2019

Veterans' Help-Seeking and Spousal Support for PTSD: A Preliminary Study

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DISSERTATION

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Psychology in the Department of Clinical Psychology
at Antioch University New England, 2019

Keene, New Hampshire

Department of Clinical Psychology

DISSERTATION COMMITTEE PAGE

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VETERANS' HELP-SEEKING AND SPOUSAL SUPPORT FOR PTSD: A PRELIMINARY STUDY

presented on July 19, 2019

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Dedication

In dedication and appreciation of U.S. veterans, thank you sincerely for your sacrifices. It is my earnest hope that this preliminary work and others that follow will contribute to further development of mental health services and outreach that are responsive to the needs and preferences of veterans and their families.

And also to my winning team: Chriser, Clyde, Susie, and Da wo

Acknowledgments

First, thank you to my advisor Dr. Gargi Roysircar, for her crucial role in this project. Thank you for your commitment and support to not only myself but also to the many students and advisees whom you have guided and supported with great love, joy, and tenacity.

Thank you to my dissertation committee members, Dr. Bryan Clarke, and Dr. Melissa Boudreau—my sincerest appreciation for your knowledge of and experience in treating veterans with PTSD and your thoughtful review and guidance of the iterations of this work and the accompanied investment of your time.

I would also like to thank Dr. Adam Smith, for his support of my continued efforts to manage the demands of both this dissertation and areas of personal and professional importance to me.

Josh Cast of FourGuysGuns and Lieutenant Commander Hobie Saunders-thank you both for your impromptu role in providing essential support for participant recruitment.

Thank you to my doctoral seminar cohort members, Ashland Thompson and Samuel Collier, for your feedback on many pieces of writing, general support, and positive attitudes throughout the early stages of dissertation development.

Finally, thank you to the interdisciplinary staff of the National Center for Posttraumatic Stress Disorder in White River Junction, VT for including me in weekly journal clubs that informed many stages of my dissertation study.

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Abstract

Continued engagement in military conflicts and known underutilization of mental health services by veterans necessitates understanding of factors influencing veterans' attitudes about mental health treatment and decisions to seek services. The present study examined relationships between posttraumatic stress disorder (PTSD) symptom severity, perceived support from spouse, and attitudes toward mental health help-seeking among married U.S. veterans. Participants (N =39) were recruited using social media outreach, an online gaming platform, and through print fliers. First, it was hypothesized that perceived spousal support would be significantly positively correlated with attitudes toward treatment seeking, which was supported to a moderate degree (r=.345, p=.031). Second, it was hypothesized that PTSD symptom severity and perceived support from spouse would be negatively correlated at a significance level of .05, which was not supported (r=-0.184, p=.263). Third, it was hypothesized that participation in mental health treatment would be associated with more positive attitudes toward mental health services, which was supported, $t(37)$=2.51, p=0.016. Furthermore, PTSD diagnostic status was found to moderate the relationship between perceived support from spouse and attitudes toward mental health treatment, such that support was associated with more positive treatment attitudes for married veterans without PTSD (r=.440, p=0.012); but this relationship may be reversed or extinguished in the presence of posttraumatic symptoms above clinical threshold for probable diagnosis. Clinical implications of study findings, limitations to the study, and directions for future research are discussed.

Keywords: PTSD, veterans, support from spouse, help-seeking attitudes, treatment initiation

Veterans' Help Seeking and Spousal Support for PTSD: A Preliminary Study

Veterans often contend with psychological concerns upon returning home from military service. Although service men and women are resilient, a person's preexisting psychological resources may be insufficient to fully address the challenges associated with deployment and reintegration. Recent data indicate that approximately 51% of VA-enrolled individuals have received one or more psychological diagnoses (Seal, 2011). Within this population, the most common mental health diagnosis is Posttraumatic Stress Disorder (PTSD; Access to Mental Health Care and Traumatic Brain Injury Services, 2014). Factors of recent, but long-lasting military conflicts have led to increasingly high rates of distress among returning veterans, making the need for effective mental health intervention all the more urgent.

Despite the high prevalence of psychological distress within the veteran population, mental health service utilization by veterans remains low. Cultural and self-stigma and negative beliefs about the potential consequences of seeking treatment for mental health have been found to be common barriers to care (Hoge et al., 2004). Certain symptoms of PTSD also contribute to an overall reluctance to seek mental health treatment: most notably, avoiding memories of traumatic events or of external stimuli related to traumatic events, which constitutes Cluster C of symptom criteria for a PTSD diagnosis. (American Psychiatric Association, 2013). Similarly, it has been shown that symptoms of avoidance can interfere with or preclude a person with PTSD from seeking mental health treatment (Brancu et al., 2014).

Although substantial research has been devoted to examine potential barriers to mental health treatment for veteran populations (Hoge et al., 2004), factors that may facilitate help-seeking behaviors remain less examined in the literature. Within the subset of literature investigating factors that promote help-seeking, social support has been a commonly investigated

construct (Jennings, 2014). Research results in this area, however, have been mixed as the construct of social support is likely too broad to be useful as a singular operational concept (Barrera, 1986). Within the social support literature, the most frequently investigated and influential sources of social support are proximal relationships; for instance, spouses are the most frequently reported source of social support among adults (Beach, Martin, Blum, & Roman, 1993). Given the need for more specific research in the area of social support and help-seeking, the present study investigated potential relationships between help-seeking and perceived spousal support for veterans with and without probable posttraumatic symptoms.

Purpose of the Study

I expected to conduct a preliminary study with a small sample. I attempted to investigate the potential relationship between perceived spousal support and the help-seeking attitudes and behaviors of married veterans with or without probable PTSD. Indicators of PTSD symptomology, degree of perceived spousal support, help-seeking attitudes, and treatment participation factors were investigated in an effort to understand the role of spousal support in mental health help-seeking behaviors and attitudes among married veterans. Quantitative measures were used to collect data. This data set was then analyzed to best answer the following proposed research questions: (a) Are married veterans likely to have more positive help-seeking attitudes in the presence of greater perceived support from spouse? (b) Among married veterans, is greater PTSD symptom severity associated with lower perceived support from spouse? (c) Is there a relationship between PTSD symptom severity and help-seeking attitudes among married veterans? and (d) Do married veterans utilizing mental health treatment report more positive attitudes of mental health treatment? In this preliminary study, scores on measures of help-seeking attitudes, treatment initiation and engagement factors, PTSD symptom severity, and

perceived spousal support were collected and examined in an effort to understand the ways in which spousal support may be related to help-seeking attitudes and behaviors, independent of or in relation to PTSD symptom severity.

A Review of the Literature

Posttraumatic Stress Disorder among Veterans

Estimates for PTSD prevalence among U.S. veterans have ranged considerably across studies (Kang et al., 2003; Kulka et al., 1990; Thomas et al., 2010). This inconsistency can in part be explained due to differences in measurement—namely lifetime prevalence versus rates at time of data capture. Differences have also been found by service era. The National Vietnam Veterans Readjustment Study estimated lifetime prevalence for Vietnam era veterans at 30.9% for men and 26.9% for women (Kulka et al., 1990). This study placed incidence rates of PTSD at 15.2% for men and 8.1% for women for Vietnam theater veterans (Kulka et al., 1990). In a study of Gulf War veterans, Kang et al. estimated the prevalence of PTSD at 10.1%. The prevalence of diagnosable PTSD has been estimated to fall between 20–30% for veterans of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF; Thomas et al., 2010). In recent literature, PTSD has been identified as one of the most commonly diagnosed mental health conditions among veterans.

Military Sexual Trauma and PTSD. Military Sexual Trauma (MST) refers to sexual assault or harassment experienced during military service (U.S. Department of Veterans Affairs, 2010). MST includes experiences that may also be classified as a Criterion A traumatic event for posttraumatic stress disorder, and others that may not meet this additional definition but may still have deleterious impact on a person, including increased risk for certain mental health disorders (Kimerling et al., 2010). Prevalence estimates of MST among veterans are quite broad. Among

VA enrolled individuals, approximately 1 in 4 women and 1 in 100 men report having had experienced MST when screened by their VA provider (U.S. Department of Veterans Affairs, 2015). Factors that influence estimates of MST prevalence in other studies include period of measurement (lifetime versus incidence within a set time span), method of interview (in person interview, phone screenings, mailed survey), service era, gender, and definition of terminology (Suris & Lind, 2008). Regarding differences found related to terminology, it is important to note that while the Department of Veterans Affairs includes within the definition of MST sexual harassment and coercion, certain studies investigating MST to date have been limited to events of sexual assault and rape only (Suris & Lind, 2008). A study examining PTSD among men and women veterans of Iraq and Afghanistan found that 31% of women with a PTSD diagnosis also screened positive for MST, and among men with a diagnosis of PTSD, 1% also screened positive for MST (Maguen et al., 2012). For both men and women, comorbid MST screen with PTSD was associated with further concurrent mental health diagnoses compared to those with PTSD and no history of MST (Maguen et al., 2012). In addition to military combat exposure, MST represents a specific risk factor for development of PTSD among military service members and veterans (Hoge et al., 2004; Katz, Cojucar, Beheshti, Nakamura, & Murray, 2012).

