier, Hamner, & Knapp, 2004; Iversen et al., 2005; Marshall, Jorm, Grayson, Dobson, & O'Toole, 1998; Solomon, 1989). In one sample, health care utilization was compared among veterans with PTSD and without (Calhoun, Bosworth, Grambow, Dudley, & Beckham, 2002). Results indicated that younger veterans with a PTSD diagnosis used significantly more outpatient mental health services than those without PTSD.

Ethnicity as a predictor for help-seeking has also shown mixed results in veteran samples. African American and Hispanic ethnicity indicated a lower likelihood of accessing formal help in a sample of Vietnam veterans (Rosenheck & Fontana, 1994). This same sample was analyzed for the type of mental health service utilized, indicating that African Americans with PTSD were

more likely to utilize substance abuse services than PTSD-specific services at a VA center (Rosenheck & Fontana, 1996). Other studies of veteran samples reveal no relationship between ethnicity and help-seeking behavior (Elhai et al., 2004; Frueh et al., 2004).

There were no studies found that assessed gender differences in help-seeking for veteran samples due to the low base rates of women in the samples. Finally, there were three studies found that examined marital status and educational level in veterans as a predictor of mental health use and results indicated no significant relationship for either variable (Elhai et al., 2004; Iverson et al., 2005; Solomon, 1989).

Summary of Demographic Predictors

Based on the literature, demographic variables do not seem to consistently predict help-seeking behavior in either veteran or non-veteran samples. Interestingly, except for the BMH, the majority of the help-seeking models described previously do not directly include demographic variables in their component constructs. Rather, it is thought that the demographic variables such as age, culture, education, and socioeconomic status indirectly influence an individual's perception of their problem as well as their attitudes and beliefs (Janz, Champion, & Strecher, 2002; Montano & Kasprzyk, 2002). In this study, based on the previous literature, demographic variables were not included in the final hypothesized model as independent predictors of help-seeking but were utilized in additional analyses.

Psychopathology as Predictors of Help-seeking

Non-veterans. Kessler et al. (2005) reported the prevalence and treatment of mental disorders from 1990 to 2003. Although results overall indicated an increase in treatment-seeking over the years, most individuals diagnosed with a mental disorder did not receive treatment. In

addition, although a small positive association was indicated between symptom severity and treatment seeking, symptom severity did not predict the receipt of treatment.

In a meta-analysis of non-veteran trauma survivors, Elhai et al. (2005) found a majority of studies indicating that a diagnosis of PTSD and severity of PTSD was associated with increased mental health use. Similar positive associations with help-seeking are found in studies examining diagnosis and severity of depression, with the majority of studies demonstrating increased service use (Boscarino et al., 2002; Goto et al. 2002; Norris, Kaniasty, & Scheer, 1990; Weine et al., 2000). However, a study by Rodriquez et al. (2003), found no significant relationship between depression and increased treatment seeking.

Many studies examining a mental health diagnosis and treatment-seeking for physical problems show increased utilization of medical services in non-veteran samples. Depression is often linked with increased use, and anxiety disorders have been shown to be associated with increased utilization for physical problems (Schnurr, Friedman, Sengupta, Jankowski, & Holmes, 2000). In a community sample in postwar Kosovo, poor physical health was related to PTSD and use of general health services (Eytan, Toscani, Loutan, & Bovier, 2006).

Veterans. Diagnoses of PTSD, depression, anxiety, and alcohol abuse, and symptom severity has been shown to be positively correlated with help-seeking behavior (Calhoun, et al., 2002; Iverson et al., 2005; Marshall, Jorm, Grayson, Dobson, & O'Toole, 1997, Marshall et al., 1998; Rosenheck & Fontana, 1994; Solomon, 1989). However, a recent study showed no relationship between symptom severity and help-seeking in a veteran sample (Elhai et al., 2004).

Existing data on veterans have also shown relationships between psychopathology, poor self-reported physical health, and increased utilization of medical services (Schnurr et al., 2000). PTSD in particular has been found to be positively associated with greater medical utilization for

physical problems in veteran samples (Calhoun et al., 2002; Kulka et al., 1990; Marshall et al., 1998; Schnurr et al., 2000) but increased use of medical services have also been associated with depression, anxiety, and alcohol abuse (Marshall et al., 1997; Marshall et al., 1998).

Summary of Psychopathology as Predicting Help-seeking

The majority of studies in both non-veteran and veteran samples indicate diagnosis and symptom severity as being associated with help-seeking behavior for a mental health problem. In addition, both veteran and non-veteran samples diagnosed with a mental disorder show increased medical service use for physical problems. It should be noted, however, that the veteran samples examined in all the studies cited were involved in conflicts prior to OEF/OIF.

When examining the existing models of help-seeking, the HBM, BMH, SRM, and Solomon's model, all incorporate an illness/severity component as part of the help-seeking process. Only the TPB omits this variable from its component constructs. Given the presence of a severity variable in the majority of help-seeking models as well as the consistency of this variable in the veteran literature, this study incorporated this factor into the help-seeking model, assessing both a mental health and physical health component.

Internal Psychological Predictors of Help-seeking

Non-veterans. In a community sample in Australia (Barney, Griffiths, Jorm, & Christensen, 2005), participants' perceived self-stigma was associated with a reluctance to seek help for depression. In studies of college student samples, greater self-stigma was associated with decreased intentions to seek counseling (Vogel, Wade, & Haake, 2006; Vogel, Wade, & Hackler, 2007). One study was found that examined self-efficacy as relating to help-seeking behavior. In a sample of rural residents in Australia, a higher level of general self-efficacy was found to be associated with less likelihood of having sought help for a mental health problem.

Attitudes towards mental health treatment have been studied extensively in the non-veteran population. The vast majority of studies have demonstrated that positive attitudes towards counseling are associated with increased mental health treatment as well as intentions to seek help (Bayer & Peay, 1997; Elhai & Simons, 2007; Fischer & Farina, 1995; Mackenzie, Knox, Gekoski, & Macaulay, 2004; Shaffer, Vogel, & Wei, 2006; Vogel et al., 2006). Several other variables that have examined internal psychological processes are present in the literature and have been found to be associated with attitudes towards mental health treatment. Fear of emotional expression, along with lack of self-disclosure to others and unwillingness to share negative personal information (Hinson & Swanson, 1993; Kelly & Achtor, 1995; Komiya, Good, & Sherrod, 2000; Vogel & Wester, 2003), have predicted negative attitudes toward help-seeking. In addition, higher levels of gender role conflict and gender norms have been found to be associated with more negative attitudes towards counseling (Berger, Levant, McMillan, Kelleher, & Sellers, 2005; Good & Wood, 1995).

Veterans. Self-stigma is a variable that may be salient for veterans (Greene-Shortridge, Britt, & Castro, 2007). It should be noted that self-stigma is differentiated from public or social stigma. Self-stigma exists when people have negative attitudes about themselves as a result of internalizing how society portrays people with mental illness (Corrigan & Watson, 2002) whereas public stigma refers to the individual's perceived reaction of society towards people with a mental illness. Public stigma is addressed in the next section under the category of external and environmental predictors of help-seeking.

In Iverson et al. (2005), 20% of the sample endorsed that they would be embarrassed to consult a mental health professional. A similar endorsement was found in Hoge et al. (2004), where 41% of OEF/OIF veterans said seeking mental health services would be too embarrassing.

In another veteran sample, stigma was examined among service members returning from U.S. peacekeeping missions in Bosnia (Britt, 2000). Results showed that admitting a mental health problem while in the military was more stigmatizing than admitting a medical problem. This same sample reported less likelihood of following through with a psychological referral than with a medical referral.

In Solomon (1989), perceived self-efficacy in combat was examined in Israeli soldiers who had fought in the 1982 Lebanon war. Higher perceived self-efficacy was found to be associated with a reluctance to seek professional help. This finding is consistent with another study in which 72% of veterans who both endorsed mental health problems and stated "I could deal with it myself," did not seek help (Iverson et al., 2005).

Summary of Internal Psychological Predictors of Help-seeking

Self-stigma, attitudes toward counseling, and self-efficacy stand out in the literature as important variables and were included in the help-seeking model of this study. Attitudes toward seeking mental health treatment in particular has been studied extensively in the non-veteran population, but no studies were found that examined attitudes with veterans, warranting further investigation in this population. These variables also seem relevant in light of the existing help-seeking models described previously. Attitude toward the behavior is addressed directly in the TPB, and one might argue that attitude toward counseling constitutes a benefit or barrier from Solomon's model and the HBM or a predisposing variable in the BMH. Self-efficacy fits well within the framework of the TPB (e.g., control beliefs) and the SRM (e.g., perceived control or cure).

External/Environmental Predictors of Help-seeking

Non-veterans. Public stigma or perceived social stigma has been investigated in several studies, although results have been mixed. In studies examining rural communities in Australia, results have shown no association between public stigma and help-seeking (Judd et al., 2006; Komiti, Judd, & Jackson, 2006; Wrigley et al., 2005); however, in a community sample in Australia, one study found a significant relationship between perceived social stigma and help-seeking intentions from any professional source. The researchers that examined rural populations posit that due to lack of availability of psychologists or psychiatrists in rural communities, there is lower public stigma when people seek help from their local doctor.

An individual's social support network may influence an individual's decision to seek or not seek help. In a college student sample, low levels of social support were found to be associated with a greater likelihood of seeking help for interpersonal problems (Cepeda-Benito & Short, 1998). In another college student sample, social support was not predictive of help-seeking intentions (Vogel & Wester, 2003). In a community sample, Sherbourne (1988) found that when social support was defined as social resources (e.g., tangible support), the more social resources, the less likely one was to use mental health services. Number of social contacts was not predictive of service use. The results of this study suggest that the quality of the support, not necessarily the quantity, is an essential component in the help-seeking process. In a study by Cramer (1999), results indicated an indirect relationship between social support and help-seeking: that individuals were more likely to seek counseling when their distress was high and individuals were more likely to be distressed when their social support network was impaired.

Some logistical and systems level barriers have been examined in community samples of trauma survivors (Elhai et al., 2005). Having health insurance showed no significant relationship

with utilization of mental health services in two studies; one in a New York City sample after 9/11 (Boscarino et al., 2002) and one in a crime victim sample (New & Berliner, 2000). Household income also showed no relationship to mental health service use in Boscarino et al. (2002).

Veterans. In Hoge et al. (2004), perceived public or social stigma seems to be a particularly salient variable, with 65% of veterans who screened positive for a mental disorder endorsing the notion that they would be seen as weak if they were to seek mental health treatment, 63% thinking their unit leadership would treat them differently, and 59% thinking that members of their unit would have less confidence in them. A study of peacekeeping soldiers in Kosovo and Bosnia found that 14-23% would be concerned about what others might think if they sought help for a mental health problem (Maguen & Litz, 2006).

Social support in veterans has been found to be related to postwar adjustment and development of psychopathology, particularly PTSD (Keane, Scott, Chavoya, Lamparski, & Fairbank, 1985; King, King, Fairbank, Keane, & Adams, 1998; Ozer, Best, Lipsey, & Weiss, 2003). In King et al. (1998), the quality of the social support network, specifically low levels of functional support, predicted PTSD psychopathology for both women and men. In a study of Australian veterans, Marshall et al. (1998) found social support to be predictive of health care consumption.

Many of the other barriers assessed in Hoge et al. (2004) were related to mistrust of mental health providers and logistical concerns. Thirty-eight percent of soldiers who met screening criteria for a mental disorder indicated mistrust of mental health professionals, 45% indicated difficulty in scheduling an appointment, and 55% indicated difficultly in getting time off of work for treatment. Hoge et al. (2004) also reported financial and transportation barriers,

including inadequate transportation and high mental health care costs. In addition, Rowan and Campise (2006) reported on a Department of Defense survey in which 49% of active service members expressed concerns about their career in relation to seeking help for a mental health problem as well as concerns about confidentiality. In Hoge et al. (2004), 50% of those who met criteria for a mental disorder said it would harm their career if they sought services.

Summary of External/Environmental Predictors of Help-seeking

The construct of external and environmental variables relative to help-seeking behavior are prominent in the existing help-seeking models described previously. Variables such as low social support and public stigma, as well as financial, career, and logistical barriers, fit nicely into the constructs of barriers or consequences of the HBM and SRM, normative beliefs and subjective norms of the TPB, enabling resources of the BMH, and weighing costs versus benefits in Solomon's model. There is strong evidence in the literature for public stigma and various barriers as being associated with help-seeking behavior, particularly in veteran samples. There is less evidence in the literature for a direct relationship between social support and help-seeking behavior; however, data suggest a consistent relationship between social support and posttrauma adjustment, and further analysis is warranted. Therefore, this study incorporated social support, barriers as documented in Hoge et al. (2004), and public stigma into the help-seeking model.

Type of Help Sought

Non-veterans. In a non-veteran women's sample, Lewis et al. (2005) found both informal and formal help-seeking as positively correlated with younger age, greater education, history of sexual assault, and a diagnosis of PTSD or a Major Depressive Episode (MDE). In the same study, formal help-seeking was negatively correlated with African American or Hispanic participants. Many prior studies support Lewis et al.'s finding of individuals with PTSD or

MDE are much more likely to seek formal help (New & Berliner, 2000; Katz et al., 1997; Switzer et al., 1999). Lewis et al. (2005) also showed that women who reported a completed rape or other form of sexual assault were more likely to seek informal help, from a friend or relative, than were nonvictims. In a study by Coker, Derrick, Lumpkin, Aldrich, and Olendick, (2000), assault and domestic violence victims sought informal help from friends or family and that help was perceived to be beneficial.

Veterans. There were no veteran studies found that examined informal vs. formal help-seeking patterns. Hoge et al. (2004) found that 23% - 40% of veterans reported receiving services from any professional including a mental health professional, a general medical doctor, or a chaplain/clergy. Percentages of services received from a mental health professional only ranged from 13% - 27%, suggesting that many veterans seek mental health services from professionals not specifically identified as in the mental health field. This is consistent with other studies that report high rates of service use from a primary care physician rather than a psychologist or psychiatrist. In Calhoun et al. (2002) and Iverson et al. (2005), PTSD symptom severity was positively correlated with help-seeking from physicians but not from psychologists or mental health professionals. As mentioned previously, Solomon (1993) found that Israeli veterans sought contact for psychological problems first from their primary care physician.

Summary of Type of Help Sought

Although some literature exists on formal and informal correlates of help-seeking, the literature is scant. In the few civilian studies that examined informal sources of help-seeking, the sample included only women, so it is unclear what informal sources men are more likely to seek out. In addition, prior studies with veterans involving seeking help for a mental health problem indicated that veterans were concerned about confidentiality and the impact of seeking help on

their career. Given these concerns, veterans may be more likely to seek mental health services from informal sources or from sources outside the VA rather than risk their condition be documented within the VA system. The current study examined the likelihood of help-seeking from informal sources, formal sources within the VA, and formal sources in the private sector.

Summary

Studies of mental health care utilization among OEF/OIF veterans are ongoing. In Hoge et al. (2004), 78%-86% of those soldiers and Marines who perceived themselves as having a moderate or severe mental health problem also perceived the need for use of mental health services, but only 13% of OEF veterans, and 21%-27% of OIF veterans surveyed had actually received help from a mental health professional in the past year. The question remains, then, why a substantial number of veterans who perceived the need for mental health services chose not to seek help? Thus far, only a few studies exist which examine help-seeking behavior in OEF/OIF veterans.

Based on the literature of both veterans and non-veterans, many variables stand out as warranting further investigation for this OEF/OIF population. Internal psychological variables including attitudes, self-stigma, and self-efficacy, external and environmental variables including social support, public stigma, and barriers, and illness/need variables such as psychological and physical health all have shown significant relationships to help-seeking behavior in prior studies and were investigated for this population. Informal help-seeking has been investigated to some extent but only in samples of civilian women. Several studies in the literature report help-seeking for a mental health problem occurring with a primary care physician rather than a mental health professional. Finally, no studies have examined health care utilization for this population within the VA healthcare system versus the private sector.

The Present Study

This study had the primary goal of examining which variables best predict current help-seeking behavior and help-seeking intentions in returning OEF/OIF veterans. A new model of help-seeking that included internal psychological variables, external and environmental variables, and illness/need variables was examined. Internal psychological variables included attitudes towards psychotherapy, self-stigma, and self-efficacy. External and environmental variables included social stigma, social support, and barriers to seeking help. Finally, illness/need variables included a general assessment of physical health and psychological health. The main dependent variables in the study were the intention to seek help and actual help sought. Both variables were examined for either a psychological problem or a physical problem. In addition, actual help sought and help-seeking intentions from informal sources, formal sources within VA, and formal sources in the private sector were examined. The main conceptual model for this study of help-seeking for a psychological problem is depicted in Figure 1.

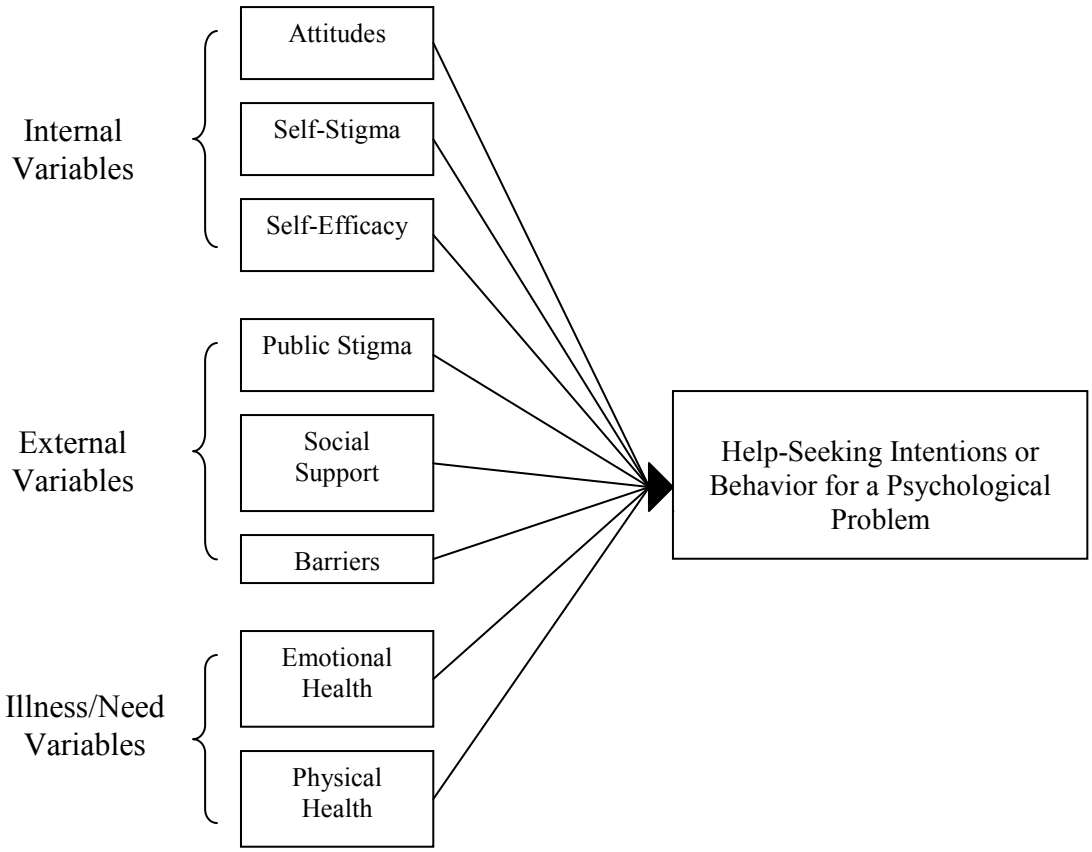

Figure 1. Hypothesized Model of Help-Seeking for a Psychological Problem

Main Hypotheses

Hypothesis 1. The final model of eight predictors will account for a moderate to high proportion of variance for help-seeking intentions related to a psychological problem. Specifically, it is expected that endorsing positive attitudes, high levels of psychological and physical problems, and low levels of self-stigma, public stigma, self-efficacy, social support, and barriers will positively predict reported help-seeking intentions for a psychological problem (see Figure 1).