Mental Health Treatment Utilization among Veterans

Although mental health conditions including PTSD, depressive disorders, and anxiety disorders are present among veterans, mental health service utilization remains low. Hoge et al. (2004) found that 20–29% of surveyed soldiers and Marines screened positive for either PTSD, anxiety, or depression on assessment measures administered prior to and following deployment to Iraq and Afghanistan. This study found that of those with a positive screen for a mental health condition, 23–40% sought treatment for experienced symptoms (Hoge et al., 2004). Although

studies have sought to investigate potential factors interfering with engagement in mental health services and receiving adequate treatment, the mechanisms of low utilization remain unclear.

While perceived barriers to mental health service use among veterans and sub-groups within the veteran population have been widely investigated, self-identified barriers to care are not always associated with receipt or non-receipt of treatment (Hoerster et al., 2012). This finding suggests that factors may influence treatment engagement outside of known potential barriers, such as stigma and low access to care. Personal beliefs or values may be difficult to recognize or report on measures investigating potential discouraging factors for utilization of mental health care as cultural values and norms may not be apparent to those embedded within any system. A study investigating beliefs about mental health and possible deterrents to care (Vogt, Fox, & Di Leone, 2014) found negative personal beliefs related to self and negative beliefs related to treatment-seeking rather than beliefs toward treatment itself to be significantly associated with decreased likelihood of seeking care among veterans, while external stigma was not. This finding further supports the idea that self-report assessment of experienced barriers may be insufficient to explain low mental health service utilization among veterans.

Stoicism and resilience in military culture. Stoicism is an attitude and behavior associated with the bearing of pain or hardship without display of emotion or complaint. This concept is integral to military culture as a taught and valued method for weathering difficulties and potential atrocities of wartime and combat (Weiss, Coll, & Metal, 2011). Stoicism among service members and veterans can be viewed as a component of the military's "culture of resilience" (Adler & Sowden, 2018, p. 44). Resilience assumes ability to withstand, mend, and further develop in exposure to hardship. Inherent also in the concept of resilience is that this ability can be taught and/or learned and developed. While this set of values and skills offer real

and adaptive resources for survival and well-being for service members, these principles also carry limitations that can create difficulties in alternative contexts such as reintegration and return to civilian life.

Stoicism in particular, while promising greater strength, efficiency, or competence, can alternatively serve as a barrier to acknowledgment of limitations that all people have (Wertsch, 2006). Resilience and stoicism are each highly reinforced both explicitly and implicitly within the military culture (Adler & Sowden, 2018). Internalization of feeling and display of stoic affect are taught across early trainings for military personnel (Weiss et al., 2011). Additionally, military culture's prioritization of group well-being over personal needs may contribute to sacrifice of self-compassion that may, in turn, interfere with cultivation and practice of self-care and positive coping (Klich, 2016). These values may contribute to low rates of treatment-seeking and engagement in mental health treatment, as moving toward assistance from others for a psychological issue may threaten allegiance to military values and beliefs about the self. Engagement in mental health may also seem to be at odds with values of stoicism because acknowledgement and expression of experienced emotion is inherent in psychotherapy (Weiss et al., 2011).

Theory of Social Support

Social support is defined by Shumaker and Brownell (1984) as "an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient" (p.13). Social support as a construct has been associated with general well-being from its emergence within the research literature (Zola, 1973). Additionally, social support has been investigated as a construct that influences psychological well-being (Syrotuik & D'Arcy, 1984). Research has found a lack of social network to be

associated with elevated levels of depressive and anxious symptoms (Kawachi & Berkman, 2001; Syrotuik & D'Arcy, 1984). Social support satisfaction has also been correlated with lower suicide risk in veteran populations (Jakupcak et al., 2010). Limited social support has been identified as a post-trauma risk factor for the development of PTSD among veterans (Laffaye, Cavella, Drescher, & Rosen, 2008).

Main effect and buffering models of social support. The lengthy history of studies on social support has engendered two major theoretical models that consider (a) a main effect on various measures of well-being and (b) a buffer effect for negative life events (Cohen & Wills, 1985). The two models do not necessarily operate independently of one another, although one model may become more prominent in certain situations (Kawachi & Berkman, 2001). The main effect mechanism asserts that social ties act as a beneficial and protective mechanism regardless of whether an individual is under stress while the buffering hypothesis suggests that social relationships and bonds exert positive, or in their absence, additional negative influence on a person's well-being in the presence of a significant stressor (Kawachi & Berkman, 2001).

Perceived support and enacted support. Perceived support and enacted support are two unique operational definitions within the larger concept of social support. Perceived social support relies on the recipient's appraisal of the support received, while enacted social support attempts to examine the availability of actions that have been deemed supportive in nature. Although these constructs have been shown to be moderately correlated in a meta-analysis (Haber, Cohen, Lucus, & Baltes, 2007), perceived spousal support is likely to be more closely related to indicators of well-being because it may represent enacted support that is interpreted as beneficial by the recipient (Jennings, 2014). This assumption recognizes the importance of the recipient's appraisal of the support provided, as the same behavior may be experienced as

supportive or non-supportive by an individual. Regardless of the pathway with which social support attenuates psychological distress, it has been found to be an important factor in several mental health outcomes (Cohen & Wills, 1985; Nagai, 2015; Shaffer, 2010).

Despite the range of available evidence supporting the connection between social support and psychological distress, the construct of social support remains inconsistently and ambiguously defined across studies. Various forms of social support including functional support, support from family, support from military unit members or superiors, support from friends, available social network, and others have been investigated as potential protective factors for psychological and physical well-being.

Social Bonds and PTSD

Human beings live in historically and inherently social and interdependent contexts that include important relationships with others and ascribed meaning to the world around them. Research investigating trauma type and trauma sequalae have consistently found interpersonal traumas to be associated with greater likelihood for the development of posttraumatic stress disorder (Charuvastra & Cloitre, 2008). Social support has been associated with PTSD from two theoretical understandings: social support offering buffer from severity of posttraumatic symptoms, or dearth of social support creating particular risk for the development and maintenance of posttraumatic symptoms (Charuvastra & Cloitre, 2008). Current evidence suggests support for both of these models.

Research pertaining to social support and social network has found that a person's evaluation/appraisal of received support is more closely associated with posttraumatic stress and other mental health outcomes than are measures of a person's network of social connections (Charuvastra & Cloitre, 2008). Social support was found to be a strong post-war mediator of risk

for PTSD among Vietnam era veterans (Kulka et al., 1990). Social support and factors of social connection may additionally play roles in the chronicity of experienced posttraumatic symptoms.

A longitudinal study of Vietnam era veterans found reported community involvement at an identified time-point to be associated with greater remission of posttraumatic symptoms at later assessment (Koenen, Stellman, Stellman, & Sommer, 2003). Koenen et al. additionally found that those who continued to meet criteria for PTSD were more likely to have reported greater perceived negative attitudes from their community at homecoming. A broad literature investigating negative social indicators such as blame and interpersonal friction has found strong associations between negative social inputs and posttraumatic distress (Charuvastra & Cloitre, 2008). Although operationalized definitions of supportive and negative social interactions and experiences can be highly correlated with one another, the existing literature reveals important nuance to the impact of these constructs on post-traumatic factors. In other words, constructs attempting to measure similar factors related to social support have been found to impact PTSD in varied ways and often suggest that each construct while similar, may be measuring a factor with unique influence compared with other similar variables.

Social Network and Support's Influence on Help-Seeking

In addition to positively influencing mental health, forms of social support have been found to have an impact on decisions to seek help when suffering (Nagai, 2015; Vogel, Wade, Wester, Larson, & Hackler, 2007; Zola 1973). Symptomology alone is not generally sufficient for people to seek help (Cameron, Leventhal, & Leventhal, 1993). Rather, higher levels of social support have been correlated with an increase in help seeking intentions (Nagai, 2015).

Mixed findings. While social support overall is related to help-seeking intentions, results of studies investigating the complexities of social support on help-seeking have been mixed. For instance, a two-part study designed to investigate the influence of one's social network on mental

health treatment seeking among college students found prompting from a social support network did not directly increase self-reported intent to seek treatment (Vogel et al., 2007). However, this same study found that reported attitudes toward mental health treatment-seeking were more positive for those that had been prompted to seek help (Vogel et al., 2007). In addition, attitude toward mental health treatment has been found to be a robust predictor for treatment utilization when coupled with psychological distress (Britt et al., 2011). These findings offer support for the assumption that social networks may exert influence over a person's attitudes toward mental health services and decisions to seek treatment.