Hypothesis 2. The final model of eight predictors will account for a moderate to high proportion of variance for past help-seeking behavior of a psychological problem. Specifically,

it is expected that endorsing positive attitudes, high levels of psychological and physical problems, and low levels of self-stigma, public stigma, self-efficacy, social support, and barriers will positively predict past help-seeking behavior for a psychological problem (see Figure 1).

Hypothesis 3. It is hypothesized that attitudes, self-stigma, public stigma, self-efficacy, social support, and barriers will not be predictive of help-seeking intentions for a physical problem and that endorsement of psychological and physical problems will positively predict help-seeking intentions for a physical condition (see Figure 2).

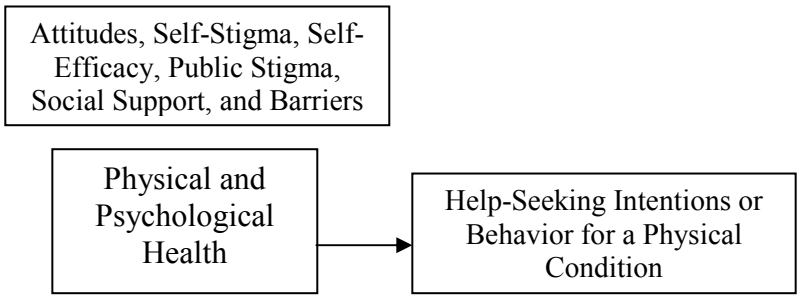

Figure 2. Hypothesized Model of Help-Seeking for a Physical Problem

Hypothesis 4. It is hypothesized that attitudes, self-stigma, public stigma, self-efficacy, social support, and barriers will not be predictive of past help-seeking behavior for a physical condition and that endorsement of psychological and physical problems will positively predict past help-seeking behavior of a physical condition (see Figure 2).

Secondary Hypothesis

Hypothesis 5. Assuming adequate sample size, an exploratory factor analysis of six of the independent predictors will reveal two main factors. Specifically, an internal psychological factor, consisting of self-stigma, self-efficacy, and attitudes, and an external/environmental

factor, consisting of public stigma, social support, and barriers will be found to be two unique and distinctive constructs (see Figure 3 for a conceptual model of the factors).

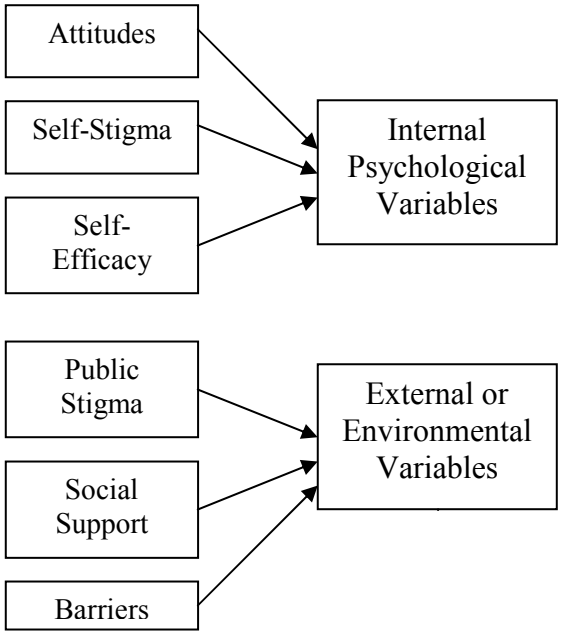

Figure 3. Hypothesized Model of Two Main Factors

Method

Participants

An initial database was constructed that consisted of 3,352 OEF/OIF veterans and active duty service members who served in OEF and/or OIF and had registered for physical or mental services at the Ann Arbor VA Healthcare System between October 2001 and July 2007. Those who had passed away, registered after July 31, 2007, or had an unknown register date or incomplete address were excluded from the database. The final database and the number of initial recruitment letters sent included 2,263 veterans and service members. Of those, 214 letters were returned due to invalid addresses, leaving the final survey sample at 2,049. Construction of the sample is outlined pictorially in Figure 4. Demographics obtained from the VA Computerized Patient Record System (CPRS) indicated that 87.8% of the survey population

was male and 12.2% was female. Race was unknown for 53% of individuals; however, the remaining sample indicated 42.3% were Caucasian, 3.7% African American, 0.5% Asian, 0.3% Native American, and 0.2% Native Hawaiian. Ages ranged from 20-65 years (M = 32.9, SD = 8.8) with 46.4% of the population documented as being unemployed, 36.9% with full time employment, and 8.5% employed part time. CPRS records indicated 42.1% of the sample as single, 39.3% married, and 11.9% as divorced. Forty-eight percent of the sample was service connected[1] and 98.5% were considered "non-active" from service.

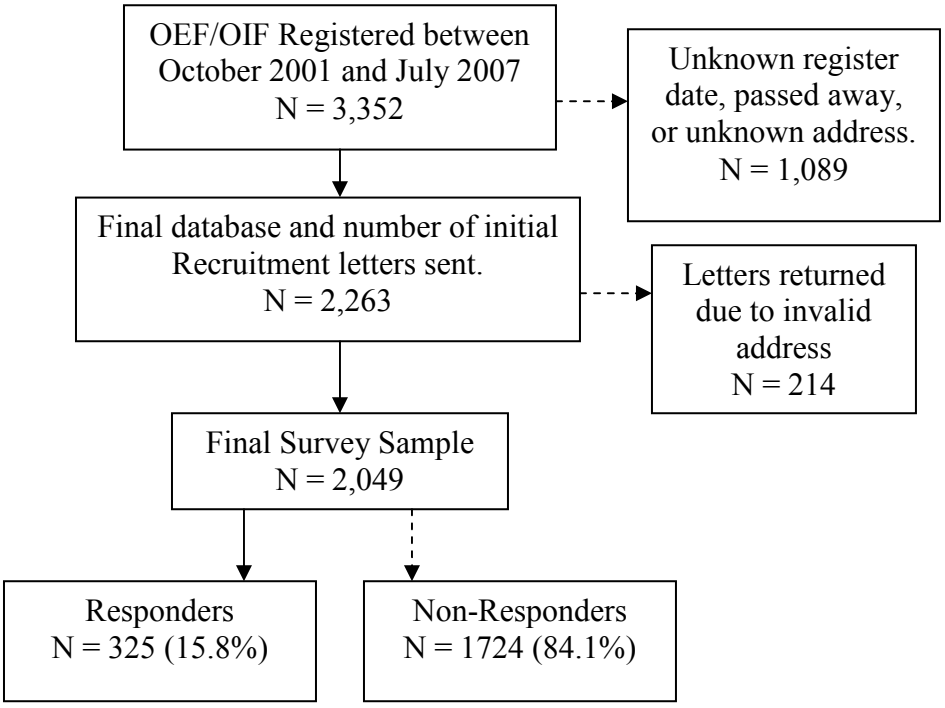

Figure 4. Construction of the Survey Sample

Sample Characteristics

The final number of participants were 325 veterans and active duty service members. Demographics data from the survey indicated that the majority of responders were male (86.2%), identified as Caucasian (87.7%), and ranged in age from 20-63 years (M = 35.52, SD = 9.7).

[1] Veterans are considered service-connected when their condition is attributable to their active military service and the degree of the service-connected disability (SCD) determines the veteran's eligibility for additional benefits.

Most of the sample indicated full-time employment (67.4%), are currently married (57.8%), and reported one or more children (57.5%). The sample consisted of primarily non-active duty (89.5%), endorsing 1-2 deployments (88.9%), spending approximately 6 months – 1 year in theater. Appendix F contains a summary of the demographic frequencies.

Using demographic data obtained from CPRS, a table was constructed enabling visual comparisons of the demographic data between the 325 responders to the survey versus the 1724 individuals who did not respond. Appendix G contains the demographic frequencies for both responders and non-responders. Non-responders were primarily male (88.1%) and served in the Army (69.3%). Many identified as Caucasian (41.5%); however, race was unknown for 50.6% of non-responders. The majority were non-active duty veterans (98.5%), unemployed (47.9%) or employed full time (35.9%), and 46.9% indicated some service connection.

Power Analysis

The main power analysis was conducted based on the final model of help-seeking including eight predictors: attitudes toward psychotherapy, self-stigma, self-efficacy, social stigma, social support, barriers, psychological health, and physical health. A multiple linear regression model was assumed using $\alpha = 0.05$. In Cohen (1988), an effect size of 0.15 was estimated based on expectations of a medium effect. For eight predictors, Cohen suggests a minimum sample size of 107. A slightly larger sample size of 114 was recommended by Field (2005), based on testing the overall fit of the regression model.

For an exploratory factor analysis, Tabachnick and Fidell (2001) recommend at least 300 cases as a general rule of thumb for a factor analysis. However, the authors state that smaller samples may suffice if the correlations between the variables are strong and there are fewer factors. In general, though, a sample size of 100 is considered poor, a sample size of 200 is

considered fair, 300 is considered good, 500 is considered very good, and 1000 is considered excellent (Tabachnick & Fidell, 2001). Given one dependent and eight independent variables, the final sample of 325 participants provided adequate power for both multiple and logistic regression analyses (Fields, 2005; Tabachnick & Fidell, 2001). In addition, the current study fulfilled Tabachnick and Fidell's (2001) recommended sample size for a "good" exploratory factor analysis.

Measures

The New Inventory of Attitudes toward Seeking Mental Health Services (IASMHS). The IASMHS is a self-report measure developed by MacKenzie, Knox, Gekoski, and Macaulay (2004). The measure is an adaptation and extension of Fischer and Turner's (1970) Attitudes Toward Seeking Psychological Help Scale (ATSPPHS). The new inventory consists of 24 items and three subscales: psychological openness (the extent to which individuals are open and acknowledge a psychological problem with the intent to seek help for that problem), help-seeking propensity (the extent to which an individual is willing or able to seek professional help), and indifference to stigma (the extent to which individuals are concerned about what others might think if they were to seek help for a psychological problem).

Items are rated on a 5-point Likert-type scale ranging from 0 (*disagree*) to 4 (*agree*), with 15 of the items reversed scored. Scores on the IASMHS range from 0 – 96, with higher scores reflecting more positive attitudes toward seeking counseling. A sample item is "If I were experiencing a serious psychological problem at this point in my life, I would be confident that I could find relief in psychotherapy." Internal consistency using Cronbach's alpha was 0.87 for the full scale, and three-week test–retest reliability was found to be 0.85 for the total score. Validity analysis demonstrated the ability of the IASMHS (0.33) to distinguish between those

who had sought help in the past and those who did not as well as discriminate between intentions to use professional and nonprofessional help. Analyses for the present study are based on the total score. The questionnaire takes approximately 5 minutes to complete.

Self-Stigma of Seeking Help Scale (SSOSH). The SSOSH is a 10-item scale designed to measure the self-stigma associated with seeking psychological help (Vogel et al., 2006). Items are rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The response of 3 is anchored by *agree and disagree equally*. Responses are summed to yield a total score, with higher scores indicating a greater level of self-stigma. A sample item is "It would make me feel inferior to ask a therapist for help." Internal consistency of the measure ranged from 0.86 to 0.90 in a college population. Test-retest reliability over a two-week period was shown to be 0.72 in the same sample. Vogel et al. found the SSOSH to be correlated with attitudes towards seeking psychological help (-0.63) as well as intentions to seek counseling (-0.38). The authors also found the SSOSH to distinguish those who had sought psychological services from those who did not. The questionnaire takes approximately 1-2 minutes to complete.

New General Self-Efficacy Scale (NGSE). The NGSE is an 8-item scale designed by Chen, Gully, and Eden (2001) to measure general trait-like self-efficacy, that is, the view of oneself as capable or incapable of performing successfully in a wide variety of situations. An example item is "When facing difficult tasks, I am certain that I will accomplish them." A total score is obtained by summing responses which are recorded on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) with higher scores reflecting a greater sense of self-efficacy. Internal consistency for the measure has been shown to range from 0.85 to 0.93

(Chen, Gully, & Eden, 2001; Chen, Gully, & Eden, 2004). The questionnaire takes approximately 1-2 minutes to complete.

Stigma Scale for Receiving Psychological Help (SSRPH). The SSRPH is a 5-item scale designed to measure an individual's perceptions of social stigma associated with seeking psychological help (Komiya et al, 2000). Items are rated on a 4-point scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*) with higher scores reflecting a greater perception of stigma for receiving psychological help. A sample item is "Seeing a psychologist for emotional or interpersonal problems carries social stigma." Measures of internal consistency for the scale were found to be 0.73 to 0.78 (Komiya et al., 2000; Vogel, Wester, Wei, & Boysen, 2005) and the measure was found to correlate (-.40) with attitudes toward seeking psychological help (Komiya et al, 2000). The questionnaire takes approximately 1-2 minutes to complete.

Interpersonal Support Evaluation List (ISEL-12). Perceived social support was assessed using the Interpersonal Support Evaluation List (ISEL; Cohen, Mermelstein, Kamarck, & Hoberman, 1985). The ISEL is a 12-item self-report measure designed to assess perceived availability of social support and is comprised of three subscales: appraisal, belonging, and tangible. The appraisal subscale measures the perceived availability of someone to talk to about one's problems, the belonging subscale measures the perceived availability of people with whom one can do things, and the tangible subscale measures the perceived availability of material aid.

Each subscale component is assessed by four items, two that describe the presence of support and two that describe the absence of support. For example, two of the statements used to assess tangible support are "If I were sick, I could easily find someone to help me with my daily chores" and "If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me." Responses are recorded on a 4-point Likert scale ranging

from 0 (*strongly disagree*) to 3 (*strongly agree*). Negative items are reverse scored and summed together with the positive items to form a score for each social type. A total social support score is formed by summing the three individual subscale scores ranging from 0-36, with a higher score indicating a higher level of social support.

Cronbach' s alpha for the original longer 40-item scale ranges from 0.85 to 0.90 (Biegel, Milligan, Putnam, & Song, 1994; Yancey, Greger, & Coburn, 1994). Although no reported reliabilities in the literature for the shorter version 12-item version have been found, the author stated that this version has demonstrated adequate reliability (S. Cohen, personal communication, October 10, 2000). Analyses for the present study are based on the total score. The questionnaire takes approximately 3-4 minutes to complete.

Perceived Barriers to Mental Health Checklist. This questionnaire first used in Hoge et al. (2004) was based on a study that assessed the perceived stigma of admitting a psychological problem versus a medical problem in a military sample (Britt, 2000). The questionnaire was originally composed of 13 items rated on 5-point Likert-type scales from 1 (*strongly agree*) to 5 (*strongly disagree*) and has not been validated. Perceived barriers include stigmatization, trust, logistical issues, and financial barriers to mental health services. Participants are asked to "check any barriers that might affect your decision to receive mental health services if you ever had a problem." In the present study, the questionnaire was used as a checklist ranging from 0 -15, with higher scores indicating more perceived barriers to getting help for a psychological problem. In this study, two questions were added to the original 13 items that address acknowledgement of a mental health issue as interfering with their career: "I wouldn't be able to return to work" and "My mental health problem would go on my record." The questionnaire takes approximately 3-5 minutes to complete.

The Medical Outcomes Study (MOS) 36-Item Short-Form Health Survey (SF-36). The SF-36 is a 36-item measure designed to assess the following eight multidimensional health concepts for an individual over the past four weeks: physical functioning (PF), role-physical (RP), bodily pain (BP), general physical health (GH), social functioning (SF), role-emotional (RE), vitality (VT), and general mental health (MH) perceptions (Ware, Snow, Kosinski, & Gandek, 1993; Ware, Kosinski, & Dewey, 2000). Internal consistency reliability coefficients for the eight subscales range from 0.77 to 0.93 (Ware & Gandek, 1998).

The subscales of the SF-36 are further condensed into two global ratings of mental and physical health: the Physical Component Score (PCS) and the Mental Component Score (MCS). The PCS comprises the PF, RP, BP, and GH subscales, and the MCS comprises the SF, RE, VT, and MH subscales. Internal consistency reliability coefficients are 0.88 for the MCS and 0.92 for the PCS (Ware & Gandek, 1998). Raw scores for the subscales as well as the PCS and MCS are normalized to scores that range from 0 to 100, with a mean of 50 (SD±10) for the general population. Higher scores on the subscales as well as the PCS and MCS indicate better health functioning (Ware, Kosinski, & Keller, 1994). Main analyses for the present study are based on the PCS and MCS scores. The questionnaire takes approximately 5-10 minutes to complete.

Actual Help-Seeking Questionnaire (AHSQ). The AHSQ is a questionnaire designed to examine past help-seeking behavior from informal and formal sources (Rickwood & Braithwaite, 1994). Participants provide a dichotomous "yes" or "no" response for each source they have gone to for advice or help in the past year for a psychological and/or physical problem. For each help source, respondents are asked to rate how helpful on a 5-point Likert scale from 1 (*very unhelpful*) to 5 (*very helpful*), with higher scores indicating that a particular source was more helpful.

Informal help sources include partner/spouse, family, friends, Internet, or self-help book. Formal help sources include a physician, psychiatrist, psychologist, or counselor from either the VA or the private sector as well as help from a member of the clergy. An additional item is included in the questionnaire that asks participants to identify other sources of help. For the current study, the AHSQ was used to generate two dichotomous (yes/no) dependent variables, one for a psychological problem and one for a physical problem, indicating help sought in the past year from any of the formal and informal sources listed previously. The level of helpfulness scores were used to describe the participant's responses. The questionnaire takes approximately 5-10 minutes to complete.

General Help-Seeking Questionnaire (GHSQ). The GHSQ is a questionnaire designed to assess the intentions or likelihood of an individual seeking help for a mental health problem (Deane, Wilson, Ciarrochi, 2001). Respondents are asked to rate the likelihood they would seek help from a variety of sources for a personal or psychological problem. The question is *If you were having an emotional and/or physical problem, how likely is it that you would seek help from the following people?* For each help source, respondents are asked to rate the likelihood they would seek help in the next year on a 7-point Likert scale from 1 (*extremely unlikely*) to 7 (*extremely likely*). Higher scores indicate a greater willingness to seek help. Informal and formal help sources are the same as described in the AHSQ. As with the AHSQ, an additional item is included in the questionnaire that asks participants to identify any other source of help.

For the current study, the GHSQ was used to generate two continuous dependent variables, one for a psychological problem and one for a physical problem, indicating help-seeking intentions in the next year from any of the formal and informal sources listed previously. An additional section of the GHSQ, not included in the total score, queries respondents on

having ever sought help from a mental health professional, number of visits, type of professional, and helpfulness of this experience. This section of the GHSQ was utilized for additional analyses described later. The questionnaire takes approximately 5-10 minutes to complete.

Procedure

Recruitment. The veterans and service members were contacted by mail and invited to participate in the Internet-based survey. The initial recruitment letter (see Appendix I) explained the purpose and importance of the proposed study, identified sponsorship, gave assurance of anonymity and confidentiality, included a unique personal identification number (PIN), and included instructions for accessing the survey Web site. Appropriate telephone numbers and email addresses were given if the respondents had questions or had difficulty accessing or completing the survey. Approximately 10-12 veterans experienced difficulty accessing the survey. This was easily remedied by emailing the direct link to the veteran.

The response rate from the first mailing was 183 (8.9%) participants. A reminder letter was sent approximately three weeks later (Czaja & Blair, 2005), yielding a final response of 325 (15.8%). Figure 5 gives an approximation of the pattern of responding throughout the survey.