Support from diverse sources (friends and family, unit leader, and unit) were found to positively influence treatment seeking attitudes amongst U.S. soldiers (Jennings, 2014). However, only support provided by family and friends was found to be significantly correlated with treatment utilization within the study (Jennings, 2014). Despite mixed findings and potentially confounding or co-existing factors, social connections have the propensity to influence a person's decision to pursue mental health treatment. A study investigating potential sex differences in help seeking among veterans found PTSD symptom severity was more strongly associated with help seeking in the presence of high relationship impairment for women but not for men (Vogt, Danitz, Fox, Sanders, & Smith, 2019). A person's social network also informs his or her social role. An inability to function in a prescribed social role, such as that of spouse, often determines when an individual will seek treatment, rather than the mere presence or severity of symptoms (Zola, 1973).

Functional impairment and interference with daily life have been found to predict mental health treatment utilization for military and civilian samples (Angst, Gamma, Clarke, Ajdacic-Gross, & Rössler, 2010; Britt et al., 2011). In a mixed methods study of U.S. reservists'

psychological treatment-seeking, qualitative analyses revealed the most frequently reported reason for not seeking treatment was perceived lack of functional impairment among those meeting criteria for mental illness (Britt et al., 2011).

Spousal Relationships a Major Source of Social Support

Spousal relationships often serve as the primary source of social support for individuals (Beach et al., 1993; Holt-Lunstad, Birmingham, & Jones, 2008; Riggs, Byrne, Weathers, & Litz, 1998). There is evidence that spousal support may be unique from other forms of social support as many studies have found potential compensatory sources of support insufficient comparatively. In a study investigating sources of social support and potential buffering effects for mental health, community supports were not found to be protective for life stressors in the absence of adequate support from a spouse among married men with full-time employment (Syrotuik & D'Arcy, 1984).

This study did find spousal support to be protective of mental health in the presence of other life stressors. Measures of spousal support were negatively correlated with symptoms of anxiety and depression, while a measure of community support found a significant negative correlation with symptoms of anxiety but not depression (Syrotuik & D'Arcy, 1984). In a study investigating the effect of social support on mental health, a person's spouse was identified as a source of helpful social support for 98% of participants (Dakof & Taylor, 1990).

Spousal relationships may be an especially important source of social support for men. In a study on confidante identities, 'spouse' was the most commonly reported confidante of men (Lowenthal & Haven, 1968). This finding did not hold true for women in the study; however married persons were significantly more likely to report having a confidante than were single individuals (Lowenthal & Haven, 1968). For veteran populations, studies investigating perceived

levels of support from various sources found the spousal relationship to be a primary source of social support (Laffaye et al., 2008). Spousal support for veterans may be important to study specifically as marriage rates are higher among U.S. veterans compared with non-veterans (National Center for Veterans Analysis and Statistics, 2019). Additional value may be placed upon support from a spouse in veteran samples as military culture and policy directly and indirectly privilege this relationship over other relationship configurations (Lundquist & Xu, 2014).

Spousal Support Influence on Mental Health and Treatment Utilization

Adequate spousal support has been found to mitigate symptoms of various psychological distress (Riggs et al., 1998). Supportive spousal relationships may act as a buffer in times of significant stress, which can result in more favorable mental health outcomes (Riggs et al. 1998). Social support of the marital relationship has been associated with lower levels of mental health disturbance, depression, and alcohol consumption, along with other mental health indicators (Holt-Lunstad et al., 2008; Williams, Frech, & Carlson, 2010). Married veterans have been found to experience fewer suicidal thoughts and demonstrate fewer suicidal behaviors than unmarried veterans (Jakupcak et al., 2010). Supportive actions by spouses may also include explicit encouragement to seek mental health treatment or supportive behaviors that facilitate treatment seeking in the presence of mental health issues.

A qualitative study investigating social support and the mental health treatment utilization of U.S. Army soldiers revealed that spouses and family members are the most frequently reported influence on a participant's decision to seek mental health services (Jennings, 2014). Support from a spouse may be of particular importance as this relationship may be a valued source of information in determining social norms that influence negative beliefs about

treatment seeking, a known barrier to mental health treatment. Additionally, a spouse may be in a position to alleviate logistical impediments to seeking mental health services through other supportive behaviors (e.g., financial assistance, providing child care, transportation, etc.).

Strong Association between PTSD and Relationship Difficulties

Interpersonal relationships and PTSD reciprocally impact one another. This is important because PTSD can negatively affect the spousal relationship. This relationship often operates through deteriorating mental health functioning and intimate relationship quality concurrently (Blow, Curtis, Wittenborn, & Gorman, 2015; Riggs et al., 1998). The protective qualities of spousal relationships on mental health are largely dependent upon relationship quality (Meis, Barry, Kehle, Erbes, & Polusny, 2010). As PTSD symptom severity has been strongly correlated with relationship distress, marital dissatisfaction, and increased sexual dissatisfaction, it is likely that PTSD symptom severity may impact the strength or function of support from spouse as a protective factor (Blow et al., 2015; Riggs et al., 1998). Laffaye et al. (2008) have shown interpersonal resources from a spouse to be associated with fewer PTSD symptoms, while the level of interpersonal stressors from a spouse was related to the presence of more PTSD symptoms. The intricacies of spousal relationships clearly warrant further exploration as a potential factor in treatment seeking for PTSD as components of the relationship have been shown to have positive and negative correlational relationships on symptom severity and overall mental health.

Spousal Relationship Role in Veteran Treatment Seeking for PTSD

Spousal relationships often provide social support (Kawachi & Berkman, 2001). Some researchers have suggested that spousal support represents a distinct form of social support with unique characteristics as other sources were not found to be significantly associated with certain outcome measures (Syrotuik & D'Arcy, 1984). As available evidence has shown spousal support

to influence help-seeking behaviors, there is a strong case to further investigate spousal support as a factor in mental health help-seeking. Furthermore, because PTSD and relationship quality have been found to reciprocally impact one another, it is essential to investigate the role of spousal support for the PTSD diagnosis.

A study by Meis et al. (2010) found high quality intimate relationships to have positive effects on mental health treatment seeking for PTSD in military populations. Within this study, relationship adjustment and service utilization for OIF/OEF veterans with PTSD yielded a significant interaction between PTSD symptom severity, relationship adjustment, and service utilization. First, participants with higher PTSD symptomology were more likely to utilize mental health treatment; second, higher levels of relationship adjustment were found to increase the likelihood of service utilization for those with higher levels of PTSD symptomology (Meis et al., 2010).

More research is needed to understand which characteristics of spousal relationships may lead to increased treatment utilization for veterans with PTSD. In order to address this particular knowledge gap, the present pilot study gathered information concerning perceptions of spousal support and the help-seeking attitudes and behaviors of veterans with PTSD. Additionally, data measuring PTSD symptom severity was collected as higher symptom severity was expected to be associated with greater help-seeking, in accordance with previous research findings (Hoerster et al., 2012).

Significance of the Study

This small pilot study adds to existing literature regarding relationships between salient areas of social support, PTSD, and help-seeking and provides preliminary findings to be pursued in further studies. Such research has become all the more essential as studies examining

differently defined elements of support or negative social inputs have distinct and important roles in symptom development, maintenance, resolution, and treatment seeking. The study aimed to contribute to the ongoing and recently burgeoning efforts to explore nuanced social influence on help-seeking attitudes and treatment seeking, in hopes of identifying factors that may lead to higher treatment utilization for veterans with posttraumatic symptoms.

Understanding veterans' decisions to seek mental health treatment or the factors that more robustly impact these decisions can create multiple opportunities to improve veterans' engagement with treatments that improve symptoms. Understanding this potential relationship may help to inform intervention or outreach strategies to encourage and support veterans in seeking psychological services. While recent efforts have focused on reducing stigma regarding mental health conditions, there is evidence to suggest that this barrier, though frequently reported, may be less responsible for low rates of treatment than was previously thought (Vogt et al., 2014). Rising rates of mental health distress among veterans of recent ongoing military conflicts mandate further understanding of potential barriers and facilitating factors for receiving appropriate mental health treatment for psychological disorders within this population.

Research Questions

The present study sought to investigate the possible relationships among perceived spousal support, help-seeking attitudes, and treatment utilization of veterans with symptoms of PTSD. Proposed analysis was structured to determine the effects of perceived spousal support on help-seeking attitudes and treatment initiation behaviors, independent of or in relation to varied levels of self-reported PTSD symptom severity, with specified hypotheses based on existing literature, followed with exploratory questions for additional areas. Research questions were as follows:

1. Are more positive help-seeking attitudes positively correlated with greater perceived spousal support for married veterans?
2. Is PTSD symptom severity negatively correlated with level of perceived spousal support for married veterans?
3. Are help-seeking attitudes more positive when higher levels of perceived spousal support are present, independent of or in relationship to PTSD symptom severity, for married veterans?
4. Is there a relationship between help-seeking attitudes and treatment-utilization?
5. Will there be differences by gender of participant, gender of spouse, participant age, and income with regard to symptom severity, spousal support, help-seeking attitudes, and utilization of mental health service?

Definition of Terms

1. Veteran: Veteran status is defined as any person who served honorably on active duty in the armed forces of the United States. Discharges marked "general and under honorable conditions" also qualify. Classification of veteran status through this study was determined by participant self-report as a veteran of any branch of the U.S. armed forces.
2. Spouse: Within the present study, the term spouse was used to refer to the legally married partner of a member of the previously defined veteran sample. Although alternate forms of intimate relationships can act as profound sources of social support, the definition of legal marriage is maintained due to the disparities in privileges provided to legally married couples within military culture and U.S. culture, and to acknowledge the greater proportion of veterans within legally recognized marriages

compared with civilian populations (National Center for Veterans Analysis and Statistics, 2019).

3. Spousal support: Spousal support referred to a participant's perception of support received from their spouse. Participants within the study were asked to report on their own appraisal of the support provided by their partner rather than an objective observer rating of supportive-labeled behaviors.
4. Help-seeking attitudes: Within this study, help-seeking attitudes referred to self-reported attitudes about the use of mental health services.
5. Treatment-seeking behaviors/treatment initiation/treatment utilization: Treatment seeking behavior/initiation/utilization was classified as attending one or more appointments for mental health within the past 12 months. This operational definition has been used within previous literature investigating mental health service utilization in military populations (Jennings, 2014).

Method

This pilot study examined the variables of PTSD symptomology, perceived spousal support, help-seeking attitudes, and treatment utilization of married veterans. Objective self-report measures were used to collect data from a small sample of married veterans recruited through snowball and convenient sampling.

A-Priori Sample Size

The study proposed a minimum of 76 participants to complete the required statistical analyses based upon the study's research hypotheses. This sample size would have allowed for desired statistical power of .80 at the significance level of p =.05. Correlations performed in the study demanded a minimum sample of 33 participants assuming power of .80 at the .05

significance level. The study included 39 participants. While this allowed for examination of primary research questions, additional demographic variables were not possible to investigate separately due to the size limitation of the sample. Thus, the study restricted Type I error, that is, claiming significance when none exists owing to over-analysis of data.

Participants

Participants were current legally married veterans. Sixty-nine individuals initially responded affirmatively to the informed consent form. A large number of participants were excluded after indicating consent because they did not meet full inclusion criteria for the study (*n* =20), identified as non-veterans (*n*= 4) and/or non-married (*n* =16). A smaller number of participants were later excluded due to large number of missing responses (*n* =10). After eliminating respondents redirected from the survey due to not meeting the inclusion criteria (*n* =20) and those with a large amount of missing data *(n* =10), a final sample size of *N*=39 was retained. Of these participants 12.8% identified as female and 84.6% identified as male, one participant opted not to identify gender.

Participants' ages ranged from 25 years to 71 years with a mean age of 46.7, showing a wide distribution in age (*SD*=14.2). Regarding identified race and ethnicity, 97.4% of the sample identified as White/White American and 2.6% identified as Latino/Hispanic/Latinx. Only 1 participant identified their spouse to be of the same gender identity (both identified as male). All participants identified their spouse's gender as either male or female despite the ability to identify other gender identities for either self or spouse within the survey.

Branch of service represented within the sample was as follows: 69.2% Army (*n* =27), 12.8% Marines (*n* =5), 10.2% Navy (*n* =4), and 7.6% Air Force (*n* =3). No participants identified service with the Coast Guard. Era of service included veterans involved in Operation Enduring

Freedom/Operation Iraqi Freedom (64.1%, *n* =25), Gulf War (23.1%, *n =9*), Vietnam (15.4%, *n= 6*), other identified conflicts or service (12.8%, *n* =5), and Operation New Dawn (7.6%, *n =3*). About 23% identified service in more than one conflict or era (*n* =9). Ranks represented included enlisted (74.3%, *n* =29), officer (17.9%, *n* =7), a portion who chose not to specify their rank (5.1%), and warrant officer (2.5%, *n =1*).

Regarding socioeconomic status, 38.4% (*n* =15) identified as middle class, 30.7% (*n* =12) as working middle class, 20.5% (*n* =8) as upper middle class, 7.7% (*n* =3) as working poor, and 2.5% (*n* =1) as wealthy. Among the participants, 38.4% (*n* =15) reported some college/associates degree as highest level of education attained, 23.1% (*n* =9) with a bachelor's degree, 20.5% (*n* =8) with a graduate or professional degree and 16.6% (*n* =7) with a high school degree or equivalent. Participants were from 16 states, with most respondents residing in Massachusetts (33.3%), Texas (12.8%), and Michigan (7.6%).

The study was able to include veterans in same-sex marriages as the United States Supreme Court ruled to federally recognize same-sex marriage in 2015, which extended spousal benefits for veterans in same-sex marriages regardless of state of residence (U.S. Department of Veterans Affairs, 2017). However only one participant reported current same-sex spouse within the study. Although restricting participants to those within legally recognized marriages fails to include all of the diverse intimate relationships present within the veteran population there is evidence that the interpersonal resources provided by a spouse may differ from support from other sources (Holt-Lunstad et al., 2008). Although there does not seem to be an obvious explanation for this finding, there are certain legal (inheritance, social security) and social privileges afforded to persons in legally recognized marriages in the United States that may contribute to this outcome. Despite the need for research into support resources within other

types of intimate relationships, the evidence suggesting that marriage may be a unique source of social support coupled with higher estimated rates of marriage among veterans compared with non-veterans (64.7% compared to 48.8% of men, and 50.9% compared to 47.6% of women), warrants the investigation of a legally married veteran sample (National Center for Veterans Analysis and Statistics, 2019).

Measures

Inclusion criteria and demographic questionnaire. Participants were directed to the online research survey and asked to answer two questions of inclusion criteria (i.e., veteran status, marital status) for the study following informed consent. Participants that met criteria for the study were asked to answer demographic items which included gender, race, ethnicity, branch of military service, socioeconomic status, etc. For the full list of demographic items, see Appendix C.

Posttraumatic Stress Disorder Checklist-5 (PCL-5). The Posttraumatic Stress Disorder Checklist-5 (PCL-5) is a self-report screening measure for PTSD developed by Weathers et al. (2013). This measure can be used as a screen for the presence of PTSD symptomology as defined by the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5). A clinical cutoff for a diagnosis of probable PTSD on this measure, when interpreted by a mental health clinician, falls at a total score of 33 based on existing psychometric research and recommendation of the National Center for Posttraumatic Stress Disorder (Bovin et al., 2016). Items on this measure relate to Clusters B, C, D, and E symptoms of posttraumatic stress disorder with positive history of exposure to a Criterion A traumatic event (Weathers et al., 2013). The PCL-5 is available to the public through the National Center of Posttraumatic Stress Disorder, for appropriate use by mental health providers and researchers. It is comprised of 20

questions, all of which ask the respondent to indicate to what extent the respondent has been bothered by each item over the past month (monthly version): 0-Not at all, 1-A little bit, 2-Moderately, 3-Quite a bit, 4-Extremely. Examples of statements on this measure include "Trouble remembering important parts of the stressful experience," and "Feeling jumpy or easily startled." Each stated item is paired with a numerical value. Scores are calculated by tallying the values of all responses (possible scores range from 0-80), or by calculating scores for the domains of each symptom cluster. A total score was used as the measure for probable PTSD within this study.

The PCL-5 has been found to have good test-retest reliability (Pearson correlation r=.84) and internal consistency (α= .96). Convergent validity for the PCL-5 has been measured against other widely used diagnostic and screening tools for PTSD within veteran and military populations, including previous iterations of the PCL. Convergent and discriminant validity were found to be excellent on this measure when compared with like measures and in nuanced contrast with widely used self-report measures of global or related psychological symptoms such as the PHQ (Bovin et al., 2016). See Appendix D for the PCL-5 measure.