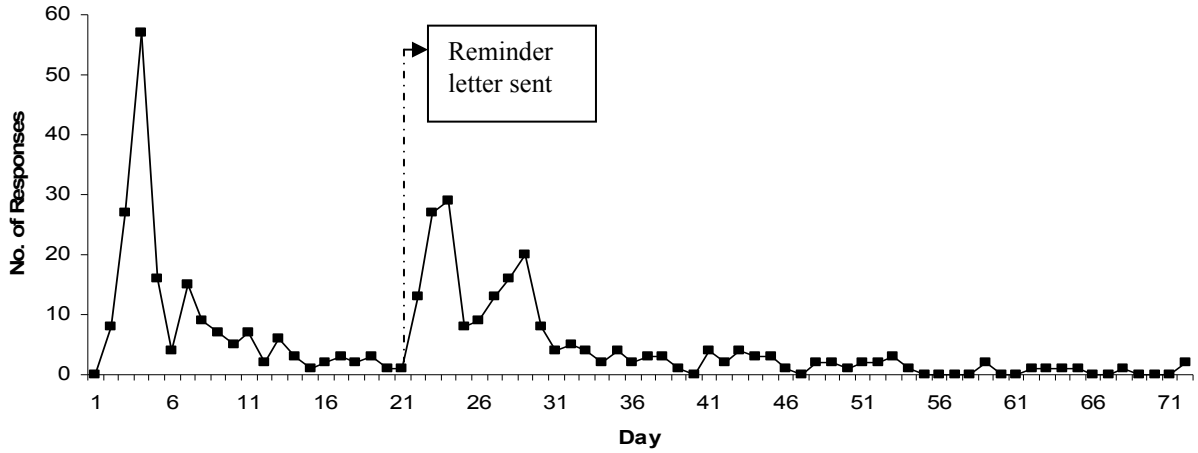

Figure 5: Approximation of Survey Response Pattern

Internet Survey. Veterans' access to the survey was through a commercial Internet survey service called Survey Monkey (www.surveymonkey.com). Prior research has shown the Internet to be a reliable and valid survey method (Miller, Neal, & Roberts, 2002), and in a recent study, Grice (2007) found that individuals were more likely to disclose highly personal information via the Internet than by traditional methods. The Surveymonkey.com account was password protected to ensure that only the investigator had access to the participants' responses. The online survey ran for three months, from June 1, 2008, through August 31, 2008. The web-based survey consisted of 11 questionnaires including a demographics questionnaire (Appendix H), the SF-36, the IASMHS, the SSOSH, the NGSE, the SSRPH, the ISEL, the Perceived Barriers Checklist, the GHSQ, and the AHSQ.

The survey was constructed so that participants could exit at any point. In addition, survey logic was such that a participant could not advance to the next question until the previous question had been answered, thus eliminating the problem of missing data. Ten surveys were discarded due to six invalid PINs and four duplicate PINs. In the case of duplicate PINs, the first occurrence of a completed survey was used.

Survey Costs/Compensation. The first 300 participants who completed the study had the option of receiving a $10 gift certificate to Target Corporation, but not all participants chose to receive a gift card. Of the final 325 participants who completed the entire survey, 283 gift cards were sent. Costs from the study included $2,830 for the gift cards, $60 for three months of the Survey Monkey web services, and a $250 licensing fee for the SF-36 questionnaires for a total cost of $3,140.00.

Ethical Treatment of Participants. The researchers for this study were committed to ensure the ethical treatment of participants. This research protocol and informed consent

document was reviewed and approved by the VA Ann Arbor Healthcare System and the Eastern Michigan University Human Subjects Review Committee (see Appendix J and Appendix K). Informed consent was obtained online from each participant prior to accessing the survey and is shown in Appendix L. The purpose of the study was explained in writing in the contact letter and again on the online consent form. Participants were informed that they could withdraw at any time during the study. All participants were informed and assured of confidentiality and anonymity. There were no names or addresses documented on the survey, as survey data were coded with a participant number only. In order to receive the $10 gift certificate, participants were directed to a separate survey and asked for a name and mailing address. Therefore, the participant's personal information was stored in a separate survey on the Survey Monkey website and not associated with their responses. Names and addresses were obtained for reimbursement purposes as well as Eastern Michigan University audit guidelines. There were no expected risks associated with the survey; however, emergency contact numbers for the Ann Arbor VA Healthcare System as well as the co-investigator were given in the letter and at the end of the survey.

Data Analysis

Hypothesis 1. "Eight independent variables will be predictive of help-seeking intentions for a psychological problem." A multiple linear regression analysis using SPSS was conducted that examined the strength of the relationship between the eight independent variables and the continuous dependent variable (help-seeking intentions for a *psychological* problem) from the GHSQ. As there were no specific hypotheses regarding the order of importance of the predictor variables, the analysis was run as a standard multiple regression, where all the independent

variables were entered simultaneously. In this way, the contribution made by each predictor over and above that of the other predictors was evaluated (Field, 2005; Tabachnick & Fidell, 2001).

Hypothesis 2. "Eight independent variables will be predictive of past help-seeking behavior for a psychological problem." A direct multiple logistic regression analysis was performed using SPSS that examined the strength of the relationship between the eight independent variables and the dichotomous dependent variable (past help-seeking behavior for a *psychological* problem) from the ASHQ. The analysis was run as a direct logistic regression, where all independent variables were entered simultaneously. As stated previously, this allows for evaluation of the contributions made by each predictor over and above that of the other predictors (Field, 2005; Tabachnick & Fidell, 2001).

Hypothesis 3. "Psychological and physical health will be predictive of help-seeking intentions for a physical problem." A multiple linear regression analysis was conducted that examined the strength of the relationship between the eight independent variables and the continuous dependent variable (help-seeking intentions for a *physical* problem) from the GHSQ. As there were no specific hypotheses regarding the order of importance of the predictor variables, the analysis was run as a standard multiple regression, where all the independent variables were entered simultaneously.

Hypothesis 4. "Psychological and physical health will be predictive of past help-seeking for a physical problem." A multiple logistic regression analysis was conducted that examined the strength of the relationship between the eight independent variables and the dichotomous dependent variable (past help-seeking behavior for a *physical* problem) from the ASHQ. The analysis was run as a direct logistic regression, where all independent variables were entered simultaneously.

Hypothesis 5. "*Six independent predictors will reveal two main factors.*" A principal components extraction and Varimax rotation was conducted using SPSS on the six independent variables of attitudes, self-stigma, self-efficacy, social support, public stigma, and barriers for purposes of categorizing the variables in terms of the theoretical constructs internal psychological and external/environmental factors. This type of analysis is considered a first step in an exploratory factor analytic procedure (Tabachnick & Fidell, 2001).

Additional Multiple Linear Regression Analyses. Additional regression analyses were conducted on help-seeking intentions for both *psychological* and *physical* problems from formal, informal, and VA sources. Separate multiple linear regression analyses using SPSS were conducted that examined the strength of the relationship between the eight independent variables and the continuous dependent variables (help-seeking intentions for a *psychological* and for a *physical* problem) from the GHSQ. Similar to the analyses for the main hypotheses, these analyses were run as standard multiple regressions, where all independent variables were entered simultaneously.

Additional Logistic Regression Analyses. Additional regression analyses were conducted on past help-seeking behavior from formal, informal, and VA sources for both *psychological* and *physical* problems. Separate direct logistic regression analyses using SPSS were conducted that examined the strength of the relationship between the independent variables and the dichotomous dependent variables (past help-seeking behavior for a *psychological* and for a *physical* problem) from the AHSQ. Similar to the analyses for the main hypotheses, these analyses were run as standard direct logistic regressions, where all independent variables were entered simultaneously.

Group Differences. A repeated measures ANOVA was conducted on the data for purposes of examining group differences between the variables found to be predictive coefficients within

the linear and logistic regression models of help-seeking. Prior to the analysis, transformation of the variables to z-scores was conducted for purposes of standardizing group means.

Results

No missing data, errors, or significant outliers were identified; therefore no transformations were performed on the data for the regression analyses. Evaluation of assumptions of normality, linearity, and homoscedasticity was performed. Visual examination of the residuals scatterplot indicated normal distribution about the predicted GHSQ dependent variable scores for both a psychological and a physical problem. The residuals appear to have a direct relationship with the predicted dependent variable scores and the variance of the residuals about the predicted dependent variable scores appear equal (see Figure 6 and Figure 7).

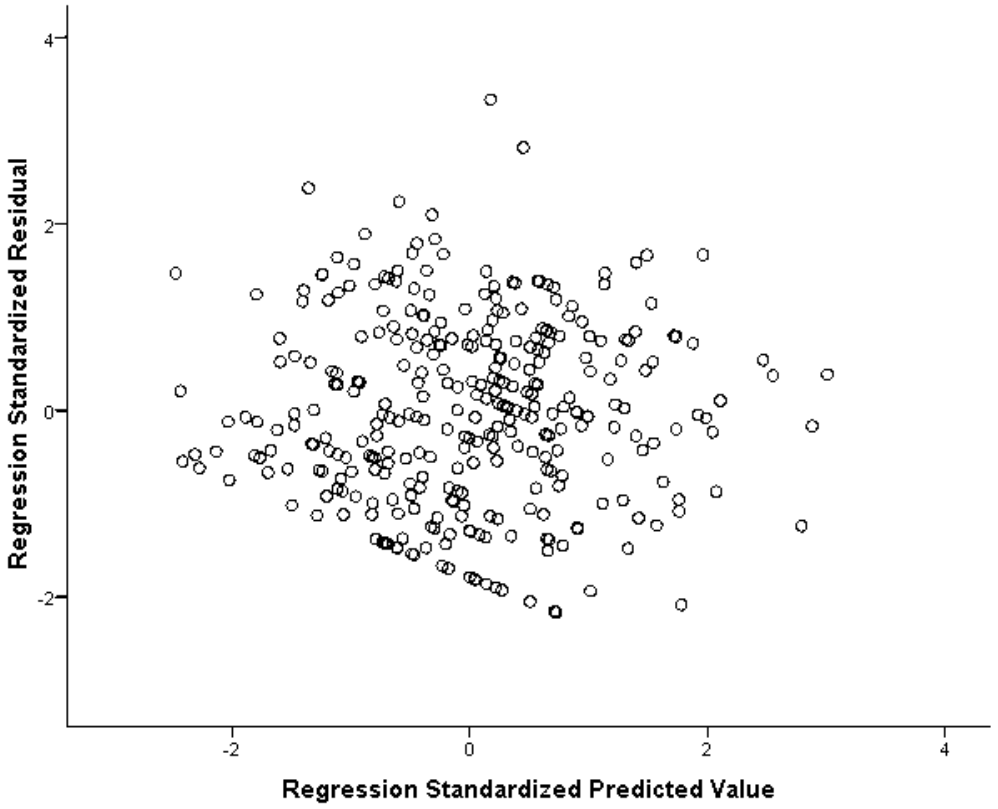

Figure 6. Residuals Scatterplot for GHSQ Psychological Problem

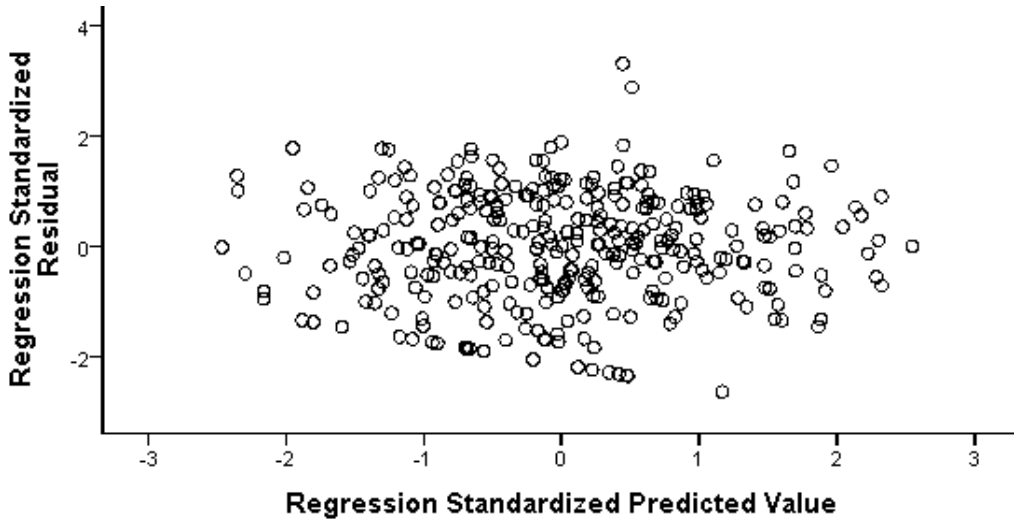

Figure 7. Residuals Scatterplot for GHSQ Physical Problem

Table 1 provides means and standard deviations of all study measures for the entire sample, as well as subgroups of those who sought help or not for a *psychological* problem in the past year. Included are means for those who sought help from formal sources for a psychological problem and those who did not seek that help. Finally, means and standard deviations are presented in Table 1 for those who did not seek help for either a psychological or a physical problem.

Means and standard deviations for those seeking help in the past for a *physical* problem are presented in Table 2. Statistics for those who sought help or not for a physical problem in the past year, including subgroups of formal sources of help-seeking, are presented. To aid the reader, the first and last columns duplicate those in Table 1 for purposes of comparison of the data.

Table 1

Means and Standard Deviations for Total and Subscale Scores of Study Measures for Survey Sample and Psychological Subgroups

Measure	Mean (SD) Total Sample (N = 325)	Mean (SD) Sought Help Psychological (n = 259)	Mean (SD) Did Not Seek Help Psych (n = 66)	Mean (SD) Sought Formal Psychological (n = 180)	Mean (SD) Did Not Seek Formal Psych (n = 145)	Mean (SD) Sought No Help Psych or Phy (n = 25)
GHSQ Total for a Psychological Problem	21.4 (9.0)	23.0 (8.2)	15.4 (9.3)	24.1 (7.9)	18.1 (9.2)	16.2 (9.3)
GHSQ Total for a Physical Problem	23.0 (8.0)	24.0 (7.4)	19.1 (9.0)	24.6 (7.3)	20.9 (8.4)	16.9 (9.5)
AHSQ Total for a Psychological Problem	0.8 (0.4)	----	----	1.0 (0.0)	0.5 (0.5)	----
AHSQ Total for a Physical Problem	0.9 (0.3)	0.9 (0.2)	0.6 (0.5)	0.95 (0.2)	0.8 (0.4)	----
Attitudes (IASMHS)	56.0 (16.6)	56.0 (16.2)	57.2 (17.9)	56.0 (16.4)	57.0 (16.8)	58.8 (15.5)
HS Propensity	21.5 (5.7)	21.5 (5.8)	21.6 (5.4)	21.7 (5.9)	21.2 (5.6)	21.8 (5.4)
Psych Openness	16.8 (6.5)	16.7 (6.3)	16.9 (7.3)	17.0 (6.5)	16.4 (6.6)	16.5 (7.0)
Indiff. to Stigma	17.7 (7.8)	17.5 (7.6)	18.7 (8.6)	16.8 (7.5)	18.9 (8.0)	20.5 (7.4)
Social Support (ISEL)	23.8 (8.5)	23.0 (8.5)	26.9 (7.8)	21.7 (8.4)	26.4 (7.9)	27.3 (7.7)
Appraisal	7.8 (3.2)	7.6 (3.2)	8.8 (3.0)	7.0 (3.1)	8.8 (3.0)	9.0 (3.0)
Belonging	7.7 (3.2)	7.4 (3.2)	9.0 (2.9)	6.9 (3.2)	8.7 (2.9)	8.9 (2.6)
Tangible	8.3 (2.9)	8.0 (2.9)	9.1 (2.7)	7.7 (2.9)	8.9 (2.7)	9.4 (2.7)

Symptom Severity (SF-36)						
PCS	48.0 (8.7)	47.6 (9.0)	49.5 (7.4)	46.5 (9.6)	49.8 (7.2)	52.5 (5.2)
MCS	42.3 (13.9)	40.0 (13.7)	53.2 (8.5)	36.0 (13.3)	50.2 (10.1)	51.3 (9.1)
Physical Functioning	77.7 (25.9)	75.5 (26.2)	86.5 (22.7)	71.3 (27.3)	85.8 (21.7)	89.8 (23.7)
Role Physical	66.5 (40.7)	61.2 (42.3)	87.5(23.3)	53.1 (43.0)	83.3 (30.2)	91.0 (20.3)
Bodily Pain	61.2 (26.7)	58.1 (26.7)	73.5 (22.8)	53.5 (28.0)	70.8 (22.0)	83.2 (20.3)
Physical Health	61.5 (23.4)	58.2 (23.0)	74.6 (20.1)	53.2 (23.0)	71.8 (19.5)	79.2 (13.5)
Social Functioning	67.7 (28.8)	62.0 (28.5)	90.0 (16.3)	54.2 (27.9)	84.3 (19.8)	90.5 (15.8)
Role Emotional	63.7 (42.7)	56.5 (43.7)	92.0 (22.7)	48.3 (43.6)	82.8 (32.9)	86.7 (27.2)
Vitality	50.3 (22.8)	47.0 (22.5)	63.4 (19.3)	41.6 (21.9)	61.1 (19.1)	63.8 (19.3)
Mental Health	61.3 (22.5)	57.0 (22.0)	78.3 (15.4)	50.7 (21.0)	74.6 (16.6)	76.5 (16.2)
Self-Efficacy (NGSE)	31.0 (6.2)	30.3 (6.3)	34.0 (4.8)	28.7 (6.4)	33.9 (4.7)	33.8 (5.4)
Self-Stigma (SSOSH)	28.6 (3.1)	28.7 (3.1)	28.1 (3.3)	28.7 (3.3)	28.4 (2.9)	27.5 (4.0)
Barriers Checklist (No.of Barriers Endorsed)	3.6 (2.8)	3.8 (2.8)	3.2 (2.9)	3.9 (3.0)	3.3 (2.7)	2.3 (2.2)
Social Stigma (SSRPH)	7.1 (3.0)	7.4 (2.9)	6.2 (3.2)	7.6 (2.9)	6.6 (3.0)	5.3 (3.3)

Table 2

Means and Standard Deviations for Total and Subscale Scores of Study Measures for Survey Sample and Physical Subgroups

Measure	Mean (SD) Total Sample (N = 325)	Mean (SD) Sought Help Physical (n = 284)	Mean (SD) Did Not Seek Physical (n = 41)	Mean (SD) Sought Formal Physical (n = 263)	Mean (SD) Did Not Seek Formal Physical (n = 62)	Mean (SD) Sought No Help Psych or Phy (n = 25)
GHSQ Total for a Psychological Problem	21.4 (9.0)	22.0 (8.9)	17.5 (8.8)	22.0 (9.0)	18.9 (8.4)	16.2 (9.3)
GHSQ Total for a Physical Problem	23.0 (8.0)	24.9 (7.4)	16.5 (8.8)	24.1 (7.5)	18.2 (8.5)	16.9 (9.5)
AHSQ Total for a Psychological Problem	0.8 (0.4)	0.9 (0.4)	0.4 (0.5)	0.9 (0.4)	0.6 (0.5)	-----
AHSQ Total for a Physical Problem	0.9 (0.3)	----	----	----	----	------
Attitudes (IASMHS)	56.0 (16.6)	55.6 (16.6)	58.6 (16.2)	56.0 (16.8)	56.2 (15.7)	58.8 (15.5)
HS Propensity	21.5 (5.7)	21.5 (5.8)	21.4 (5.6)	21.6 (5.9)	21.3 (5.2)	21.8 (5.4)
Psych Openness	16.8 (6.5	16.7 (6.5)	17.0 (6.5)	17.0 (6.5)	15.9 (6.5)	16.5 (7.0)
Indiff. to Stigma	17.7 (7.8)	17.4 (7.7)	20.2 (7.9)	17.4 (7.8)	19.0 (7.8)	20.5 (7.4)
Social Support (ISEL)	23.8 (8.5)	23.5 (8.6)	25.8 (7.5)	23.5 (8.6)	25.3 (7.6)	27.3 (7.7)
Appraisal	7.8 (3.2)	7.7 (3.2)	8.6 (2.8)	7.7 (3.2)	8.5 (3.0)	9.0 (3.0)
Belonging	7.7 (3.2)	7.7 (3.2)	8.0 (3.0)	7.7 (3.3)	8.0 (2.9)	8.9 (2.6)
Tangible	8.3 (2.9)	8.1 (2.9)	9.2 (2.6)	8.1 (2.9)	8.8 (2.7)	9.4 (2.7)

Symptom Severity (SF-36)						
PCS	48.0 (8.7)	47.1 (8.8)	54.0 (5.2)	46.7 (8.9)	53.4 (5.4)	52.5 (5.2)
MCS	42.3 (13.9)	41.7 (13.9)	46.6 (13.2)	41.4 (13.9)	46.0 (13.5)	51.3 (9.1)
Physical Functioning	77.7 (25.9)	75.7 (26.1)	92.2 (19.0)	74.4 (26.4)	91.9 (18.2)	89.8 (23.7)
Role Physical	66.5 (40.7)	63.0 (41.5)	90.9 (22.2)	61.5 (42.2)	87.9 (23.8)	91.0 (20.3)
Bodily Pain	61.2 (26.7)	57.8 (26.0)	85.1 (17.9)	57.0 (26.2)	79.5 (20.2)	83.2 (20.3)
Physical Health	61.5 (23.4)	59.4 (23.5)	75.7 (17.3)	58.4 (23.3)	74.5 (18.7)	79.2 (13.5)
Social Functioning	67.7 (28.8)	65.4 (28.7)	83.2 (24.3)	64.4 (28.6)	81.5 (25.4)	90.5 (15.8)
Role Emotional	63.7 (42.7)	60.9 (43.3)	82.9 (33.4)	59.9 (43.3)	79.6 (36.4)	86.7 (27.2)
Vitality	50.3 (22.8)	49.4 (23.0)	56.7 (21.0)	48.7 (23.2)	56.9 (19.9)	63.8 (19.3)
Mental Health	61.3 (22.5)	60.4 (22.6)	68.0 (21.2)	59.9 (22.4)	67.3 (22.2)	76.5 (16.2)
Self-Efficacy (NGSE)	31.0 (6.2)	30.7 (6.3)	33.2 (5.6)	30.6 (6.4)	32.9 (5.5)	33.8 (5.4)
Self-Stigma (SSOSH)	28.6 (3.1)	28.7 (3.0)	28.1 (3.3)	28.7 (3.0)	28.2 (3.5)	27.5 (4.0)
Barriers Checklist (No.of Barriers Endorsed)	3.6 (2.8)	3.8 (2.8)	2.7 (2.8)	3.8 (2.8)	3.2 (2.8)	2.3 (2.2)
Social Stigma (SSRPH)	7.1 (3.0)	7.3 (2.9)	5.9 (3.4)	7.3 (2.9)	6.3 (3.3)	5.3 (3.3)

Bivariate Correlations

Main Predictor and Outcome Variables. Pearson product-moment bivariate correlations were computed to evaluate the strength of the relationship between the eight main independent variables and the four dependent variables, past and future help-seeking for a psychological or physical problem. Table 3 summarizes these correlation coefficients based on total scores. Results indicated significant correlations on many of the total scores at the $p < .01$ level. No correlations were found at the 0.8 or 0.9 level; therefore collinearity was not violated, based on the strength of the relationship between predictor variables.

The relationship between attitudes and public stigma yielded the highest correlation coefficient ($r = -0.67$, $p < .01$) suggesting that more positive attitudes towards psychotherapy are associated with lower levels of social stigma. The relationship between attitudes and barriers yielded the next highest correlation coefficient ($r = -0.64$, $p < .01$) suggesting fewer barriers is associated with more positive attitudes towards seeking psychotherapy. More barriers was positively correlated with public stigma ($r = 0.59$, $p < .01$) and higher levels of self-efficacy was strongly correlated with higher levels of social support ($r = 0.50$, $p < .01$).

Table 3

Pearson Product Bivariate Correlations for the Main Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Attitudes	~~	-0.64**	-0.37**	0.21**	-0.67**	0.40**	0.08	0.30**	-0.04	0.34**	-0.06	0.29**
2. Barriers	~~	~~	0.27**	-0.19**	0.59**	-0.33**	-0.02	-0.34**	0.09	-0.17**	0.13*	-.17**
3. Self-Stigma			~~	-0.05	0.35**	-0.21**	-0.03	-0.14*	0.09	0.05	0.11	-0.06
4. Self-Efficacy				~~	-0.21**	0.50**	0.36**	0.62**	-0.24**	-0.12*	-0.14*	-0.06
5. Public Stigma					~~	-0.35**	-0.04	-0.41**	0.16**	-0.10	0.16**	-0.07
6. Social Support						~~	0.14*	0.54**	-0.19**	0.10	-0.09	0.14*
7. Physical Component Summary							~~	0.02	-0.09	-0.02	-0.26**	-0.13*
8. Mental Component Summary								~~	-0.40**	-0.15**	-0.12*	-0.04
9. Past Help-All Formal/Informal for a Psychological Problem									~~	0.34**	0.38**	0.24**
10. Future Help-All Formal/Informal for a Psychological										~~	0.17**	0.81**

	1	2	3	4	5	6	7	8	9	10	11	12
Problem												
11. Past Help-All Formal/Informal for a Physical Problem											~~	0.31**
12. Future Help-All Formal/Informal for a Physical Problem												~~

Note. Pearson correlation values are presented, * $p < .05$, ** $p < .01$. $N = 325$.

Results of the analyses indicated that positive attitudes, lower numbers of barriers, lower self-efficacy, low public stigma, and endorsement of physical and mental health problems was associated with intentions to seek help for a psychological problem. Regarding past help-seeking behavior for a psychological problem, endorsement of mental health problems, lower social support, and lower self-efficacy were significantly correlated with the outcome variable. Public stigma, although significant, was expected to be associated negatively with the outcome and results indicated otherwise. Physical health status, attitudes, barriers, and self-stigma were not found to be correlated with past help-seeking behavior for a psychological problem.

Positive attitudes, low barriers, higher social support, and poorer physical health were found to be significantly correlated with help-seeking intentions for a physical problem, with attitudes yielding the strongest correlation ($r = 0.29$, $p < .01$). For past help-seeking for a physical problem, results indicated no relationship between the dependent variable and attitudes, self-stigma, and social support as hypothesized. Small correlations were found in barriers, self-efficacy, public stigma, and mental health status. The strongest correlation was found in physical health status ($r = -0.26$, $p < .01$).

Demographics, Predictors, and Outcomes. Pearson product-moment bivariate correlations were computed to evaluate the strength of the relationship between the demographic variables and the independent and dependent variables; they are presented in Table 4. Among the strongest correlations were those between the veteran's endorsement of current physical and mental health problems and their service connection, with ($r = -0.42$, $p < .01$) between mental health status and mental health service connection. Also strong was the relationship between physical health service connection and physical health status ($r = -0.37$, $p < .01$). Seeking Service connection was positively correlated with self-efficacy ($r = 0.23$, $p < .01$) while currently

being service connected was negative correlated with self-efficacy for both mental health (r = -0.42, p < .01) and physical health (r = -0.17, p < .01) problems respectively.

Employment status was significantly negatively correlated with several variables including self-efficacy, social support, presence of mental and physical health problems, and past help-seeking for a psychological problem. Gender was found to be associated with attitudes, and age was associated with self-efficacy, physical health status, and both past and future help-seeking for a physical problem.

Table 4

Bivariate Correlations of Demographic Variables by Predictor and Outcome

	Attitude	Barrier	Self Stigma	Efficacy	Public Stigma	Social Support	MCS	PCS	Past Help Psych	Past Help Phy	Future Help Psych	Future Help Phy
Gender	0.20**	-0.09	-0.08	0.01	-0.09	0.06	0.1	-0.04	-0.06	-0.01	0.02	0.05
Age	0.04	-0.1	-0.004	-0.14**	0.01	-0.05	0.01	-0.14**	-0.02	0.16**	0.09	0.18**
Race	-0.09	0.1	-0.02	0.02	0.01	-0.04	-0.03	0.02	0.001	-0.04	-0.04	-0.08
Branch of Service	0.02	0.01	0.01	-0.1	0.02	-0.06	-0.08	0.03	0.12*	0.04	0.07	0.02
Relationship Status	0.08	-0.02	0.04	0.05	0.001	-0.18**	-0.02	0.14*	0.06	-0.05	-0.08	-0.13*
Number of Children	-0.07	0.04	0.03	-0.12*	0.03	-0.01	-0.05	-0.1	-0.03	0.02	0.11*	0.08
Employment Status	-0.01	0.09	0.09	-0.33**	0.05	-0.20**	-0.28**	-0.21**	0.14**	0.06	0.07	-0.01
Time Back	0.04	0.005	-0.05	0.06	0.05	0.01	0.04	-0.03	-0.03	-0.05	-0.02	-0.01
Total Time	-0.06	0.00	0.05	0.06	0.05	0.09	-0.06	0.05	-0.01	-0.1	-0.11	-0.14*
Number of Deployments	-0.1	0.05	0.04	-0.07	0.00	-0.1	-0.09	-0.02	0.04	0.01	0.01	0.02
Active Duty	-0.14*	0.05	0.04	-0.07	0.12*	-0.09	-0.07	-0.13*	-0.02	0.05	-0.06	-0.03
Service Connected	-0.04	0.07	0.14**	0.05	-0.01	-0.01	-0.08	0.29**	0.01	-0.20**	0.03	-0.08
%Physical	0.03	-0.04	-0.02	-0.17**	0.02	-0.09	-0.11	-0.37**	0.17**	0.20**	0.08	0.1
%Mental	-0.06	0.09	0.12*	-0.42**	0.19**	-0.22**	-0.42**	-0.41**	0.17**	0.08	0.18**	0.12*
Seeking Service Connection	0.11	-0.08	-0.02	0.23**	-0.16**	0.11*	0.26**	0.38**	-0.15**	-0.14**	-0.12*	-0.11*

Note. Pearson correlation values are presented, * $p < .05$, ** $p < .01$. $N = 325$.

Main Hypotheses

Hypothesis 1. The final model of eight predictors will account for a moderate to high proportion of variance for help-seeking intentions related to a psychological problem. Specifically, it is expected that endorsing high levels of psychological and physical problems, positive attitudes, and low levels of self-stigma, public stigma, self-efficacy, social support, and barriers will positively predict reported help-seeking intentions for a psychological problem.

Results of the regression indicated a significant model fit with $F(8, 316) = 10.77$, $p < .001$. In total, the eight independent variables accounted for 21.4% of variance in predicting help-seeking intentions for a psychological problem. Regression coefficients for this analysis are provided in Table 5. Collinearity in the data was assessed by examining the variance inflation factor (VIF) and the tolerance statistic, with results indicating collinearity assumptions were not violated. Attitudes towards psychotherapy, social support, and current mental health status were found to be significant coefficients within the model.

Table 5

Regression Coefficients for Help-Seeking Intentions from All Sources for a Psychological Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	7.4 (6.5)		1.1	0.3	-5.4 – 20.2
Attitudes Total	0.3 (.04)	0.5	6.2	0.0**	0.2 – 0.3
Barriers Total	-0.1 (0.2)	-0.02	-0.3	0.8	-0.5 – 0.4
Self-Stigma Total	0.2 (0.2)	0.1	1.4	0.2	-0.1 – 0.5
Physical Component Summary	-0.04 (0.06)	-0.04	-0.6	0.5	-0.1- 0.1
Mental Component Summary	-0.2 (0.05)	-0.3	-3.6	0.0**	-0.3 - -0.1
Self-Efficacy Total	-0.1 (0.1)	-0.1	-1.3	0.2	-0.3 – 0.1
Public Stigma Total	0.4 (0.2)	0.1	1.8	0.1	-0.04 – 0.8
Social Support Total	0.2 (0.1)	0.2	2.6	0.01**	0.04 – 0.3

Note. ** = significant at $p < .01$.
$R^2 = 0.214$, $R^2_{adj} = 0.194$.

Given the significance of attitudes towards seeking psychotherapy and social support, an additional regression analysis was conducted that examined the contribution of the subscales of these coefficients. Help-seeking propensity and indifference to stigma were found to be significant coefficients in addition to mental health problems. Interestingly, separating the social support variable into its component subscales rendered this variable non-significant in this regression model.

In one additional analysis, for those who endorsed seeking help in the past for a psychological problem (n = 215), the level of helpfulness variable was found to be a significant

predictor, $p < .005$. The addition of this variable into the model increased the amount of variance accounted for help-seeking intentions to 25.5%, with $F(9, 206) = 7.823$, $p < .01$.

Hypothesis 2. The final model of eight predictors will account for a moderate to high proportion of variance for past help-seeking behavior of a psychological problem. Specifically, it is expected that endorsing high levels of psychological and physical problems, positive attitudes, and low levels of self-stigma, public stigma, self-efficacy, social support, and barriers will positively predict past help-seeking behavior for a psychological problem.

Regression results indicated that the overall model fit was not strong (-2 log likelihood = 254.4) but was statistically reliable in distinguishing between those who sought past help and those who did not, $X^2(7) = 73.6$; $p < .01$. With this model, 80.9% of the participants were correctly classified as either having sought help or not; however, the constant only model correctly *classified* 79.7% participants. Regression coefficients are presented in Table 6. Wald statistics indicated that attitudes toward psychotherapy, mental health status, and physical health status were the only significant predictors of past help-seeking behavior; the remaining regression coefficients did not approach significance. However, even though statistically significant, odds ratios of 1.03 (attitudes), 0.96 (physical component summery), and 0.88 (mental component summary) showed little change based on the likelihood of one unit change in past help-seeking behavior. Mental health status yielded the strongest relationship with past help-seeking with results from the odds ratios indicating that veterans with mental health problems were 12% more likely to seek help for psychological problems.

Table 6

Regression Coefficients for Predictors of Past Help-Seeking from All Sources for a Psychological Problem

	B (SE)	*Wald*	*p*	Odds Ratio	95% Confidence Interval
Constant	5.03(2.65)	3.6	0.06	152.97	
Attitudes	0.03(0.02)	4.7	.03*	1.03	1.0 – 1.1
Barriers	0.004(0.1)	0.003	0.96	1.00	0.86 – 1.2
Self-Stigma	0.06(0.06)	0.82	0.37	1.06	0.94 – 1.2
Physical Component Summary	-0.05(0.02)	4.23	0.04*	0.96	0.91 – 0.99
Mental Component Summary	-0.13(0.02)	28.3	0.00**	0.88	0.84 – 0.92
Self-Efficacy	0.02(0.04)	0.18	0.67	1.02	0.94 – 1.1
Public Stigma	0.06(0.08)	0.52	0.47	1.1	0.91 – 1.2
Social Support	0.02(0.03)	0.63	0.43	1.02	0.97 – 1.1

Note. * = significant at $p < .05$, ** = significant at $p < .01$.

Based on this weak model fit, an exploratory analysis was conducted to determine if results would differ if some of the data were represented dichotomously. For those who sought help in the past, the sample was evenly distributed across a range of scores for the Mental Component Summary. However, the sample was positively skewed for those not endorsing help-seeking in the past year. Based on the distribution of this sample, the database was divided into two groups: those who scored higher on the MCS, indicating better mental health functioning, and those with lower scores. A cutoff score of 42 for the MCS (Ware, 1996) was selected based on prior studies using the MCS to diagnose depression as well as

recommendations from researchers affiliated with the SF-36 measure. The logistic regression analysis was then run with the remaining seven predictor variables entered simultaneously.

For those with better mental health status (n = 182), results indicated that the overall model fit still was not strong (-2 log likelihood = 160.6) but was statistically reliable in distinguishing between those who sought past help and those who did not, $X^2(7) = 20.5$; $p < .01$, Nagelkerke $R^2 = .169$. With this model, 82.4% of the participants were correctly classified as either having sought help or not; however, the constant only model correctly classified 80.2% participants. The beta statistic (-0.1) indicated that lower self-efficacy was the only significant predictor of past help-seeking behavior, with an odds ratio, *exp(b)* = 0.884.

For those with mental health problems (n = 143), results also indicated a model fit that was not strong (-2 log likelihood = 129.6) but was statistically reliable in distinguishing between those who sought past help and those who did not, $X^2(7) = 17.3$; $p < .05$. With this model, 79% of the participants were correctly classified as either having sought help or not, showing no improvement over the constant only model (79%). Positive attitudes (*exp(b)* = 1.05) and higher levels of public stigma (*exp(b)* = 1.34) were found to be significant predictors of past help-seeking behavior. Results indicated that veterans with more favorable attitudes were 5% more likely to have sought help and veterans with higher social stigma were 34% more likely to have sought help for a psychological problem in the past year. Results of the split group logistic analyses are presented in Table 7.

An additional split group logistic regression analysis was conducted that examined the individual contribution of the subscales of attitudes toward seeking psychotherapy. For those with mental health problems, only public stigma was a significant coefficient in the model, the attitudes subscales when analyzed separately not making a unique contribution to the model.

Table 7

Split Groups Logistic Regression Analysis for Predictors of Past Help-Seeking from All Sources for a Psychological Problem

	B (SE)	*Wald*	*p*	Odds Ratio	95% Confidence Interval
No Mental Health Problem (n = 182)					
Constant	3.3(3.1)	1.2	0.3	27.8	
Self-Efficacy	-0.12(0.05)	6.5	0.01**	0.884	0.81 – 0.97
Yes Mental Health Problem (n = 143)					
Constant	-2.04(3.4)	0.37	0.5	0.13	
Attitudes	0.05(0.02)	5.4	0.02*	1.05	1.01 – 1.1
Public Stigma	0.29(0.11)	6.9	0.01**	1.34	1.08 – 1.66

Note. * = significant at $p < .05$, ** = significant at $p < .01$.

Hypothesis 3. It is hypothesized that positive attitudes, self-stigma, public stigma, self-efficacy, social support, and barriers will not be predictive of help-seeking intentions for a physical problem and that endorsement of psychological and physical problems will positively predict help-seeking intentions for a physical condition.

Results indicated the model was significant with $F(8, 316) = 7.3$, $p < .01$. In total, the eight independent variables accounted for 15.6% of variance in predicting help-seeking intentions for a physical problem. Regression coefficients for this analysis are provided in Table 8. Attitudes towards psychotherapy, social support, public stigma, and current physical health status were found to be significant coefficients within the model.

Given the significance of the coefficients' attitudes towards seeking psychotherapy and social support, an additional regression analysis was conducted that examined the contribution of

the subscales of these coefficients. In addition to physical health problems, help-seeking propensity was found to be significant in the attitudes scale and belonging was found to be significant in the social support measure.

Table 8

Regression Coefficients for Help-Seeking Intentions from All Sources for a Physical Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	95% Confidence Interval
Constant	14.8 (6.02)		2.5	0.01**	2.98 – 26.7
Attitudes Total	0.19 (.04)	0.39	5.04	0.00**	0.12 – 0.27
Barriers Total	-0.1 (0.20)	-0.04	-0.51	0.6	-0.5 – 0.3
Self-Stigma Total	0.09 (0.15)	0.04	0.63	0.53	-0.19 – 0.38
Physical Component Summary	-0.14 (0.05)	-0.16	-2.7	0.00**	-0.25 – -0.04
Mental Component Summary	-0.08 (0.04)	-0.15	-1.9	0.059	-0.17 0.003
Self-Efficacy Total	-0.06 (0.1)	-0.04	-0.57	0.57	-0.25 – 0.14
Public Stigma Total	0.5 (0.2)	0.18	2.4	0.02*	0.09 – 0.9
Social Support Total	0.16 (0.06)	0.17	2.5	0.01**	0.03 – 0.28

Note. *= significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.156$, $R^2_{adj} = 0.135$.

Hypothesis 4. It is hypothesized that positive attitudes, self-stigma, public stigma, self-efficacy, social support, and barriers will not be predictive of past help-seeking behavior for a physical condition and that endorsement of a psychological and a physical condition will positively predict past help-seeking behavior of a physical condition.