Multidimensional Scale of Perceived Social Support (MSPSS). Perceived spousal support was evaluated using the Significant Other subscale of the Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS was developed by Zimet, Dahlem, Zimet, and Farley (1988) to measure perceived social support from family, friends, and significant others. The MSPSS is comprised of 12 statements related to aspects of perceived social support. The participant is asked to rate his or her agreement with each statement on a Likert scale from "1-Very Strongly Disagree" to "7-Very Strongly Agree." This measure includes four items assessing perceived support from a Significant Other which have been separately evaluated as a

psychometrically sound subscale (Zimet et al.,1988; Zimet, Powell, Farley, Werkmen, & Berkoff, 1990). Internal consistency reliability for the Significant Other sub-scale of the MSPSS was found to be adequate across various populations, including university residents and pregnant women (α=.83-.98; Zimet et al., 1990). The MSPSS has also been used to investigate distinctions between sources of social support among U.S. combat-veterans (Wilcox, 2010). Factor analysis of the MSPSS confirmed that each subscale represented a unique form of social support (Zimet et al., 1990). Items within the Significant Other subscale of the MSPSS include: "My spouse cares about my feelings," and "My spouse is around when I am in need." The complete Significant Other sub-scale of this measure is presented in Appendix E.

Attitude toward treatment seeking and treatment utilization. Attitude toward mental health treatment seeking was measured using the Attitudes toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF) developed by Fischer and Farina (1995) from the original 29-item measure created by Fischer and Turner (1970). The ATSPPH-SF is a 10-item measure developed using factor analysis to preserve the constructs represented in the original 29-item measure (Fischer & Farina, 1995). In addition to completing factor analysis to select items that preserved original constructs and reduced redundancy, convergent validity was calculated to be (r=.87, p=.001) with the original long form (Fischer & Farina, 1995). The ATSPPH-SF has been found to have acceptable test-retest reliability with a coefficient of .80, and adequate internal consistency (α= .84). The items of the ATSPPH-SF include: "The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts," and "I would want to get psychological help if I were worried or upset for a long period of time." Participants rate their degree of agreement with each statement by selecting one

of the following: 1-Disagree, 2-Partly Disagree, 3-Partly Agree, or 4- Agree. Scoring for this measure includes tallying of total scores with some items reverse-scored.

The ATSPPH-SF appeared with two additional items designed to measure recent and lifetime participation in mental health treatment. The participants were asked to provide a Yes/No response to the question: "Have you attended at least one mental health appointment in the past 12 months?" This operational definition was selected as it has been used in recent related literature (Jennings, 2014). Respondents were also asked to identify range of attended mental health appointments within their lifetime. To review this measure in full, see Appendix F.

Procedure

Permission to conduct the study was obtained from the Internal Review Board of Antioch University New England. A referral sampling method was utilized for the study, as prospective participants were able to forward recruitment information and survey access to other eligible potential participants. Participants were recruited through fliers distributed at community locations in Massachusetts and New Hampshire, through social media outreach, and a popular internet gaming platform (World of Warcraft). This strategy was adopted in hopes of recruiting a sample of U.S. veterans that included those not engaged in healthcare/mental health care as it was made available through community platforms rather than limited to clinics or hospital locations.

Participants were screened for inclusion based on the criteria of U.S. veteran status and marital status. Participants were directed to a web-based informed consent form (see Appendix B) by flier, social media, or live contact. In accordance with the criteria for human subjects' research, this form contained a description of the study, a statement regarding the voluntary nature of participation, potential risks and benefits of participation, and information regarding

confidentiality and anonymity. Active data collection occurred from December 2018 to May 2019.

Participants who voluntarily consented to participate by selecting "I agree" were directed to a web-based questionnaire containing demographic questions and participant inclusion criteria (i.e., U.S. veteran status and marital status). Participants that met inclusion criteria were directed to three brief questionnaires: (a) the Posttraumatic Stress Disorder Checklist-5 (PCL-5), (b) the Significant Other subscale of the Multidimensional Scale of Perceived Social Support (MSPSS), and (c) the Attitudes toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF), and the two additional mental health treatment initiation/utilization items. To view these measures, please see the relevant appendices.

Confidentiality. The raw data responses of participants were downloaded into an excel document only accessed by the investigator of the study. Although this data included demographic information, it did not include sufficient information to identify any individual participant. Individual data sets were not made available to any person other than the investigator of the study.

Anonymity. Participant anonymity was maintained within the study as personal identifiers were not collected: IP addresses, names of participants, email addresses, and other identifying information of a person were not solicited at any point within the study.

Completion of the survey package was estimated to take approximately 20 minutes. Following completion, participants were directed to a web-page thanking them for their participation. Participants were able to discontinue the questionnaires at any time. Any degree of participation in this study resulted in a donation to Disabled American Veterans (DAV), regardless of whether participants successfully completed all survey questions. Once an

acceptable number of participants was surveyed, the online questionnaire was discontinued. At that time, the data set was downloaded and analyzed using Microsoft Excel 2013 and SPSS v21.

Research Hypotheses

The hypotheses were as follows, based upon the previously stated research questions:

1. Perceived spousal support will be positively correlated with attitude toward help-seeking (at $p<.05$ level).
2. PTSD symptom severity will be negatively correlated with level of perceived spousal support (at $p<.05$ level).
3. Treatment utilization will be associated with more positive attitudes toward treatment initiation (at $p<.05$ level)
4. PTSD symptom severity combined with perceived spousal support will account for a significant moderate proportion of variance in scores of help-seeking attitudes, with perceived spousal support accounting for a significant increase in predictive power (at $p < .05$ levels).

Results

A survey package was employed to investigate potential relationships between PTSD symptom severity, perceived support from spouse, attitudes toward treatment seeking, and treatment utilization among a sample of married veterans. Treatment utilization markers of lifetime mental health service utilization (1 item) and past year participation in a mental health appointment (1 item) were collected as a proximal indication for seeking help from mental health professionals, thus adding to the existing literature on attitudes toward treatment seeking. Hypotheses included the following: (a) Perceived support from spouse will be associated with more positive attitudes toward mental health treatment seeking, (b) PTSD symptom severity will

be inversely related to perceived support from spouse, and (c) There will be a relationship between perceived support and treatment attitudes relative to or irrespective of PTSD symptom severity.

PTSD Symptom Severity

Symptom severity of probable posttraumatic stress disorder was dichotomized based on suggested clinical cutoff for a positive screen for Posttraumatic Stress Disorder on the PCL-5. This distinction created two sub-categories to be explored within the overall sample in respect to other variables: (a) those with probable PTSD, and (b) those with sub-threshold posttraumatic symptoms. As this sample was recruited based on veteran status and marital status alone, a smaller proportion of the sample was expected to report symptom severity scores meeting probable threshold for PTSD.

Approximately 17.9% (*n* = 7) of the sample reported symptom severity for probable PTSD, with the remainder of the sample scoring below what is considered a useful clinical cutoff for probable PTSD diagnosis on this measure. Although findings of incidence rates of PTSD among veterans have varied by study and service era, the current proportion of this sample reporting probable PTSD fell within expected range of prevalence for current PTSD diagnosis among veterans. See Figure 1.

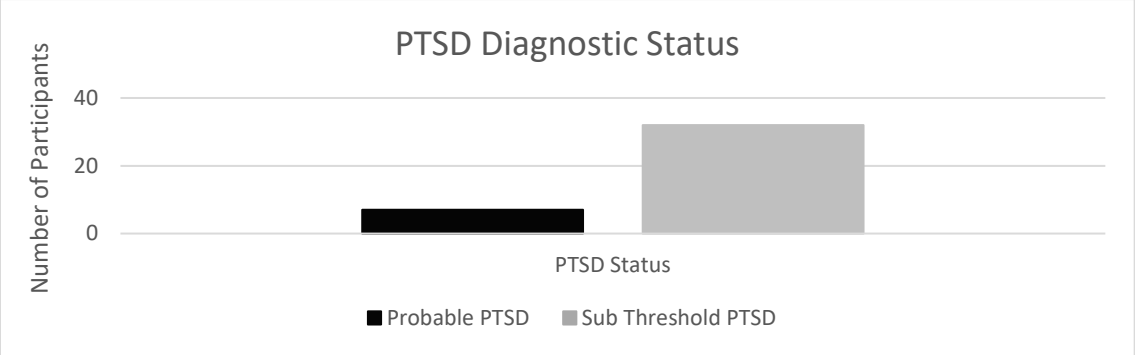

Figure 1. Frequency of PTSD and Sub Threshold PTSD.
Note. N=39. PTSD Status determined by proposed clinical cutoff of PCL-5 score ≥ 33

Internal Consistency Reliability of Measures

The Posttraumatic Checklist for DSM-5 (PCL-5) had an excellent internal consistency reliability of α=.96. The internal consistency reliability of the Attitudes toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF) was also excellent at α=.96. Internal consistency reliability for the Significant other Subscale of the Multidimensional Scale of Perceived Social Support with only four items was found to be very strong at α=.88, consistent with the internal consistency reliabilities found in use with other populations (Zimet et al., 1990).