Regression results indicated that the overall model fit was not strong (-2 log likelihood = 200.7) but was statistically reliable in distinguishing between those who sought past help and those who did not, $X^2(7) = 45.66$; $p < .01$, Nagelkerke $R^2 = .247$. With this model, 87.4% of the participants were correctly classified as either having sought help or not, showing no improvement over the constant only model. Regression coefficients are presented in Table 9. Wald statistics indicated that attitudes toward seeking mental health services and current physical health status were significant predictors of past help-seeking behavior.

Table 9

Regression Coefficients for Predictors of Past Help-Seeking from All Sources for a Physical Problem

	B (SE)	*Wald*	*p*	Odds Ratio	95% Confidence Interval
Constant	4.8 (3.1)	2.3	0.13	116.6	
Attitudes	0.04 (0.02)	4.1	0.04*	1.04	1.00 – 1.07
Barriers	0.16 (0.1)	2.9	0.09	1.18	0.98 – 1.42
Self-Stigma	0.1 (0.07)	2.1	0.14	1.1	0.97 – 1.27
Physical Component Summary	-0.16 (0.04)	19.37	0.00**	0.85	0.79 – 0.92
Mental Component Summary	-0.03 (0,02)	2.1	0.15	0.97	0.93 – 1.01
Self-Efficacy	0.008 (0.04)	0.03	0.86	1.01	0.92 – 1.1
Public Stigma	0.13 (0.09)	2.19	0.14	1.14	0.96 – 1.36
Social Support	0.01 (0.03)	0.08	0.78	1.01	0.95 – 1.07

Note. * = significant at $p < .05$, ** = significant at $p < .01$.

Due to the skewed distribution of PCS scores, the analysis was conducted in split groups, those who scored higher on the PCS and those who scored lower to determine if results from the previous logistical analysis would differ. Since no cutoff score currently exists in the literature, it was recommended by researchers affiliated with the SF-36 measure to use a cutoff of 1 SD below the mean (PCS $\leq$ 40) as representing those with physical health problems.

The remaining seven predictor variables were entered then simultaneously as a direct logistic regression. However, there were not enough cases in each category to run the regression analyses for those with physical health problems; therefore, the analysis was run solely on those with better physical health status (n = 263). Results indicated that the overall model fit was not strong (-2 log likelihood = 213.9) and not statistically significant in distinguishing between those who sought past help and those who did not, $X^2(7) = 12.7$; $p = .06$. With this model, 84.8% of the participants were correctly classified as either having sought help or not, showing little improvement over the constant only model at 84.4%.

Secondary Hypothesis

Hypothesis 5. An exploratory factor analysis of six of the independent predictors will reveal two main factors. Specifically, an internal psychological factor, consisting of self-stigma, self-efficacy, and attitudes, and an external/environmental factor, consisting of public stigma, social support, and barriers will be found to be two unique and distinctive constructs.

Analyses of the variables indicate no evidence of multicollinearity or singularity. Further, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.771) and Bartlett's test of sphericity ($p < .001$) confirm the intercorrelation and factorability of the data. Two factors were extracted. Given the sample size greater than 300, eigenvalues greater than 1, and both factors

having high factor loadings, the factors are interpretable (Fields, 2005; Stevens, 1996; Tabachnick & Fidell, 2001).

Factor one consisted of attitudes toward seeking mental health services, barriers to mental health treatment, self-stigma, and public stigma, and factor two was composed of the self-efficacy and social support variables (see Table 10). These results do not suggest an underlying construct of internal psychological variables and external/environmental variables.

Table 10

Summary of Principle Components Analysis after Varimax Rotation

	Component	
	1	2
Eigenvalues	2.872	1.164
% of Variance	40.92%	26.35%
Attitudes Total	-.838*	.236
Barriers Total	.780*	-.208
Self-Stigma Total	.624*	.060
Self-Efficacy Total	-.006	.900*
Public Stigma Total	.817*	-.210
Social Support Total	-.296	.790*

A Varimax (orthogonal) rotation was selected because it is considered a good general approach in an exploratory analysis (Fields, 2005) and when the nature of the relationship between the variables is not clear. An alternative procedure is an oblique rotation in which one expects correlation between the factors. The current exploratory factor analysis also employed

an oblique rotation using the direct oblimin method to allow for correlations among factors which may be expected given the constructs being examined. The oblique solution yielded the same two-factor solution as in the orthogonal rotation (see Table 11).

Table 11

Summary of Principle Components Analysis after Oblique Rotation

	Component	
	1	2
Eigenvalues	2.65	1.77
% of Variance	47.87%	19.39%
Attitudes Total	-.834*	.113
Barriers Total	.777*	-.093
Self-Stigma Total	.650*	.157
Self-Efficacy Total	.105	.922*
Public Stigma Total	.815*	-.090
Social Support Total	-.207	.765*

Therefore, even when allowing for correlations between the variables, the underlying constructs were not realized.

Descriptive Statistics

Barriers Checklist. Percentages were obtained to determine endorsement of various barriers to seeking help for a mental health problem. The barrier, "My mental health problem would go on my record," was endorsed by 46.2% of the sample, the highest of all the barriers on the checklist. The second most frequently cited barrier was, "I would be seen as weak," with

39.4% of the sample indicating this as an impediment to mental health care. "There would be difficulty getting time off work for treatment" was the next barrier cited at 37.5%. Table 12 summarizes the percentages obtained for all barriers.

Table 12

Barriers Checklist Table

Perceived Barriers	N (325)	%
My mental health problem would go on my record	150	46.2
I would be seen as weak	128	39.4
There would be difficulty getting time off work for treatment	122	37.5
It is difficult to schedule an appointment	110	33.8
Mental health care cost too much money	104	32
My unit leadership might treat me differently	101	31.1
Members of my unit might have less confidence in me	100	30.8
It would harm my career	94	28.9
I don't trust mental health professionals	77	23.7
It would be too embarrassing	72	22.2
My leaders would blame me for the problem	36	11.1
I don't know where to get help	31	9.5
Mental health care doesn't work	29	8.9
I don't have adequate transportation	17	5.2
I wouldn't be able to return to work	15	4.6

Patterns of Help-Seeking Intentions from Formal/Informal Sources. Percentages were obtained on formal and informal sources of help-seeking for purposes of documenting patterns of health care utilization in this sample. Regarding informal sources, participants indicated they would be most likely to seek help in the next year from their partner/spouse, family, or friends for both a physical (24%) and psychological problem (21.5%). Table 13 shows percentages for help-seeking intentions for an emotional problem, and Table 14 show the percentages for a physical problem.

Table 13

Percentages of Help-Seeking Intentions from Multiple Sources for an Emotional Problem

Help Source	Extremely Unlikely	Very Unlikely	Unlikely	Not Sure	Likely	Very Likely	Extremely Likely
Partner, Spouse, Family, Friends	16.0	10.2	10.8	12.0	21.5	12.0	17.5
Clergy/Priest, Minister, Rabbi	52.9	7.7	11.4	13.2	9.2	2.5	3.1
Internet or Self-help Book	46.2	8.0	9.5	12.9	13.8	6.2	3.4
VA Physician, PCP, GP	28.0	8.3	12.9	14.8	16.3	8.9	10.8
VA Mental Health Prof.	31.4	6.2	11.4	13.5	18.2	8.0	11.4
Private Physician, PCP, GP	46.5	8.3	10.5	17.5	11.7	2.5	3.1
Private Mental Health Prof.	48.9	7.7	12.6	15.1	10.2	2.5	3.1
I would not seek help from anyone	26.5	15.1	13.5	20.9	7.7	5.2	11.1

Note: N = 325; PCP = Primary Care Physician, GP = General Practitioner

Regarding formal sources, participants indicated they would be most likely to seek help for a physical problem from a VA physician (27.1%); however, most responded "extremely unlikely" to seeking help from any formal source for a psychological or physical problem in the next year. Of participants who did indicate some likelihood of seeking help for a psychological problem in the next year, 18.2% endorsed likelihood from a VA mental health professional, 16.3% from a VA physician, 11.7% from a private physician, and 10.2% from a private mental health professional.

Table 14

Percentages of Help-Seeking Intentions from Multiple Sources for a Physical Problem

Help Source	Extremely Unlikely	Very Unlikely	Unlikely	Not Sure	Likely	Very Likely	Extremely Likely
Partner, Spouse, Family, Friends	16.0	8.3	8.6	15.1	24.0	10.2	17.8
Clergy/Priest, Minister, Rabbi	61.5	8.0	11.4	12.9	2.5	1.8	1.8
Internet or Self-help Book	41.2	4.6	7.4	15.1	19.4	6.8	5.5
VA Physician, PCP, GP	17.5	4.0	6.8	13.8	27.1	13.8	16.9
VA Mental Health Prof.	33.2	5.8	9.5	15.4	17.8	7.7	10.5
Private Physician, PCP, GP	32.0	5.2	6.8	19.4	22.2	7.7	6.8
Private Mental Health Prof.	52.9	7.4	10.8	15.4	8.9	3.1	1.5
I would not seek help from anyone	26.8	15.4	14.8	19.7	9.2	7.1	7.1

Note: N = 325; PCP = Primary Care Physician, GP = General Practitioner

Patterns of Past Help-Seeking from Formal/Informal Sources. Percentages obtained from the actual help-seeking questionnaire were computed on formal and informal sources of

help-seeking for purposes of documenting patterns of health care utilization in this sample. Results indicated the majority of the sample did not seek help for a psychological problem in the last year from formal sources (see Table 15). For a psychological problem, 45.5% of responders indicated they sought help in the past year from a VA physician, 42.5% from a VA mental health professional, 23.1% from a private physician, and 22.8% from a private mental health professional. When combining the helpful and most helpful categories of the formal sources, VA physicians were found to be the most helpful (20.9%), followed by VA mental health professionals (19.7%), private mental health professionals (12.3%), and finally private physicians (11.7%). Veterans did seek help for a psychological problem from family or friends (64.3%) and many found those sources helpful or very helpful (36.6%).

Table 15

Actual Help-Seeking Percentages from Multiple Sources for a Psychological Problem

Help Source	Yes (%)	No (%)	Very Unhelpful	Unhelpful	Neutral	Helpful	Very Helpful
Partner, Spouse, Family, Friends	64.3	35.7	6.2	5.5	16.0	27.1	9.5
Clergy/Priest, Minister, Rabbi	23.1	76.9	1.8	2.5	7.7	6.8	4.3
Internet or Self-help Book	31.1	68.9	2.5	1.8	12.0	13.2	1.5
VA Physician, PCP, GP	45.5	54.5	5.5	5.2	13.8	12.3	8.6
VA Mental Health Prof.	42.5	57.5	7.1	5.2	10.5	12.0	7.7
Private Physician, PCP, GP	23.1	76.9	1.8	0.9	8.6	9.2	2.5
Private Mental Health Prof.	22.8	77.2	3.7	2.2	4.6	8.3	4.0

Note: N = 325; PCP = Primary Care Physician, GP = General Practitioner

More veterans utilized VA physicians (75.4%) versus private physicians (46.5%) for physical problems. Percentages are summarized in Table 16. According to those who sought help for a physical problem, VA physicians were found to be helpful or very helpful (44.6%) versus private physicians (31.1%). Regarding informal sources, most veterans sought help from family and/or friends for a physical problem (60.6%) and many indicated these sources were helpful or very helpful (36.7%).

Table 16

Actual Help-Seeking Percentages from Multiple Sources for a Physical Problem

Help Source	Yes (%)	No (%)	Very Unhelpful	Unhelpful	Neutral	Helpful	Very Helpful
Partner, Spouse, Family, Friends	60.6	39.4	3.7	5.5	14.8	26.2	10.5
Clergy/Priest, Minister, Rabbi	9.5	90.5	0.9	1.2	4.6	1.2	1.5
Internet or Self-help Book	33.5	66.5	2.8	1.5	13.8	13.8	1.5
VA Physician, PCP, GP	75.4	24.6	9.5	7.7	13.5	29.8	14.8
VA Mental Health Prof.	41.5	58.5	7.7	3.7	10.5	13.5	6.2
Private Physician, PCP, GP	46.5	53.5	3.4	1.8	10.2	23.4	7.7
Private Mental Health Prof.	9.2	90.8	1.2	0.3	4.3	2.8	0.6

Note: N = 325; PCP = Primary Care Physician, GP = General Practitioner

Additional Multiple Linear Regression Analyses for Psychological Problems

An additional analysis was conducted that examined all demographic variables and the eight independent predictors on total help-seeking intentions for a *psychological* problem. Results indicated a significant model fit with $F(21,316) = 5.02$, $p < .001$. In total, 21 independent

variables accounted for 25.8% of variance in predicting help-seeking intentions for a psychological problem. Regression coefficients for this analysis are provided in Table 17. Positive attitudes towards psychotherapy, public stigma, social support, the presence of mental health problems, and total time in theatre were found to be significant coefficients within the model.

Table 17

Demographic and Independent Variables for Help-Seeking Intentions from All Sources for a Psychological Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	4.3 (4.4)		0.99	0.3	-4.3 – 12.9
Total Time in Theatre	-1.4 (0.5)	-0.1	-2.7	0.01**	-2.4 – -0.4
Attitudes Total	0.19 (.03)	0.5	6.7	0.0**	0.13 – 0.24
Mental Component Summary	-0.1 (0.03)	-0.3	-4.1	0.0**	-0.2 - -0.1
Public Stigma Total	0.2 (0.2)	0.1	1.3	0.2	-0.1 – 0.5
Social Support Total	0.1 (0.05)	0.1	1.8	0.07	-0.01 – 0.17

Note. * = significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.258$, $R^2_{adj} = 0.207$.

An analysis was conducted that examined the eight independent variables on formal help-seeking intentions for a *psychological* problem. Results of the regression indicated a significant model fit with $F(8, 316) = 13.32$, $p < .01$. In total, the eight independent variables accounted for 25.2% of variance in predicting help-seeking intentions for a psychological problem. Regression coefficients for this analysis are provided in Table 18. Positive attitudes towards psychotherapy,

higher levels of self-stigma, and the presence of mental health problems were found to be significant coefficients within the model.

Table 18

Regression Coefficients for Help-Seeking Intentions from Formal Sources for a Psychological Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	4.3 (4.4)		0.99	0.3	-4.3 – 12.9
Attitudes Total	0.19 (.03)	0.5	6.7	0.0**	0.13 – 0.24
Barriers Total	0.02 (0.2)	0.01	0.2	0.9	-0.3 – 0.3
Self-Stigma Total	0.2 (0.1)	0.1	2.0	0.04*	0.01 – 0.4
Physical Component Summary	-0.05 (0.04)	-0.08	-1.4	0.16	-0.1- 0.02
Mental Component Summary	-0.1 (0.03)	-0.3	-4.1	0.0**	-0.2 - -0.1
Self-Efficacy Total	-0.1 (0.1)	-0.1	-1.9	0.1	-0.3 – 0.01
Public Stigma Total	0.2 (0.2)	0.1	1.3	0.2	-0.1 – 0.5
Social Support Total	0.1 (0.05)	0.1	1.8	0.07	-0.01 – 0.17

Note. * = significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.252$, $R^2_{adj} = 0.233$.

An analysis was conducted that examined the eight independent variables on informal help-seeking intentions for a *psychological* problem. Results of the regression indicated a significant model fit with $F(8, 316) = 5.11$, $p < .01$. In total, the eight independent variables accounted for 11.4% of variance in predicting help-seeking intentions for a psychological problem. Regression coefficients for this analysis are provided in Table 19. Positive attitudes towards psychotherapy and higher levels of social support were found to be significant coefficients within the model.

Table 19

Regression Coefficients for Help-Seeking Intentions from Informal Sources for a Psychological Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	3.1 (3.1)		0.99	0.32	-3.0 – 9.1
Attitudes Total	0.07 (0.02)	0.3	3.5	0.001**	0.03 – 0.1
Barriers Total	-0.1 (0.1)	-0.1	-0.9	0.4	-0.3 – 0.1
Self-Stigma Total	-0.003 (0.1)	-0.002	-0.04	0.97	-0.15 – 0.14
Physical Component Summary	0.02 (0.03)	0.04	0.7	0.52	-0.04 – 0.07
Mental Component Summary	-0.04 (0.02)	-0.13	-1.6	0.11	-0.1 – 0.01
Self-Efficacy Total	-0.003 (0.05)	-0.005	-0.06	0.95	-0.1 – 0.1
Public Stigma Total	0.2 (0.1)	0.15	1.9	0.06	-0.008 – 0.4
Social Support Total	0.09 (0.03)	0.2	2.9	0.004**	0.03 – 0.16

Note. * = significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.114$, $R^2_{adj} = 0.092$.

An analysis was conducted that examined the eight independent variables on help-seeking intentions for a *psychological* problem from the VA. Results of the regression indicated a significant model fit with $F(8, 316) = 17.48$, $p < .01$. VA sources include any VA professional such as a primary care physician, psychiatrist, psychologist, or social worker. In total, the eight independent variables accounted for 30.7% of variance in predicting help-seeking intentions for a psychological problem. Regression coefficients for this analysis are provided in Table 20. Positive attitudes towards psychotherapy, higher levels of self-stigma, and higher physical and mental health problems were found to be significant coefficients within the model.

Table 20

Regression Coefficients for Help-Seeking Intentions from VA Sources for a Psychological Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	4.3 (2.8)		1.6	0.12	-1.1 – 9.7
Attitudes Total	0.12 (.02)	0.5	6.8	0.0**	0.1 – 0.2
Barriers Total	-0.02 (0.1)	-0.01	-0.2	0.9	-0.2 – 0.2
Self-Stigma Total	0.1 (0.1)	0.1	2.0	0.045*	0.003 – 0.3
Physical Component Summary	-0.05 (0.02)	-0.1	-2.0	0.045*	-0.1 – -0.001
Mental Component Summary	-0.1 (0.02)	-0.4	-5.7	0.0**	-0.2 – -0.08
Self-Efficacy Total	-0.1 (0.05)	-0.1	-1.8	0.07	-0.2 – 0.1
Public Stigma Total	0.1 (0.1)	0.1	1.1	0.3	-0.1 – 0.8
Social Support Total	0.05 (0.03)	0.1	1.8	0.07	-0.005 – 0.3

Note. * = significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.307$, $R^2_{adj} = 0.289$.

Additional Multiple Linear Regression Analyses for Physical Problems

An analysis was conducted that examined the eight independent variables on formal help-seeking intentions for a *physical* problem. Results of the regression indicated a significant model fit with $F(8, 316) = 9.32$, $p < .01$. In total, the eight independent variables accounted for 19.1% of variance in predicting help-seeking intentions for a physical problem. Regression coefficients for this analysis are provided in Table 21. Positive attitudes towards psychotherapy, higher levels of public stigma, and the presence of mental and physical health problems were found to be significant coefficients within the model.

Table 21

Regression Coefficients for Help-Seeking Intentions from Formal Sources for a Physical Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	8.8 (4.0)		2.2	0.03	0.8 – 16.8
Attitudes Total	0.15 (0.03)	0.4	5.7	0.00**	0.1 – 0.2
Barriers Total	-0.09 (0.1)	-0.04	-0.6	0.5	-0.35 – 0.18
Self-Stigma Total	0.2 (0.1)	0.1	1.6	0.1	-0.04 – 0.3
Physical Component Summary	-0.1 (0.04)	-0.2	-3.4	0.001**	-0.2 – -0.05
Mental Component Summary	-0.08 (0.03)	-0.3	-2.7	0.007**	-0.1 – -0.02
Self-Efficacy Total	-0.05 (0.06)	-0.06	-0.8	0.4	-0.2 – 0.08
Public Stigma Total	0.3 (0.1)	0.2	2.1	0.03*	0.02 – 0.57
Social Support Total	0.05 (0.04)	0.08	1.3	0.18	-0.03 – 0.14

Note. * = significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.191$, $R^2_{adj} = 0.170$.