Descriptive Statistics

Table 2 shows the means and standard deviations on the measures of PTSD symptom severity (*M*=21.79, *SD*=18.42), Perceived Support from Spouse (*M*=21.0, *SD*=6.26), and Attitudes toward Treatment Seeking (*M*=26.44, *SD*=6.82). Proportion of the sample reporting lifetime use of mental health services and those who attended a mental health appointment in the past 12 months are also reported. For the PCL-5, the standard deviation is rather large in comparison to the mean. This finding is likely representative of the inclusion of married veterans with diverse symptomology, including those reporting no symptoms of probable PTSD and those reporting severe symptoms. The majority of veterans in the study reported some use of mental health services within their lifetime, 64.10% (*n* =25). Engagement in mental health treatment within the past year was reported by 28.12% (*n* =11).

Testing of Research Hypotheses

Hypotheses 1 and 2. Bivariate Pearson correlations were computed for PTSD symptom severity (PCL-5) and perceived support from spouse (MSPSS), and perceived support from spouse (MSPSS) and Attitudes toward Treatment Seeking (ATSPPH-SF). Although there was no hypothesis presented for the relationship between PTSD symptom severity and treatment

attitude, a correlation was calculated for potential relationship between these two measures because related previous research findings have been mixed.

Hypothesis 1 stated: Perceived support from spouse (MSPSS) will be positively correlated with attitudes toward treatment-seeking (ATSPPH-SF) at a .05 significance level. This hypothesis was supported (r=.345, p=.031), showing a moderate correlation.

Hypothesis 2 stated that PTSD symptom severity (PCL-5) will be negatively correlated with perceived spousal support (MSPSS) at a significance level of .05. This hypothesis was not retained (r= -.184, p= .263). Additionally, no significant correlation was found between PTSD symptom severity (PCL-5) and attitudes toward help-seeking (ATSPPH-SF) (r=-0.187, p=.254).

Hypothesis 3. Hypothesis 3 stated treatment utilization will be associated with more positive attitudes toward treatment seeking at p<.05 level. In an attempt to measure dose of received treatment, ranged categories for lifetime treatment participation were created by the author. These categories were developed in an effort to identify respondents with no prior treatment (0 sessions); some prior treatment that may have been mandated, crisis-oriented, or likely discontinued (1-3 sessions); participants that may have received a full brief-treatment (4-12 sessions); and those reporting likely engagement in longer term treatment, or multiple courses of therapy (12 or more sessions). A small number of participants reported moderate treatment participation of 4-12 sessions (n=3) in comparison with low treatment, 1-3 sessions (n=8); high treatment, 12 or more sessions (n=14); or no prior treatment, 0 sessions (n=14). Due to the small number of participants reporting moderate treatment and overall small sample size resulting in few participants within each category, lifetime treatment dosage categories were collapsed into those who had utilized mental health treatment in the past (n = 25) and those who had not (n =14).Comparison of means for those with and without lifetime treatment revealed no

significant difference in treatment attitude (ATSPPH-SF) between the two groups $t(37)=0.883$, $p=.383$. An additional comparison was calculated for more proximal engagement in treatment (engagement in past 12 months) at the time of the study. This comparison revealed significant difference in attitudes toward treatment seeking (ATSPPH-SF) for those who had engaged in treatment in the past 12 months compared with those who had not engaged, with those engaged reporting significantly more positive attitudes toward help-seeking, $t(37)=2.52$, $p=0.016$. This finding partially supports Hypothesis 3.

Hypothesis 4. Linear regression was not conducted with the obtained data because hypothesis 2 was not supported. Hypothesis 4 that was not tested stated that PTSD symptom severity combined with perceived spousal support will account for a significant moderate proportion of variance in scores of help-seeking attitudes, with perceived spousal support accounting for a significant increase in predictive power.

Exploratory research questions. A major focus of the study was to understand a potential relationship between perceived support from spouse, PTSD symptom severity, and the impact of these variables on attitudes toward seeking psychological help among married veterans. After calculation of Pearson's *r* between the associated measures was completed, data was graphically displayed to visually assess for possible non-linear associations. The sample was then dichotomously stratified according to probable PTSD diagnosis and sub-threshold PTSD symptoms. A clinical cutoff of 33 on the PCL-5 was used for identifying participants with probable PTSD in accordance with current clinical guidelines for this measure (Bovin et al., 2016). See Figure 2 for perceived support from spouse (MSPSS) and attitudes toward seeking psychological treatment (ATSPPH-SF). See Figure 3 for this relationship among participants with sub-threshold posttraumatic symptoms.

A moderate significant correlation was found between support from spouse and attitudes toward treatment for veterans in the sample without PTSD (r=.446, p=0.012). Although the subset of the sample with probable PTSD could not be analyzed as a sub-group with acceptable power due to limited number of participants (n =7) within this category, significant findings from participants without PTSD suggest potential moderation effect of PTSD diagnosis on the relationship between perceived support from spouse and treatment attitudes among married veterans. See Figure 4 for illustration of this statistical moderation.

Further statistical analysis related to demographic variables collected within the study was not possible due to the small sample size. For further information regarding demographic considerations and limitations of the obtained sample, please refer to the Discussion section.

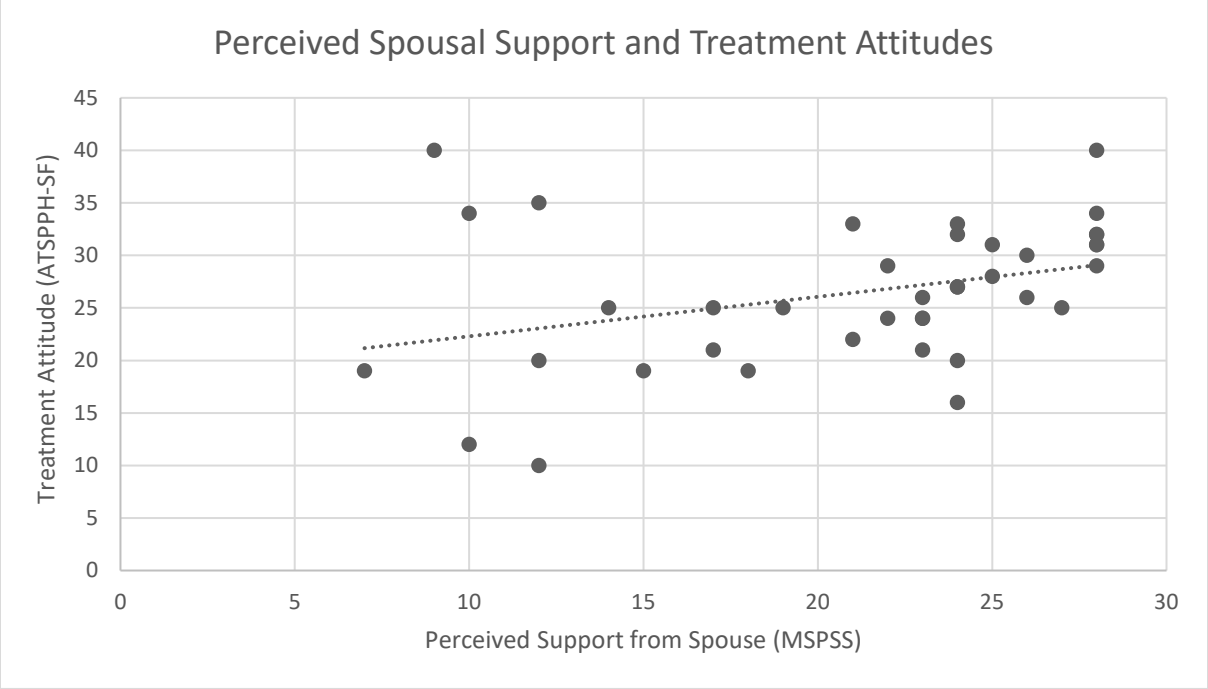

Figure 2. Perceived Support from Spouse and Treatment Attitudes for Entire Sample.
Note. N=39. (r=.345, *p*=.031.)