An analysis was conducted that examined the eight independent variables on informal help-seeking intentions for a *physical* problem. Results of the regression indicated a significant model fit with $F(8, 316) = 3.77$, $p < .01$. In total, the eight independent variables accounted for 8.7% of variance in predicting help-seeking intentions for a physical problem. Regression coefficients for this analysis are provided in Table 22. Positive attitudes towards psychotherapy, higher levels of social support, and the presence of public stigma were found to be significant coefficients within the model.

Table 22

Regression Coefficients for Help-Seeking Intentions from Informal Sources for a Physical Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	6.0 (3.0)		2.0	0.05	0.06 – 11.9
Attitudes Total	0.05 (0.02)	0.2	2.4	0.02*	0.01 – 0.09
Barriers Total	-0.02 (0.1)	-0.01	-0.2	0.9	-0.2 – 0.2
Self-Stigma Total	-0.06 (0.07)	-0.05	-0.8	0.4	-0.2 – 0.1
Physical Component Summary	-0.02 (0.03)	-0.05	-0.8	0.4	-0.07 – 0.03
Mental Component Summary	-0.003 (0.02)	-0.01	-0.2	0.9	-0.05 – 0.04
Self-Efficacy Total	-0.006 (0.05)	-0.009	-0.1	0.9	-0.1 – 0.1
Public Stigma Total	0.2 (0.1)	0.15	1.9	0.05*	-0.003 – 0.4
Social Support Total	0.1 (0.03)	0.2	3.1	0.002**	0.04 – 0.16

Note. * = significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.087$, $R^2_{adj} = 0.064$.

An analysis was conducted that examined the eight independent variables on formal help-seeking intentions for a *physical* problem from the VA. Results of the regression indicated a significant model fit with $F(8, 316) = 12.8$, $p < .01$. In total, the eight independent variables accounted for 24.5% of variance in predicting help-seeking intentions for a physical problem. Regression coefficients for this analysis are provided in Table 23. Positive attitudes towards psychotherapy and higher physical and mental health problems were found to be significant coefficients within the model.

Table 23

Regression Coefficients for Help-Seeking Intentions from VA Sources for a Physical Problem (N = 325)

	B (*SE*)	β	*t*	*Sig.*	*95% Confidence Interval*
Constant	6.6 (2.6)		2.5	0.01*	1.4 – 11.7
Attitudes Total	0.1 (.02)	0.5	6.0	0.00**	0.07 – 0.13
Barriers Total	-0.1 (0.1)	-0.07	-1.1	0.3	-0.3 – 0.07
Self-Stigma Total	0.1 (0.06)	0.1	1.5	0.13	-0.03 – 0.2
Physical Component Summary	-0.08 (0.02)	-0.2	-3.5	0.00**	-0.13 – -0.04
Mental Component Summary	-0.08 (0.02)	-0.3	-4.1	0.00**	-0.11 – -0.04
Self-Efficacy Total	-0.04 (0.04)	-0.06	-0.8	0.4	-0.1 – 0.04
Public Stigma Total	0.2 (0.1)	0.1	1.9	0.07	-0.01 – 0.3
Social Support Total	0.02 (0.03)	0.04	0.7	0.5	-0.04 – 0.07

Note. * = significant at $p < .05$; ** = significant at $p < .01$.
$R^2 = 0.245$, $R^2_{adj} = 0.226$.

Additional Logistic Regression Analyses for a Psychological Problem

Based on the distribution of this sample as with Hypothesis 2, the database was divided into two groups, those who scored higher on the MCS indicating better mental health status, and those who scored lower. The logistic regression analysis was then run with the remaining seven predictor variables entered simultaneously.

Past Help-seeking from Formal Sources. An analysis was conducted that examined the contribution of the predictors on past help-seeking behavior for a *psychological* problem from formal sources. For those with better mental health status, results indicated the overall model fit

was not strong (-2 log likelihood = 200.02) but was statistically reliable in distinguishing between those who sought past help and those who did not from *formal* sources, $X^2(7) = 50.5$; $p < .01$, Nagelkerke $R^2 = 0.32$. With this model, 61% of the participants were correctly classified as either having sought help or not showing some improvement over the constant only model (54.9%). Regression coefficients are presented in Table 24. Wald statistics indicated that attitudes toward psychotherapy and self-efficacy were the only significant predictors of past help-seeking behavior. However, even though statistically significant, odds ratios of 1.04 (attitudes) and 0.84 (self-efficacy) showed little change based on the likelihood of one unit change in past help-seeking behavior. Self-efficacy yielded the strongest relationship, with results indicating that veterans with lower self-efficacy were 16% less likely to have sought help for a psychological problem from formal sources. Veterans with more positive attitudes toward seeking mental health services were 4% more likely to have sought help for a psychological problem in the past year.

Table 24

Split Groups Regression Coefficients for Predictors of Past Help-Seeking from Formal Sources for a Psychological Problem

	B (SE)	*Wald*	*p*	Odds Ratio	95% Confidence Interval
No Mental Health Problem (n = 182)					
Constant	4.3(2.8)	2.4	0.12	73.3	
Attitudes	0.04(0.02)	4.6	0.03*	1.04	1.0 – 1.01
Self-Efficacy	-0.17(0.04)	15.5	0.00**	0.84	0.8 – 0.9
Yes Mental Health Problem (n = 143)					
Constant	-0.4(2.8)	0.02	0.9	0.7	
Attitudes	0.05(0.02)	6.7	0.01**	1.05	1.0 – 1.1
Self-Efficacy	-0.13(0.04)	10.8	0.00**	0.88	0.82 – 0.9
Public Stigma	0.2(0.09)	4.9	0.03*	1.23	1.02 – 1.5

Note. * = significant at $p < .05$, ** = significant at $p < .01$.

For those with mental health problems, the overall model fit also was not strong (-2 log likelihood = 164.1) but was statistically reliable in distinguishing between those who sought past help and those who did not, $X^2(7) = 32.1$; $p < .01$, Nagelkerke $R^2 = 0.27$. With this model, 69.2% of the participants were correctly classified as either having sought help or not, showing some improvement over the constant only model (55.9%). Regression coefficients are also presented in Table 24. Wald statistics indicated that attitudes toward psychotherapy, self-efficacy, and public stigma were significant predictors of past help-seeking behavior. Again, though statistically significant, odds ratios of 1.05 (attitudes), 0.88 (self-efficacy), and 1.23 (public

stigma) do not predict much change based on the likelihood of one unit change in past help-seeking behavior. Public stigma yielded the strongest relationship, with results indicating that veterans with higher public stigma were 23% more likely to have sought help for a psychological problem from formal sources. Veterans with more positive attitudes toward seeking mental health services were 4% more likely to have sought help for a psychological problem whereas veterans with lower self-efficacy were 12% less likely to have sought help.

Past Help-seeking from Informal Sources. An analysis was conducted that examined the contribution of the predictors on past help-seeking behavior for a *psychological* problem from informal sources. Regression results from *informal* sources indicated for those with better mental health status, the overall model fit was not strong (-2 log likelihood = 196.3) but was statistically reliable in distinguishing between those who sought past help and those who did not, $X^2(7) = 17.7$; $p < .01$, Nagelkerke $R^2 = 0.13$. With this model, 71.4% of the participants were correctly classified, a slight improvement over the constant only model (70.6%). Regression coefficients are presented in Table 25. Wald and beta statistics indicated that higher levels of self-stigma and lower levels of self-efficacy were significant predictors of past help-seeking behavior.

Table 25

Split Groups Regression Coefficients for Predictors of Past Help-Seeking from Informal Sources for a Psychological Problem

	B (SE)	*Wald*	*p*	Odds Ratio	95% Confidence Interval
No Mental Health Problem (n = 182)					
Constant	0.3(2.5)	0.01	0.9	1.4	
Self-Stigma	0.12(0.06)	3.7	0.05*	1.13	0.99 – 1.3
Self-Efficacy	-0.1(0.04)	6.3	0.01**	0.9	0.83 – 0.98
Yes Mental Health Problem (n = 143)					
Constant	-3.7(2.8)	1.7	0.2	0.03	
Attitudes	0.04(0.02)	5.3	0.02*	1.04	1.00 – 1.08
Public Stigma	0.19(0.09)	4.5	0.03*	1.2	1.02 – 1.5

Note. * = significant at $p < .05$, ** = significant at $p < .01$.

For those with mental health problems, the overall model fit also was not strong (-2 log likelihood = 163.3) but was statistically reliable in distinguishing between those who sought past help and those who did not, $X^2(7) = 9.8$; $p < .01$, Nagelkerke $R^2 = 0.095$. With this model, 72.7% of the participants were correctly classified as either having sought help or not showing little improvement over the constant only model (70.6%). Regression coefficients are also presented in Table 25. Wald and beta statistics indicated that positive attitudes toward psychotherapy and higher levels of public stigma were significant predictors of past help-seeking behavior. Odds ratios indicated that veterans with high public stigma were 20% more likely to have sought help for a psychological problem, and veterans with more favorable attitudes were 4% more likely to have sought help for a psychological problem in the past year.

Past Help-seeking from VA Sources. An analysis was conducted that examined the contribution of the predictors on past help-seeking behavior for a *psychological* problem from VA sources. Regression results for those with better mental health status indicated the overall model fit was not strong (-2 log likelihood = 203.7) but was statistically reliable in distinguishing between those who sought past help and those who did not from *VA* sources, $X^2(7) = 48.5$; $p < .01$, Nagelkerke $R^2 = 0.31$. With this model, 69.6% of the participants were correctly classified, a substantive improvement over the constant only model (50.5%). Regression coefficients are presented in Table 26. The Wald and beta statistic indicated that a lower self-efficacy was the only significant predictor of past help-seeking behavior.

Table 26

Split Groups Regression Coefficients for Predictors of Past Help-Seeking from VA Sources for a Psychological Problem

	B (SE)	*Wald*	*p*	Odds Ratio	95% Confidence Interval
No Mental Health Problem (n = 182)					
Constant	4.8(2.7)	3.1	0.08	117.2	
Self-Efficacy	-0.16(0.04)	14.1	0.00**	0.86	0.79 – 0.93
Yes Mental Health Problem (n = 143)					
Constant	0.9(2.8)	0.1	0.7	2.5	
Attitudes	0.04(0.02)	3.9	0.05*	1.04	1.00 – 1.07
Self-Efficacy	-0.17(0.04)	16.9	0.00**	0.85	0.78 – 0.92

Note. * = significant at $p < .05$, ** = significant at $p < .01$.

For those with mental health problems, the overall model fit also was not strong (-2 log likelihood = 160.7) but was statistically reliable in distinguishing between those who sought past

help and those who did not, $X^2(7) = 37.5$; $p < .01$, Nagelkerke $R^2 = 0.307$. With this model, 67.1% of the participants were correctly classified as either having sought help or not showing improvement over the constant only model (51%). Regression coefficients are also presented in Table 26. Wald and beta statistics indicated that positive attitudes toward psychotherapy and lower levels of self-efficacy were significant predictors of past help-seeking behavior. Odds ratios show that veterans with lower self-efficacy were 15% less likely to have sought help from VA sources for a psychological problem, and veterans with more positive attitudes were 4% more likely to have sought help.

Additional Logistic Regression Analyses for a Physical Problem

Based on the distribution of this sample as with Hypothesis 4, the database was divided into two groups, those who scored higher on the PCS, indicating better physical health, and those who scored lower. The logistic regression analysis was then run with the remaining seven predictor variables entered simultaneously.

Past Help-seeking from Formal Sources. An analysis was conducted that examined the contribution of the predictors on past help-seeking behavior for a *physical* problem from formal sources. Due to an insufficient number of cases for those with physical health problems, only results for those with better physical health status were able to be analyzed. For those with better physical health status, results indicated the overall model was not significant (-2 log likelihood = 274.5) and not statistically reliable in distinguishing between those who sought past help and those who did not from *formal* sources, $X^2(7) = 12.7$; $p = 0.08$, Nagelkerke $R^2 = 0.071$.

Past Help-seeking for Informal Sources. An analysis was conducted that examined the contribution of the predictors on past help-seeking behavior for a *physical* problem from informal sources. Regression results from *informal* sources for those with better physical health

status, the overall model fit was not strong (-2 log likelihood = 331.83) and not statistically significant in distinguishing between those who sought past help and those who did not, $X^2(7) = 12.2$; $p = .09$, Nagelkerke $R^2 = 0.062$. With this model, 66.5% of the participants were correctly classified, a small improvement over the constant only model (63.9%).

For those with physical health problems, the overall model fit was adequate (-2 log likelihood = 32.2) but not statistically significant with $X^2(7) = 7.2$; $p = .4$, Nagelkerke $R^2 = 0.233$. With this model, 88.7% of the participants were correctly classified as either having sought help or not, which demonstrated worse predictive value than the constant only model (90.3%).

Past Help-seeking from VA Sources. An analysis was conducted that examined the contribution of the predictors on past help-seeking behavior for a *physical* problem from VA sources. Due to an insufficient number of cases for those with lower scores on the PCS, indicating physical health problems, only results for those with higher scores on the PCS were able to be analyzed. For those with better physical health status (n = 263), results indicated the overall model fit was not strong (-2 log likelihood = 297.7) and not statistically reliable in distinguishing between those who sought past help and those who did not from VA sources, $X^2(7) = 48.5$; $p = .07$, Nagelkerke $R^2 = 0.069$. With this model, 73.4% of the participants were correctly classified, showing little improvement over the constant only model (72.2%).

Group Differences

Based on the results from the regression analyses, a repeated measures ANOVA was conducted on the data for purposes of examining group differences between the variables found to be predictive coefficients within the linear and logistic regression models of help-seeking: attitudes towards seeking psychotherapy, social support, public stigma, self-stigma, and self-efficacy. These variables were examined based on the veteran's total time in theatre, the one

demographic variable found to be predictive in the previous analyses. Results indicated no significant group differences based on the veteran's total time in theatre, $F(2.6,847.6) = 1.3$, $p > .05$, $\eta^2 = 0.004$. There was a significant between subjects effect of attitudes toward seeking psychotherapy on total time in theater, $F(4,320) = 2.65$, $p < .05$. A significant nonlinear trend was found, with less favorable attitudes towards seeking psychotherapy occurring in those veterans who spent 1-1½ years in OEF/OIF (see Figure 8).

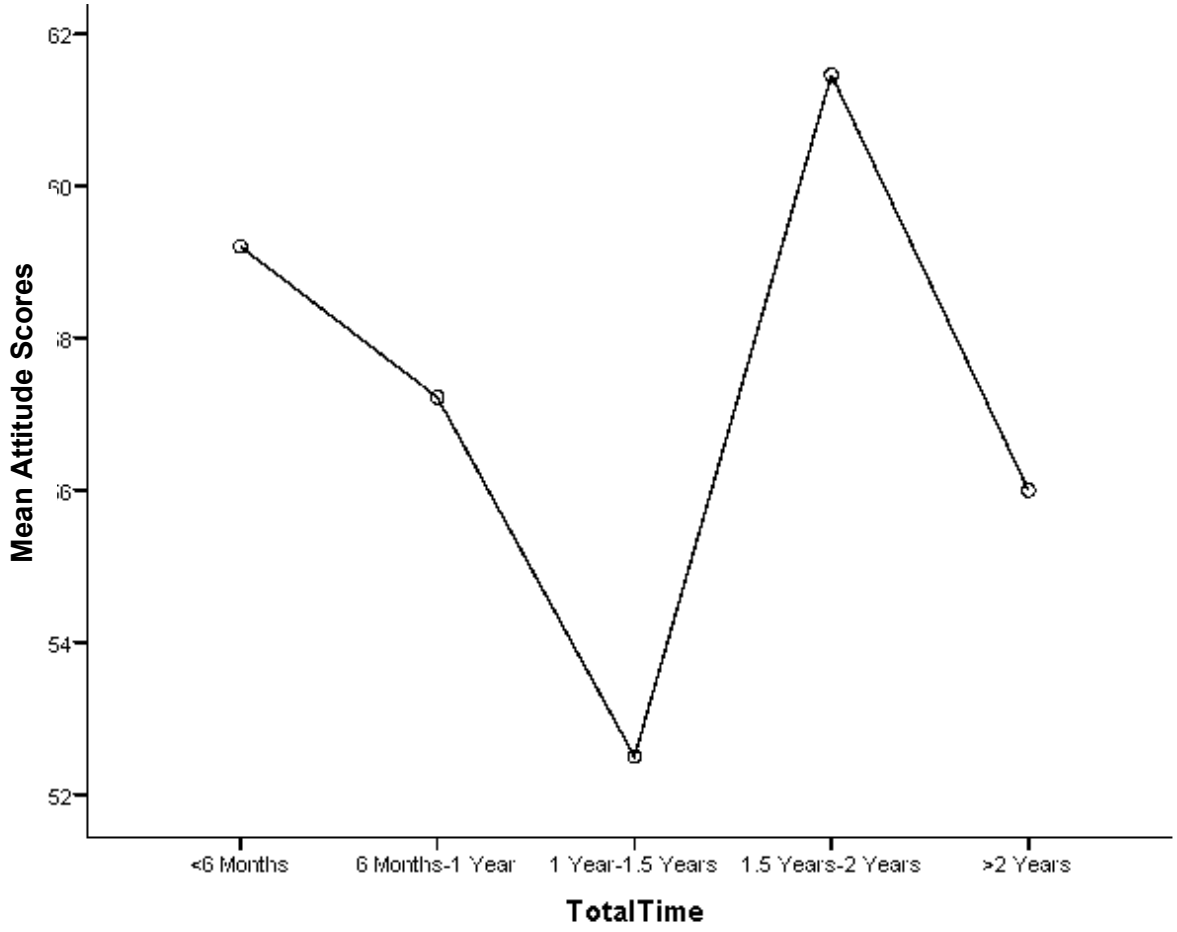

Figure 8. Mean Attitude Scores versus Total Time in Theatre

Discussion

The primary purpose of this study was to survey returning OEF/OIF veterans and determine which variables best predict help-seeking intentions and past help-seeking behavior for a psychological or physical problem. Many returning veterans are reporting mental health issues but not seeking care to address these difficulties. A better understanding of the help-seeking process might aid providers and administrators in outreach and provision of services for those who need them. An additional goal of the study was to examine health care utilization patterns for trends in formal versus informal and private versus VA providers of care. A final goal of the study was to examine the predictor variables within a new model of help-seeking. Results of the study are discussed in the following section as well as limitations and directions for future research.

Hypothesis 1. Results indicated a significant model fit with attitudes towards psychotherapy, social support, and current mental health status as significant coefficients within the model. In total, the eight independent variables accounted for 21.4% of variance in predicting help-seeking intentions for a psychological problem. However, it had been hypothesized that lower levels of social support would predict intentions to seek help for a psychological problem, but results indicated otherwise, with higher levels of social support predicting the intention to seek help. Higher levels of social support, although not as hypothesized, are consistent with correlation and frequency analyses in this study as being related to help-seeking intentions for a psychological problem.

Although more studies were found in the literature that indicated an inverse relationship between social support and help-seeking intentions (Cepeda-Benito & Short, 1998; Cramer, 1999; Keane, Scott, Chavoya, Lamparski, & Fairbank, 1985; King, King, Fairbank, Keane, &

Adams, 1998; Ozer, Best, Lipsey, & Weiss, 2003; Sherbourne, 1988), one study by Carpentier and White (2002) found higher levels of social support to be predictive of help-seeking for those with serious mental illness. The authors posit the importance of a cohesive social network in an individual's mental health decision-making and maintenance of services.

The presence of mental health problems and positive attitudes toward psychotherapy had been hypothesized as predicting help-seeking intentions for a psychological problem, and results support the hypothesis. Of the three coefficients, attitudes towards seeking psychotherapy was found to be the strongest coefficient within the model with a beta weight of 0.3.