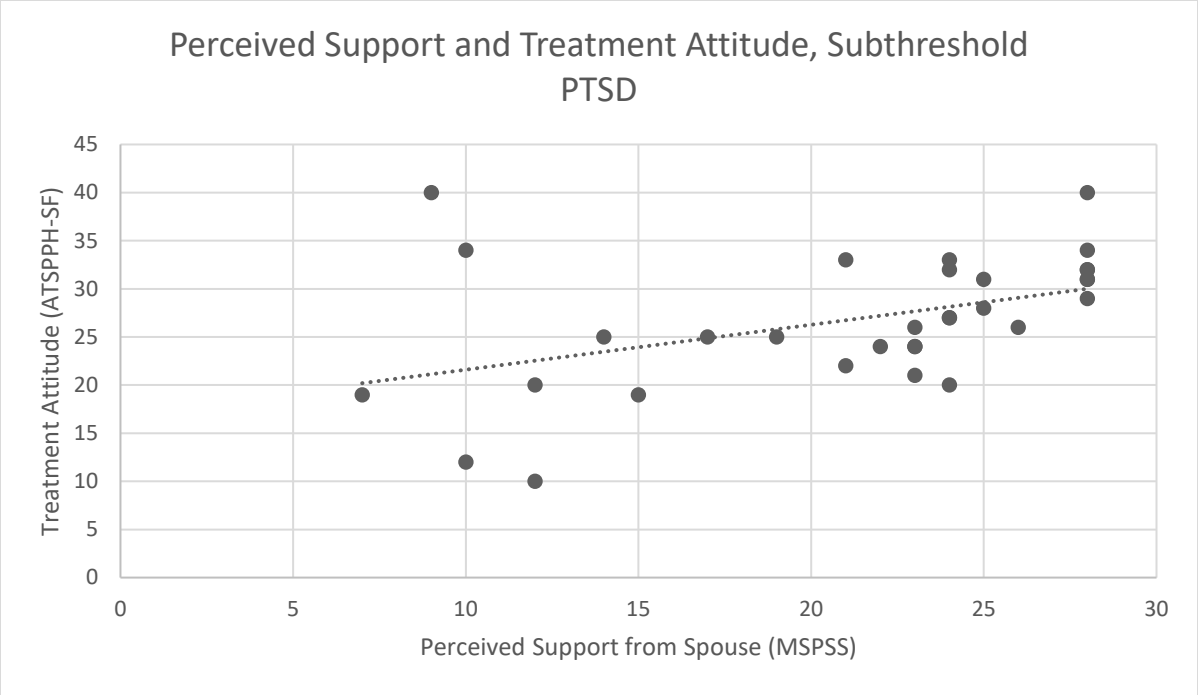

Figure 3. Perceived Support from Spouse and Treatment Attitudes in Participants without Probable PTSD.
Note. (*n* =32). (*r*=.440, *p*=0.012).

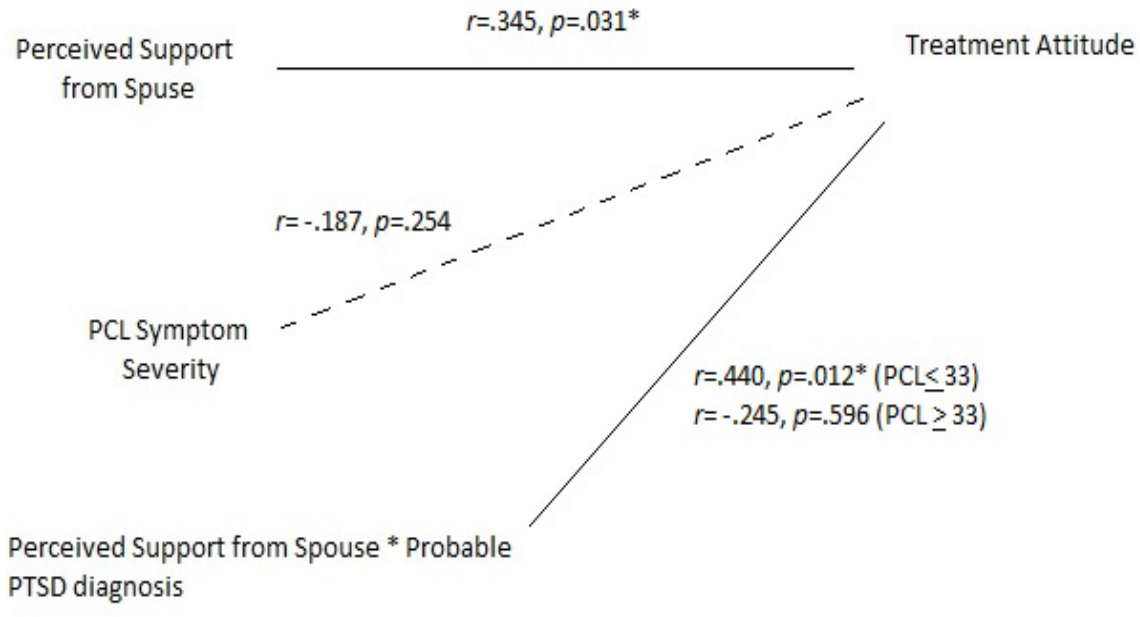

Figure 4. Proposed model of Moderation by PTSD Diagnosis.

Conclusion

This pilot survey investigated relationships between PTSD symptom severity, attitudes toward treatment, perceived support from spouse, and treatment utilization in a small sample of married U.S. veterans. Pearson's *r* calculations showed a modest correlation between perceived support from spouse and attitude toward treatment seeking for the sample (r =.345, p<.05). Correlation analyses between PTSD symptom severity and perceived support from spouse and between PTSD symptom severity and treatment attitudes were not significant. A test of difference showed significant difference in attitudes of treatment seeking between those who had engaged in mental health treatment within the past 12 months compared with those who had not, with those engaged reporting significantly more positive attitudes $t(37)=2.51$, $p=0.016$. Attitudes did not differ significantly between those who reported lifetime use of mental health services compared to those reporting no lifetime use.

The sample was dichotomously stratified according to probable PTSD diagnosis and sub-threshold PTSD symptoms to further examine relationship between perceived support from spouse and attitudes toward treatment seeking. A moderate significant correlation was found between support from spouse and attitudes toward treatment for veterans in the sample without PTSD (r=.446, p=0.012). Although the subset of the sample with probable PTSD could not be analyzed as a sub-group with acceptable power due to limited number of participants (n =7) within this category, findings suggest that this relationship may not hold true for those with probable PTSD or may operate in the inverse.

The pilot study suggests a moderation effect of PTSD diagnosis on the relationship between support from spouse and attitudes toward treatment seeking such that for those without PTSD, greater perceived support from spouse is significantly associated with more positive

attitudes toward help seeking. For those with probable PTSD, greater perceived support may not be associated with more positive attitudes toward treatment seeking or may be negatively related.

Discussion

The study investigated relationships among probable PTSD symptoms, perceptions of support from spouse, attitudes toward treatment seeking, and indicators of mental health treatment utilization among a small sample of married veterans. Relationships between treatment attitudes and lifetime and proximal use of mental health treatment were examined as treatment seeking attitudes have been identified in the literature as a useful operational construct when attempting to assess likelihood of engagement in treatment (Britt et al., 2011). The following discussion on the findings of the study is related to the associated literature and provides tentative implications of the current pilot study. Limitations of the study are discussed, including its lack of generalizability to the larger veteran population and possible future research directions to expand on this research are considered.

Descriptive Statistics

Gender and relationship configuration. All participants within this study identified themselves and their spouses as male or female, with only one participant not identifying gender in any way. Female veterans comprised 12.8% of the sample. No participants identified themselves as non-binary or transgender. This may represent a difference of the study's sample in comparison with the general veteran population because it is approximated that 1.4 million adults identify as transgender in the United States, and individuals identifying as transgender are about twice as likely to be military veterans compared to the general U.S. population (Flores, Herman, Gates, Brown, & Williams Institute, 2016; Grant et al., 2011). It is unclear, however, if this absence of transgender representation in the current sample may in part be due to fewer

transgender individuals within the study's surveyed population of currently married veterans, as estimates for rates of marriage among transgender individuals are significantly lower than those within the veteran population or the U.S. population in general (Grant et al., 2011).

Race and ethnicity. The majority of participants in the study identified as White/White American (97.4%, *n* =38), with one participant identifying as Latino/Hispanic/Latinx. Approximately 22% of the veteran population identifies as a racial or ethnic minority according to 2014 data, with 11.2% of veterans identifying as Black/African American, 6.6% identifying as Hispanic/Latinx, 1.6% Asian/Asian American, 1.4% of two or more races, 0.6% American Indian/American Native, and 0.1% identifying any other race or races (National Center for Veterans Analysis and Statistics, 2016a). Results of this study are interpreted cautiously given the lack of data from other racial and ethnic identities as psychological symptoms, perceptions of spousal support, and treatment seeking can all be influenced by factors of identity, cultural values and norms, and minority status relative to dominant systems (APA, 2017; Shim, Compton, Rust, Druss, & Kaslow, 2009).

Branch of service and identified rank. Respondents reported service within the Army (69.2%), Marines (12.8%), Navy (10.2%), and Air Force (7.6%). No participant identified service with the Coast Guard. In comparison with estimated rates for current veterans of each branch of service, this sample includes more respondents from the Army and Marines than would be expected compared with population rates (National Center for Veterans Analysis and Statistics, 2016b). Officers were disproportionately represented within the sample relative to the general veteran population with 17.9% of the sample identifying officer rank while officers comprise an estimated 6.4% of the U.S. military (National Center for Veterans Analysis and Statistics, 2016c). This overrepresentation is important to consider as it pertains to the findings of

the study as both non-officer rank and lower attained education have been identified as risk factors for the development of PTSD in meta-analysis of military veterans of the U.S. and other countries (Xue et al., 2015).