For the 215 participants who reported seeking help in the past for a psychological problem, the helpfulness of this experience was surveyed and was found to be a significant predictor. The addition of this variable into the model increased the amount of variance accounting for help-seeking intentions to 25.5%, an increase of 4.1%. Given this small to medium effect, this variable should be considered for future help-seeking studies. Also interesting in this analysis was that 66% of the sample, a high percentage, endorsed seeking help in the past for a psychological problem.

Another interesting finding is that the three significant coefficients fall into each of the three categories of the present study's theorized model of help-seeking: attitudes within the internal psychological category, social support in the external/environmental category, and mental health status in the illness/needs category supporting the underlying constructs of the theorized model. The remaining variables self-stigma, public stigma, self-efficacy, barriers, and physical health status contributed to the overall model fit; however, their individual contributions were not statistically significant as hypothesized. Examination of the 95% confidence intervals for these model parameters shows intervals that cross zero, weakening the overall model's predictive

value, increasing the likelihood that in some samples the parameter has a negative relationship to the outcome but in others a positive relationship (Fields, 2005). This may explain the direction of the variable public stigma within the model was not as expected, with higher levels of public stigma being associated with the intention to seek help.

One surprising result is that neither public nor self-stigma were significant predictors within the model. This seems contrary to past research in veteran studies (Britt, 2000; Hoge, 2004; Iverson, 2005) as well as findings in the current study where 39.4% of veterans endorsed, "I would be seen as weak" as a barrier to seeking help.

Hypothesis 2. Results from the first logistic regression analysis indicated that attitudes toward seeking psychotherapy, mental health status, and physical health status were the only significant predictors of past help-seeking behavior; the remaining regression coefficients did not approach significance as hypothesized. However, even though statistically significant, the odds ratios showed little change based on the likelihood of one unit change in past help-seeking behavior. Based on the weak predictive value of the model, further exploratory analyses were conducted. The sample was split into two groups, higher and lower mental health status, with the hope of separating out some responders who might have had other motivators for having sought help, such as seeking or maintaining service connection. The logistic regression analyses were run again with the remaining seven predictors entered simultaneously as before.

Results for the split group analyses did not yield a much stronger model, although theoretically more sound. For those with a higher self-reported mental health status, lower self-efficacy was the only significant coefficient within the model; therefore the illness and external psychological categories are not represented in the new help-seeking model. For those reporting mental health symptoms, positive attitudes towards seeking psychotherapy and higher levels of

public stigma were significant coefficients within the model, and all categories are represented in the new model of help-seeking. Although the overall model was weak, results indicated the odds of past help-seeking behavior for a psychological problem were significantly higher for individuals with lower mental health status, high public stigma, and more favorable attitudes towards seeking mental health services.

Interestingly, results from the logistic analyses highlight a limitation of the current study; namely that responders were asked about their physical and mental health status over the past four weeks, yet were asked about their help-seeking patterns over the past year. Individuals in the group with higher mental health status may have had symptoms at the time they sought help and now are reaping the benefits of their treatment; however, assessment of their mental health status prior to seeking help was not obtained and presents a limitation for the current analysis. In addition, interpretations regarding the relationship between the other independent variables and past help-seeking should be made with caution. Assessment of their self-efficacy and public stigma at the time of the survey may be different than when help was sought in the past.

Hypothesis 3. Results indicated a significant model fit with attitudes towards psychotherapy, social support, public stigma, and current physical health status as significant coefficients within the model. Although the endorsement of physical problems was as expected within the model, positive attitudes towards psychotherapy, higher levels of social support, and those who endorsed greater public stigma were not as hypothesized. Endorsement of psychological problems was also hypothesized to be predictive of help-seeking intentions for physical problems; however, results did not provide support for the hypothesis.

The presence of physical health problems as predicting help-seeking intentions for a physical problem was supported. However, of the four coefficients, attitudes towards seeking

psychotherapy was found to be the strongest coefficient within the model with a beta weight of 0.39. Correlational analyses were consistent with this result, with the attitudes coefficient yielding the strongest association with the dependent variable of help-seeking intentions for a physical problem.

Although not hypothesized, the four variables that contributed significantly to the model fall into each of the categories of the present study's theorized model of help-seeking: attitudes within the internal psychological category, social support and public stigma in the external/environmental category, and physical health status in the illness/needs category supporting the underlying constructs of the theorized model. This suggests there may be more involved in the decision to seek help for a physical problem than originally thought. In addition, the fact that attitudes toward seeking psychotherapy resulted in a stronger Beta weight than physical health status is an interesting finding. The presence of having a physical problem seems intuitive; however, what might be the connection between someone's attitudes towards seeking mental health services and seeking help for a physical problem? One possible explanation may be that the three subscales of the IASMHS are measuring constructs that cross over to physical health issues. When a regression analysis was run with the three attitudes subscales as independent predictors, help-seeking propensity was found to be significant within the attitudes subscale, a subscale that reflects an individual's willingness and ability to seek professional psychological help. Items in the subscale include, "*I would have a very good idea of what to do and who to talk to if I decided to seek professional for psychological problems*" and "*If I believed I were having a mental breakdown, my first inclination would be to get professional attention*." One might posit that if an individual would be this proactive regarding a psychological issue,

he/she would be proactive for a physical problem as well, and may in part explain the strength of this relationship.

Hypothesis 4. Results from the first logistic regression analysis indicated that attitudes toward seeking mental health services and physical health status were significant predictors of past help-seeking behavior and not psychological and physical health status as hypothesized.

However, even though statistically significant, the odds ratios showed little change based on the likelihood of one unit change in past help-seeking behavior, and the model showed no improvement over the constant only model in classifying those who sought help versus those who did not. Based on the weak predictive value of the model, further exploratory analyses were conducted. The sample was split into two groups as with Hypothesis 2, those who with higher physical health problems and those with lower, with the hope of separating out some responders who might have had other motivators for having sought help, such as seeking or maintaining service connection. The logistic regression analyses were run again with the remaining seven predictors entered simultaneously as before; however, due to an insufficient number of cases for those with physical health problems, the logistic regression was only run on those who did not report physical problems. Results from this analysis yielded a non-significant model. The results of this analysis highlight another limitation of this study regarding base rates of the sample, namely an inadequate number of veterans and service members endorsing physical health problems.

Hypothesis 5. Results from the principal components analysis with varimax rotation yielded two interpretable factors. The first factor loaded with four of the independent variables, attitudes toward seeking mental health services, barriers to mental health treatment, self-stigma, and public stigma, and the second factor consisted of the remaining two variables, self-efficacy

and social support. Factor loadings were the same after an oblique rotation analysis was conducted as well, accounting for correlations among the variables. The results do not support the hypothesized constructs of attitudes, self-efficacy, and self-stigma as an underlying construct of internal psychological variables and barriers, public stigma, and social support as an underlying construct of external/environmental variables. One possible explanation may be that the measures utilized in the current study do not accurately reflect the theorized constructs. Results of the analyses did produce two factors with eigenvalues greater than one. Specifically, factors related to efficacy (ability to either cope with problems or elicit help from others) and stigma (internal, social, and occupational) emerged.

Additional Linear Regression Analyses. Results from the linear regression analyses for formal, informal, and VA sources of help-seeking for a psychological problem indicated a significant model fit for all models. Consistent among these models and with hypothesis 1, attitudes toward seeking psychotherapy stands out as the strongest coefficient in the model. For formal and VA sources, endorsement of mental health problems and higher levels of self-stigma were significant predictors within the model. The presence of physical health problems was a significant predictor in the model for help-seeking from VA sources, which is not surprising for this population. In a study by Kaczis et al. (1998), veterans reported poorer health status across all of the scales of the SF-36 as compared with non-VA populations.

The fact that higher levels of self-stigma were found to be predictive of help-seeking was noteworthy, the hypothesis being that stigma would act as a barrier to seeking help for a psychological problem. In examining the regression models, self-stigma produced the weakest Beta weight in both help-seeking from formal sources and help-seeking from the VA. Also predictive in both the linear and logistic regression models were mental health status and

attitudes towards seeking psychotherapy. Perhaps the salience of one's current symptoms together with the belief that one can be helped by a professional factor more heavily into the decision to seek help than one's view of self as inferior or inadequate for seeking help. It would be interesting in future studies to examine the relative importance of each of these variables in one's decision to seek help.

When examining the coefficients within the framework of the studies' theoretical model of help-seeking, the internal and illness categories are represented for help-seeking intentions from formal and VA sources but the external/environment category is not. When examining informal sources of help-seeking and the theorized model, the internal and external/environmental categories are represented with significant coefficients in attitudes and social support, but the illness category is not. Therefore, results from the additional linear regression analyses for a psychological problem only provide partial support for the theorized model of help-seeking.

Regarding help-seeking intentions for a physical problem from formal, informal, and VA sources, results of the regression analyses indicated a significant model fit for all models. Consistent among these models and Hypothesis 3, attitudes toward seeking psychotherapy stands out as one of the strongest coefficients in the models. The social support variable has a slightly stronger Beta coefficient (0.22) versus attitudes (0.199) in the informal help-seeking model. For formal and informal sources, higher levels of public stigma was a significant predictor within the model. This result is one not hypothesized and unexpected based on the literature. For formal sources, the presence of mental health problems was also a significant predictor of help-seeking for a physical problem.

One possible explanation may be that veterans experiencing mental health problems are more likely to seek help for their physical problem due to public stigma. This is consistent with

a study by Solomon (1993) in which Israeli veterans were more likely to seek help from a primary care physician for their psychological problem. In the current study, most veterans indicated they would be unlikely to seek help in the next year for a psychological problem. Of those who did endorse some likelihood, 18.2% indicated they would seek help from a VA mental health professional, and 16.3% indicated they would seek help from a VA physician. This finding provides some support that primary care providers serve as gatekeepers to some veterans for mental health services.

Additional Logistic Regression Analyses. Results from the logistic regression analyses for formal, informal, and VA sources of past help-seeking for a psychological problem indicated a significant albeit weak model fit for all models. The rationale for the split group analyses and limitations regarding the logistical analyses has already been discussed. Despite these limitations, there are some noteworthy findings in the current analysis. For those endorsing mental health problems, attitudes towards seeking psychotherapy continues to be a consistent coefficient in formal, informal, and VA sources of past help-seeking. In addition, for formal and VA sources, lower self-efficacy was a significant predictor within the model and is consistent with prior veteran studies indicating an inverse relationship between self-efficacy and help-seeking for a psychological problem (Iverson, 2005; Solomon, 1989). Finally, the predictors in the models for both informal and formal help-seeking are represented in all three constructs of the new model of help-seeking, providing some support for this theorized model.

For those participants not currently endorsing a mental health problem, lower self-efficacy was also a strong coefficient in formal, informal, and VA models, the only significant coefficient in the VA model. Again, similar to Hypothesis 2, limitations of the study methods make interpretation of this result difficult.

Additional Data Analyses. One interesting finding from the examination of group differences was the nonlinear relationship between veterans' attitudes towards seeking psychotherapy and their total time spent in theatre. For those who spent 1-1½ years in theatre, results indicated less favorable attitudes towards seeking psychotherapy than other cohorts; however, the reason for this is not clear. One might have expected a negative trend over time in veterans' attitudes given increased exposure to combat. On the other hand, more time in theatre might mean more access to mental and physical health resources in the field and more social support, and one might have hypothesized a positive trend on attitudes. The majority of the current sample had served in the Army; therefore branch of service might have had an influence on this trend. Future research in this area may give a clearer indication of the relationship between these variables.

The addition of the item "My mental health problem would go on my record" to the original barriers checklist (Hoge et al., 2004) was noteworthy. Veterans (46.2%) identified this item as being a biggest barrier to seeking help for a psychological problem. The second most cited barrier to seeking help was "I would be seen as weak" with "There would be difficulty getting time off work for treatment" as the third most cited barrier. In Hoge et al. (2004), the top three barriers cited were: "I would be seen as weak," "my unit leadership might treat me differently," and "members of my unit might have less confidence in me." Barriers two and three in the Hoge study represent barriers five and six in the current study. The small differences in rank order of barriers may be due to differences in sample population. In the Hoge study, participants were surveyed either prior to their deployment to Iraq or 3-4 months after their return from OEF/OIF. In the current study, 75.7% of participants indicated that it had been two years or more since their return from OEF/OIF, likely changing the relative importance of

various barriers to health care. The barrier "I would be seen as weak" as being endorsed as a top barrier in both studies is an important finding and consistent with the veteran literature that stigma over having a mental health problem exists (Britt, 2000; Greene-Shortridge, Britt, & Castro, 2007; Hoge et al, 2004; Iverson, 2005).

One of the aims of this study was to examine formal versus informal patterns of help-seeking intentions and past help-seeking behavior in this population. Regarding informal sources, participants indicated they would be most likely to seek help in the next year from their partner/spouse, family, or friends by far over the Internet or clergy for both a physical and psychological problem, although approximately 20-25% indicated some likelihood of seeking help from the Internet/self-help book. These results are important in that they may inform outreach programs, making sure that not only veterans but veterans' friends and family have information about VA health care programs.

Although most veterans indicated they would be "extremely unlikely" to seek help from formal sources in the next year, participants indicated they would be most likely to seek help for a physical problem from a VA physician (27.1%). This finding may provide support for the importance of mental health screening in VA primary care. For those indicating some likelihood of seeking help for a psychological problem in the next year, 18.2% endorsed likelihood from a VA mental health professional, followed by 16.3% from a VA physician. Although these results are exploratory in nature and the sample is relatively small and homogeneous, an interesting finding is that of the veterans intending to seek help, they will likely seek help from the VA over private health care.

Percentages were also obtained on formal and informal sources of past help-seeking behavior for this sample. Most veterans indicated they did not seek help for a psychological

problem in the last year from formal sources; however, 45.5% indicated they sought help from a VA physician, and 42.5% indicated they sought help from a VA mental health professional for a psychological problem. Two points are noteworthy in these findings. The first point highlights the fact that more veterans sought help from a VA physician for a psychological problem, which may provide some support regarding physical health providers as gatekeepers to mental health services. Second, consistent with the percentages obtained for help-seeking intentions, veterans indicated having sought help from the VA over the private sector. This second point was true for physical problems as well, with 75.4% of veterans having sought help from VA physicians over 46.5% in the private sector. Regarding informal sources, the vast majority of veterans sought help from family or friends for both psychological and physical problems and most found those sources helpful.

Conclusions. Overall, results from the current study provide some support for the new model of help-seeking. For two of the main hypotheses, help-seeking intentions from all sources for a psychological and a physical problem, results of the final models indicated predictor variables that fell into the illness, internal, and external/environmental categories. In addition, support for the model was demonstrated through direct logistic analyses of formal and informal sources for a psychological problem. The constructs for internal and external/environmental variables are broad, which may be a strength and weakness to the model. The intention of the proposed model of help-seeking was not to discard prior models of help-seeking, but rather to suggest that alternative models or alternative ways of thinking about help-seeking behavior in veterans should be considered.

Another important finding in the current study is the consistent presence of the independent predictor variable *attitudes towards seeking psychotherapy* in almost every linear

and logistic regression analysis for both psychological and physical problems from formal, informal, and VA sources. In every model of the current analysis, positive attitudes were predictive of help-seeking. This is consistent with prior research in non-veteran samples (Bayer & Peay, 1997; Elhai & Simons, 2007; Fischer & Farina, 1995; Mackenzie, Knox, Gekoski, & Macaulay, 2004; Shaffer, Vogel, & Wei, 2006; Vogel et al., 2006) demonstrating a positive relationship between attitudes and help-seeking behavior. This is the first study to examine attitudes toward seeking psychotherapy in veteran samples, and results provide strong support for its inclusion in future studies. Administrators and clinicians interested in reaching out to veterans might focus their efforts on changing veterans' *attitudes regarding psychotherapy* in addition to stigma. More specifically, outreach efforts might focus on the veteran's ability or willingness to seek help for mental health problems.

One major limitation to the present study was highlighted in the direct logistic regression analyses. Veterans completed questionnaires regarding their mental and physical health in the past four weeks and then were asked about their help-seeking behavior in the past year; therefore, their mental and physical health at the time they sought help is unknown. Therefore, for the logistic analysis, the survey assessment does not provide the most accurate snapshot of the veteran. To that end, assessment of help-seeking intentions is limited in that the behavior has not yet happened. A prospective analysis would alleviate both these situations and would be recommended for future analyses. Another limitation was the relative homogeneity of the sample, with the majority identifying as male (86.2%), Caucasian (87.7%), non-active duty (89.5%), endorsing 1-2 deployments (88.9%), full-time employment (67.4%), currently married (57.8%), and having one or more children (57.5%).

Although a sample size of 325 was considered adequate for the analysis planned, future OEF/OIF studies regarding help-seeking should aim for larger samples and more evenly distributed samples regarding demographics and mental and physical health status. The veterans in the current study were already registered with the Ann Arbor VA Healthcare System and therefore already taking steps toward seeking help. Although veterans reported barriers to seeking help for a mental health problem, such as documentation on their medical record and stigma, those barriers were not significant predictors within the help-seeking models. Future studies should examine more closely the relationship, interaction, and relative importance of these variables and their impact on the decision to seek help. The primary focus of this study was to survey returning OEF/OIF veterans via the Internet to determine which variables best predict those who have sought or were willing to seek help for a psychological or physical problem. It is certainly the hope that this study will contribute to the literature as well as provide information regarding predictors and barriers to care for our country's veterans.

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Appendix A – List of Acronyms

AHSQ – Actual Help-Seeking Questionnaire

ATTSPPHS - Attitudes Towards Seeking Professional Psychological Help Scale

AUDIT – Alcohol Use Disorders Identification

BMH – Behavioral Model of Health

CSM – Common Sense Model

GHSQ – General Help-Seeking Questionnaire

GP – General Practitioner

HBM – Health Belief Model

IASMHS – The Inventory of Attitudes Toward Seeking Mental Health Services

ISEL – Interpersonal Support Evaluation List

MCS – Mental Component Scale of the SF-36

MDE – Major Depressive Episode

NCS – National Comorbidity Survey

NGSE - New General Self-Efficacy Scale

NVVRS – National Vietnam Veterans Readjustment Survey

OEF – Operation Enduring Freedom

OEF – Operation Iraqi Freedom

PCP – Primary Care Physician

PCS – Physical Component Scale of the SF-36

PIN – Personal Identification Number

PTSD – Posttraumatic Stress Disorder

PTSS – Posttraumatic Stress Symptoms

TPB – Theory of Planned Behavior

TRA – Theory of Reasoned Action

SF-36 – Medical Outcome Study Questionnaire – Short Form

SRM – Self-Regulation Model

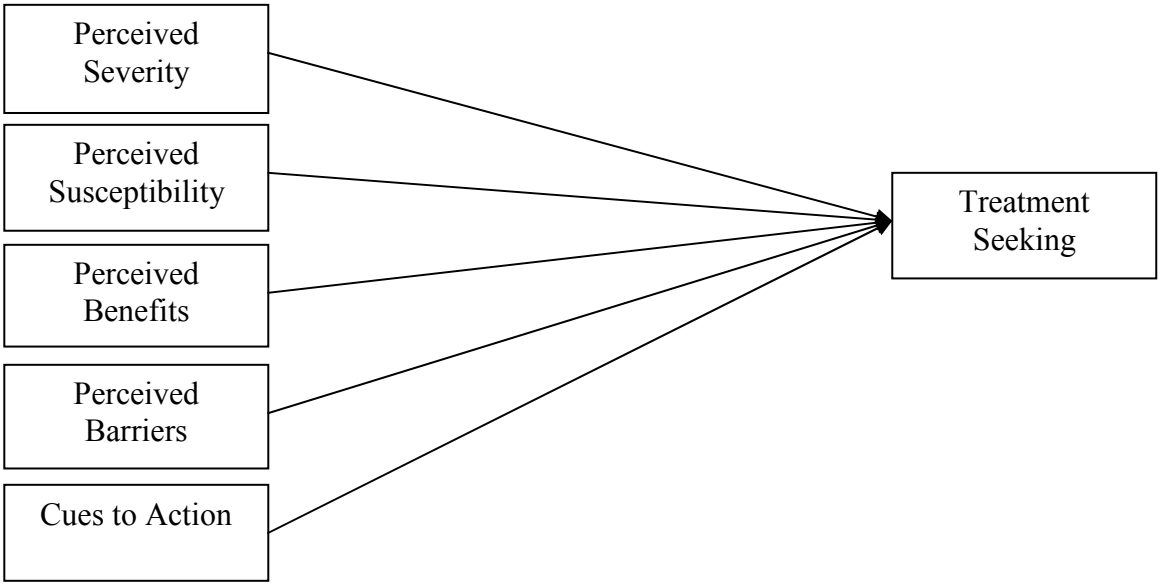
SSOSH - Self-Stigma of Seeking Help Scale

SSRPH - Social Stigma for Receiving Psychological Help Scale

URICA – University of Rhode Island Change Assessment

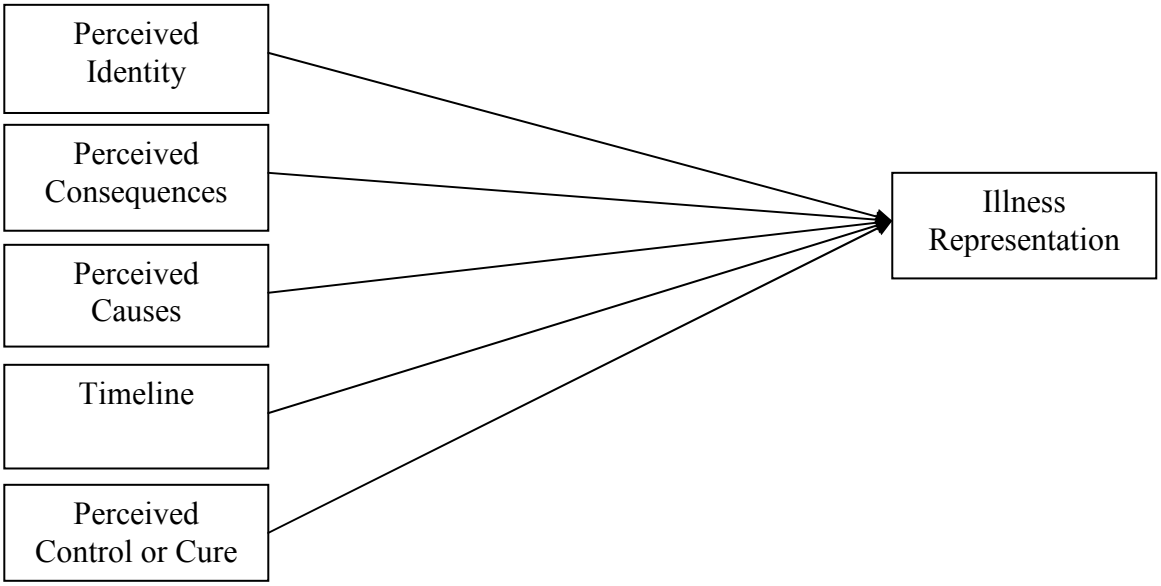
Appendix B

Health Belief Model



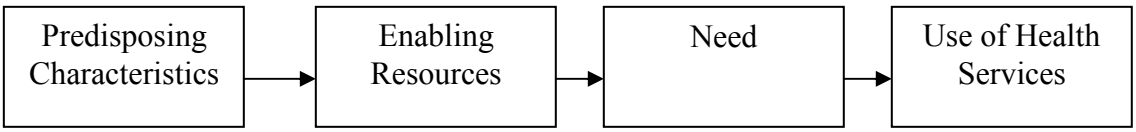
Appendix C

Self-Regulation Model



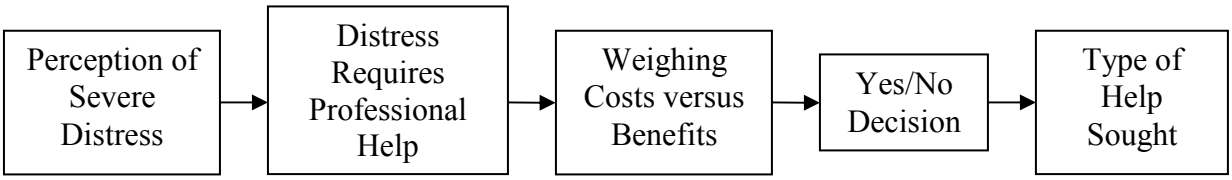
Appendix D

Behavioral Model of Health



Appendix E

Solomon's Model



Appendix F

Demographic Characteristics of Participants

Characteristics	n	%
Age		
20-28	110	33.8%
29-39	108	33.2%
40-63	107	32.9%
Gender		
Male	280	86.2%
Female	45	13.8%
Race		
Caucasian	285	87.7%
African American	18	5.5%
Hispanic	12	3.7%
Asian	2	0.6%
American Indian/Alaska Native	4	1.2%
Don't wish to Respond	4	1.2%
Branch of Service		
Army	153	47.1%
Navy	23	7.1%
Air Force	23	7.1%
Marines	37	11.4%
National Guard	89	27.4%
Relationship Status		
Married	188	57.8%
Separated/Divorced	37	11.4%
Cohabitating/Living Together	26	8.0%
Single/Never Married	74	22.8%

Characteristics	n	%
Number of Children		
None	138	42.5%
1-2 Children	113	34.8%
3-4 Children	60	18.4%
5-6 Children	11	3.4%
More than 6	3	0.9%
Employment Status		
Full Time	219	67.4%
Part Time	32	9.8%
Unemployed	48	14.8%
Disability	26	8%
Time Back Most Recent OEF/OIF		
Less than 6 months	6	1.8%
6 months – 1 year	13	4%
1 year – 1½ years	29	8.9%
1½ years – 2 years	31	9.5%
More than 2 years	246	75.7%
Total Time in Theatre		
Less than 6 months	44	13.5%
6 months – 1 year	126	38.8%
1 year – 1½ years	122	37.5%
1½ years – 2 years	24	7.4%
More than 2 years	9	2.8%
Number of Deployments		
1-2 deployments	289	88.9%
3 deployments	20	6.2%
More than 3	16	4.9%
Active Duty		
No	291	89.5%

Characteristics	n	%
Yes	34	10.5%
Service Connected		
Yes, Physical	92	28.3%
Yes, Mental	7	2.2%
Yes, Both	70	21.5%
No	156	48%
%Physical Service Connected		
1 – 25%	76	23.4%
26% - 50%	58	17.8%
51% - 75%	13	4%
76% - 100%	9	2.7%
%Mental Service Connected		
1 – 25%	17	5.2%
26% - 50%	44	13.5%
51% - 75%	2	0.6%
76% - 100%	8	2.5%
Seeking Service Connection		
Yes	93	28.6%
No, but thinking about it	84	25.8%
Not considering it	122	37.5%
Don’t wish to Respond	26	8%

Appendix G

Demographic Comparison of Responders versus Non-Responders

Characteristics	Responders (N = 325)		Non-Responders (N = 1724)	
	n	%	n	%
Gender				
Male	279	85.8%	1519	88.1%
Female	46	14.2%	205	11.9%
Race				
American Indian	1	0.31%	5	0.3%
Asian	0	0%	10	0.6%
African American	7	2.16%	69	4.0%
Declined	7	2.16%	51	3.0%
Native Hawaiian	0	0%	3	0.2%
Unknown	158	48.77%	872	50.6%
Caucasian	152	46.60%	714	41.5%
Branch of Service				
Air Force	27	8.4%	113	6.6%
Army	228	70.3%	1195	69.3%
Marines	36	11.2%	256	14.8%
Navy	23	7.1%	146	8.56%
Unknown	10	2.8%	14	0.8%
Relationship Status				
Divorced	33	10.2%	210	12.2%
Married	159	48.8%	644	37.5%
Never Married	115	35.5%	746	43.4%
Separated	3	0.9%	63	3.7%
Unknown	14	4.3%	59	3.2%
Widowed	1	0.3%	2	0.1%

Characteristics	Responders (N = 325)		Non-Responders (N = 1724)	
	n	%	n	%
Employment Status				
Active Military Duty	3	0.9%	13	0.8%
Full Time	139	42.6%	619	35.9%
Part Time	25	7.7%	149	8.6%
Unemployed	125	38.6%	825	47.9%
Retired	7	2.2%	16	0.9%
Self-employed	5	1.5%	18	1.0%
Unknown	21	6.5%	84	4.9%
Active Duty				
No	320	98.5%	1698	98.5%
Yes	5	1.5%	26	1.5%
Service Connected				
Yes	175	53.7%	809	46.9%
No	147	45.4%	890	51.6%
Unknown	3	0.9%	25	1.5%

Appendix H

Demographics Questionnaire

Demographics

1. Gender
    a. Male
    b. Female

2. Age _____

3. Race
    a. Black or African American _____
    b. White _____
    c. Hispanic _____
    d. Asian _____
    e. American Indian/Alaska Native _____
    f. Native Hawaiian or other Pacific Islander _____
    g. More than one race_____
    h. Don't wish to respond _____

4. Branch of Service
    a. Army
    b. Navy
    c. Air Force
    d. Marines
    e. Coast Guard
    f. National Guard

5. Relationship Status
    a. Married
    b. Separated/Divorced
    c. Cohabitating
    d. Single/ Never married

6. Children
    a. How many?
    b. Ages?
    c. How many live with you?

7. Employed
    a. Full-time (35-40 hours/week)_____
    b. Part-time (less than 35 hours per week)_____
    c. Unemployed_____

   d. Disability_____

8. Time back from OEF/OIF
   a. Less than 6 months
   b. 6 months – 1 year
   c. 1 year – 1½ years
   d. 1½ years – 2 years
   e. More than 2 years

9. Total Time in Theater
   a. Less than 6 months
   b. 6 months – 1 year
   c. 1 year – 1½ years
   d. 1½ years – 2 years
   e. More than 2 years

10. Number of Deployments
   a. 1-2
   b. 3
   c. More than 3

11. Are you currently considered active duty?
   a. Yes
   b. No

12. Are you currently service connected?
   a. Yes, physical condition _____%
   b. Yes, mental health condition _____%
   c. Yes, both _____% physical, _____% mental health
   d. No

13. Are you currently seeking service connection or an increase in service connection in the near future?
   a. Yes
   b. No, but thinking about it
   c. Not considering it
   d. Don't wish to respond

Appendix I

«Name»
«Address»
«City», «State» «Zipcode»

[Date of letter]

Dear Veteran,

I am writing to invite you to participate in a research study being conducted through the VA Ann Arbor Healthcare System and Eastern Michigan University. You are being asked to participate based on your status as a veteran who served in Operation Iraqi Freedom or Operation Enduring Freedom (OEF/OIF) who has registered with the VAAAHS. The purpose of the study is to examine different variables that may be involved in the decision to seek help for mental or physical health problems. Among OEF/OIF veterans, many veterans do not seek help even though they are experiencing problems. We would like to know why people do not seek care as well as what factors may influence help seeking so that we can improve access to care for returning veterans. In addition, we would like to know where you would most likely go for help if you needed it (i.e., at a VA, private doctor, friends or family.)

This is a one-time only survey that you can access online. The first 200 participants will be offered a $10 Target Gift Certificate that will be mailed to you after completion of the survey. When you enter the survey you will be notified whether you will be eligible for the gift card. The survey involves answering questionnaires and takes approximately 25-30 minutes to complete. Your responses to the survey are **completely anonymous and confidential**. The surveys are coded with a participant number so that no names or addresses will be linked to your responses. Any information gathered during the survey **WILL NOT** be included in your medical records and will not be accessible to your care providers. Your name and address will be collected separate from your survey responses only to send the gift card. This information will be destroyed once the gift cards are sent.

Participation in this survey is completely voluntary and you may withdraw at any point. You may access the survey at the following address: http://people.emich.edu/xxxxx/ and your survey password is ABC123. You may become distressed by answering questions about your mental or physical health. If this occurs, you may contact me as the study coordinator at the phone number given below. In addition, you are free to contact me if you have any questions about the study or are having difficulty accessing or completing the survey. My email address is xxxxx@emich.edu and my phone number is (xxx) xxx-xxxx. If you become distressed due to the survey and need to speak with someone, you may contact the study coordinator, Carole Porcari at the number above. If you feel you are a danger to yourself or someone else, you may come directly to urgent care at VAAAHS, contact the psychiatry resident on call by calling (734) 769-7100 (ask for the psychiatry resident on call), or contact 911.

Thank you for your time and consideration.

Sincerely,

Carole Porcari, M.S.
Eastern Michigan University

Sheila A.M. Rauch, Ph.D.
Psychologist, VAAAHS

Appendix J

MEMORANDUM

Department of
Veterans Affairs

Date: March 17, 2008
To: Rauch, Sheila, PhD
From: Ann Arbor VA Research Service (11R), Subcommittee on Human Studies
(FWA# IRB00000264) of the VA Ann Arbor Healthcare System (IORG0000156)
Subj: Project review at the March 13, 2008 meeting, Item #5.01.

5.01 Rauch, Sheila, PhD 0010 Predictors of Help-seeking Behavior in Returning Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) Veterans

Continued Approval Status (Months, Exp Date, Risk) 12 2/13/2009 Minimal Y

2/26/08 Dr. Rauch submitted an amendment request to add additional questions to the study survey. These additional questions ask primarily about physical activity and use of technology and collect some additional health-related information. Please see attached list for the specific questions to be added.

This information is being collected to provide pilot data for a future project to promote physical activity among the OIF/OEF veteran population. We expect the additional questions will add no more than 5 minutes to the survey completion time.

ATTACHMENT:
List of new questions

3/13/08 (Sheila Rauch did not attend the IRB meeting.)
The amendment request is acceptable. The additional questions will not add more than a few minutes to the time required to complete the study survey.

ACTION TAKEN:
APPROVED, Additional questions to study survey
(8=for, 0=opposed, 0=abstain, 1=not present) [SB]

Human Studies Committee regulations require investigators to follow these procedures:

1) You must use copies of the VA IRB-approved Consent Form with the VA logo and date of approval & expiration.
2) You must submit a "Request for Continued Approval of Human Use" at least 10 days before the expiration date.
3) All changes or deviations from the project protocol, consent form or IRB policies must first be approved by the IRB.
4) Report a Serious Adverse Event or Unanticipated Problem that occurs to a local subject within 7 calendar days See the VA IRB SAE and UPR Reporting Policy at "http://www1.va.gov/aavaresearch/page.cfm?pg=3"

VA Human Studies IRB Coordinator = Douglas Feldman (734) 845-3440 e-mail = doug.feldman@med.va.gov
R&D FAX = (734) 845-3241 VA Research Web Site = http://www1.va.gov/aavaresearch

Sincerely

Carol Kaufman, M.D.
VA Human Studies Chairperson

Appendix K

EASTERN MICHIGAN UNIVERSITY

Education First

April 14, 2008

Dear Carole Porcari:

The Human Subjects Institutional Review Board (IRB) of Eastern Michigan University has granted approval to your proposal, "Predictors of Help-seeking Behavior in Returning Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) Veterans."

After careful review of your completion application, the IRB determined that the rights and welfare of the individual subjects involved in this research are carefully guarded. Additionally, the methods used to obtain informed consent are appropriate, and the individuals participating in your study are not at risk.

You are reminded of your obligation to advise the IRB of any change in the protocol that might alter your research in any manner that differs from that upon which this approval is based. Approval of this project applies for one year from the date of this letter. If your data collection continues beyond the one-year period, you must apply for a renewal.

On behalf of the Human Subjects Committee, I wish you success in conducting your research.

Sincerely,

Deb de Laski-Smith, Ph.D.
Interim Dean
Graduate School
Administrative Co-Chair
University Human Subjects Review Committee

Note: If project continues beyond the length of **one** year, please submit a continuation request form by **4/15/09.**

Reference # 080402

University Human Subjects Review Committee · Eastern Michigan University · 200 Boone Hall
Ypsilanti, Michigan 48197
Phone: 734.487.0042 Fax: 734.487.6050
E-mail: human.subjects@emich.edu
www.emich.edu

Appendix L

Welcome OEF/OIF Veterans!

This page contains information about the scope and purpose of this research. Much of the information here is contained in the letter you received in the mail; however, you should still review this page. If you have any questions, please feel free to contact me.

ATTENTION: Gift Cards are Currently Available!

Thank you, Carole Porcari

PURPOSE OF RESEARCH STUDY: To identify different variables that may be involved in the decision to seek help for a psychological or physical problem. In addition, we will ask you about your help-seeking behavior from various sources (informal vs. formal, VA vs. non-VA.)

DESCRIPTION: Participants will be OEF/OIF veterans, who registered with the Ann Arbor VA Healthcare System since operations began in 2001 through July 2007. You were contacted by U.S. mail and asked to participate in an online study based on your registration with the VAAAHS. The Web-based survey is conducted once per person, and is expected to take about 20-30 minutes to complete. The first 200 people who complete the study will be offered a $10 gift certificate to Target. You will be given a unique personal identification number (PIN) to access the survey. In order to receive your $10 gift certificate, we will ask you for your name and mailing address. Your name and address will not be associated with your responses. Your responses to the survey are completely anonymous (cannot be connected to your identity) and confidential. Any information gathered during the survey **WILL NOT** be included in your medical records and your responses will not be available to your care providers. Your participation in the study is completely voluntary and you may choose to withdraw from the study at any point during the survey. Choosing not to participate will have no effect on any services you receive. Please direct questions about the consent process and the rights of research subjects to the Institutional Review Board Coordinator, Douglas Feldman, at (xxx) xxx-xxxx. You may contact Dr. Sheila Rauch, the principal investigator for the study, if you have additional questions about the conduct of the study at (xxx) xxx-xxxx.

RISKS: There are no expected risks associated with the survey; however, should you become distressed by answering questions about your mental or physical health, you may contact the study coordinator, Carole Porcari, at (xxx) xxx-xxxx during daytime hours or by email at xxxxxx@emich.edu. You may also contact 911 or the VAAAHS psychiatry resident on call at (734) 769-7100 if you should ever feel that you might harm yourself or others.

BENEFITS: Responding to the various questionnaires may provide you insight into difficulties you may be having. In addition, you will be part of a research study that could result in improved care for veterans.

ALTERNATE COURSES OF ACTION: If you choose not to participate, you may ignore and dispose of the contact letter. Once in the survey, you may withdraw or exit at any time.

STATEMENT OF RESEARCH RESULTS: The initial list of names and addresses for the contact letter and follow-up postcard will be stored at the VAAAHS and destroyed after the

postcard is sent. The research data obtained from the survey will be stored in a locked office on a password protected computer at Eastern Michigan University. No information gathered during this survey will be included in your medical records.

Results of the research will be disseminated in this investigator's dissertation. In addition, it will be disseminated to the psychological community in the form of poster- and paper-presentations at conferences and publications in journals. Your identity will not be disclosed; no personally identifiable data will be reported to ensure confidentiality of the participants' information. You may contact the study coordinator, Carole Porcari, to obtain results from the study.

SPECIAL CIRCUMSTANCES: Any problems accessing or completing the survey should be directed to the co- investigator, Carole Porcari.

COMPENSATION: You are asked to spend approximately 20-30 minutes of your time to complete this survey. The first 200 participants who complete the survey will be offered a $10 Target Gift Card.

This research protocol and informed consent document has been reviewed and approved by the Eastern Michigan University Human Subjects Review Committee for use from 4/1/2008 to 4/1/2009. If you have questions about the approval process, please contact Dr. Deb de Laski-Smith (xxx-xxx-xxxx, Interim Dean of the Graduate School and Administrative Co-chair of UHSRC, human.subjects@emich.edu).

By selecting "Yes" below and entering this survey, I acknowledge that I have read, understood, and accepted the terms outlined above.

- ☐ Yes, I agree to the above consent form
- ☐ No, I do not agree to the above consent form