Correlations

A significant correlation was not found between probable PTSD symptom severity and attitudes toward treatment seeking. This finding was unexpected as literature investigating symptom severity and attitude toward treatment seeking has generally found association between these constructs (Vogt et al., 2019).

A significant correlation was not found between perceived support from spouse and PTSD symptom severity, inconsistent with previous findings identifying significant associations between symptoms of posttraumatic stress disorder and constructs similar or presumably related to perceived spousal support (Blow et al., 2015; Laffaye et al., 2008; Riggs et al., 1998).

A correlation between attitudes toward treatment seeking and spousal support was found to be significant (r=.345, p=.031), but to a moderate extent. This finding suggests that while support from a spouse may be associated with increasingly positive treatment attitudes and utilization among married veterans, the strength of this association may necessitate the inclusion of other variables to better understand this modest relationship.

Tests of Difference

While comparison of means for those with and without lifetime treatment revealed no significant difference in treatment attitudes between the two groups, proximal engagement in treatment at the time of the study (engagement in past 12 months) showed significant difference in attitudes toward treatment seeking for those who had engaged in mental health treatment compared with those who had not engaged. This finding is consistent with previous literature

examining attitudes toward treatment seeking as an operationalized variable useful for understanding likelihood to engage in treatment at the time of assessment (Britt et al., 2011).

PTSD as Moderator

After graphical review of data, a stratified analysis was completed to further examine relationship between support from spouse and attitudes toward treatment seeking among the study's sample of married veterans. A moderate significant correlation (r = .440, p <.05) was found between support from spouse and attitudes toward treatment for veterans in the sample without PTSD (n = 32). While the number of participants within the sample meeting clinical threshold for probable PTSD was proportionate with estimated rates among U.S. veterans (17.9%), this sub-group (n = 7) could not be examined as a subsample due to insufficient power. This finding of the study suggests that PTSD diagnosis may act as a moderator in the relationship between perceived support from spouse and treatment seeking attitudes, such that married veterans not meeting criteria for PTSD may hold more positive attitudes toward mental health treatment in the presence of greater support from spouse.

On the other hand, the relationship between perceived support and attitudes toward treatment for married veterans with PTSD may operate in the reverse or serve to eliminate the relationship between these variables. One theoretical explanation for this finding may be that support from spouses in the presence of PTSD may be in conflict with aspects of mental health treatment for this diagnosis. Spouses may facilitate avoidance behaviors that maintain PTSD in a well-meaning attempt to lower experienced level of acute distress in their partner and manage daily life (Monson, Taft, & Fredman, 2009). This spousal action may well be perceived as supportive and even helpful despite inadvertently acting to maintain posttraumatic symptoms; and may lead to more negative attitudes toward mental health treatment as these actions are

contrary to seeking greater focus on potentially distressing memories, reminders, and emotions associated with experienced traumas.

Spouses may accommodate symptoms in efforts to reduce conflict within the relationship due to depletion of their own psychological resources as partners of individuals with severe PTSD symptoms; they may report negative impact of symptoms on their own physical or psychological well-being (Monson et al., 2009). Spouses may, in efforts to reduce distress and conflict in the family unit, support emotional avoidance and reduced communication so as to eliminate identifiable stressors for their partner (Monson et al., 2009). Veterans experiencing severe symptoms of PTSD, while still experiencing their spousal relationship as highly supportive, will likely perceive conflict between a management strategy that has seemed effective within the short term and tasks of psychotherapy. Psychotherapy may acutely heighten distress or awareness of one's distress through the process of reducing trauma associated avoidance to achieve more durable and sustained improvement in symptoms.

Implications of the Study

Moderation effect of PTSD status on the relationship between perceived support from spouse and attitudes toward treatment seeking suggests that perceived support from spouses for those with PTSD may not support more positive attitudes toward treatment. It may be useful to assume that supportive behaviors may be in conflict with the act of seeking mental health treatment. As this may function as a deterrent to those with clinically significant PTSD symptoms from engaging with mental health services, it may be beneficial to address this problem of low utilization through targeted psychoeducation efforts for veterans and spouses. It is possible that education about family behaviors that may help to reduce symptoms or maintain them could be useful to both veterans with PTSD and their spouses.

A study investigating perceptions of PTSD symptoms in a sample of U.S. Army soldiers and their spouses showed a negative relationship between perceived PTSD symptom severity and marital satisfaction, with a weaker relationship between these two variables in the presence of greater externalization of symptoms by spouse (Renshaw, Allen, Carter, Markman, & Stanley, 2014). This finding suggests that spouse appraisal of the mechanisms underlying PTSD symptoms may impact the relationship quality of the dyad independent of symptomology.

Psychoeducation provided outside of traditional mental health or medical locations may be additionally helpful for improvement of relationship quality between military service members with PTSD and their spouses if it can help facilitate attribution of symptoms to a problem outside of the marital relationship. Additionally, more concerted efforts to align family goals and objectives with those of evidence-based therapies and trauma-informed care for PTSD may be of great benefit. Treatments for PTSD may already be moving toward addressing this identified area of attention as couples therapies for PTSD, such as Conjoint Therapy for Posttraumatic Stress Disorder (CBCT) have garnered greater empirical support and wider implementation (Monson, Fredman, & Adair, 2008; Monson et al., 2011).

Cognitive-Behavioral Conjoint Therapy for PTSD. CBCT is a flexible phase-oriented treatment protocol for the treatment of PTSD and associated relationship problems that may exacerbate or maintain symptoms (Monson et al., 2008). The initial phase of this couple's based intervention involves psychoeducation related to PTSD which includes rationale for decreasing avoidance behaviors to support recovery and explores the ways in which this might occur through behaviors and strategies developed within the relationship dyad (Monson et al., 2008).

The middle phase of CBCT treatment involves cultivation of communication skills to facilitate emotional expression as a means to reduce avoidance. Collaboration with the couple is

used to develop behavioral strategies and plans to address avoidance of external cues (Monson et al., 2008). The final phase of intervention within the CBCT model involves meaning-making and cognitive restructuring of maladaptive beliefs associated with traumatic experiences (Monson et al., 2008). Emerging evidence related to implementation of this therapeutic approach to reduce PTSD symptoms has shown efficacy in both veteran and non-veteran populations (Monson et al., 2008, Monson et al., 2011). The treatment was designed to be flexible in hopes of best meeting the potential needs of diverse couples including those in which both partners identify as the same gender and couples in which both members of the dyad have history of trauma (Monson et al., 2008). CBCT may offer a crucial opportunity to treat posttraumatic symptoms through methods combining elements of established empirically supported treatments for PTSD while also fostering support from spouse that may be both perceived as supportive and also reduce trauma-related avoidance.

Limitations of the Study

The pilot study's small number of participants (*N*=39) and very limited diversity greatly hampered the external validity of the findings. Due to the self-selection basis of the participant pool, it was possible that interested participants were different from uninterested persons within the population of interest. Additionally, although sampling within the study aspired to include veterans from varied geographic locations within the United States through an online format, the sample was largely comprised of married veterans reporting residence in Massachusetts (33.3%). The majority of participants identified as White/White Americans, with only one participant identifying as Latino/Hispanic/Latinx. This was a major limitation of the study as understanding both support from spouse and attitudes toward mental health seeking among veterans of racial minority may show differences given that attitude toward mental health treatment has been found

to differ by racial identities (Shim et al., 2009). The APA 2017 Multicultural Guidelines refer to the historical cultural mistrust of African Americans for institutional medical and mental health services, the experience of structural/systemic stigma by marginalized populations, such as LGBTQ+, Latinx, American Indian, immigrant/refugee, non-Christian, and poor people, who are seen as aberrant, and the low multicultural competence of providers (APA, 2017; Claus-Ehlers, Chiriboga, Hunter, Roysircar, & Tummala-Nara, 2019).

The sample was also limited in regard to gender diversity and diversity of relationship configuration, with only one participant identifying themselves and their partner's gender identity as the same and one participant choosing not to specify a gender identity. These demographics appear less frequently within the general population, creating difficulty for diverse samples to achieve adequate participants from diverse groups. Therefore, alternative sampling methods may be useful in future studies examining the relationships of a study's variables for specific culturally diverse sub-groups of the veteran population.

Limitations related to the attained sample are likely attributable in part to logistical difficulties encountered with proposed recruitment strategies. The time frame of data recruitment was limited to approximately five months to facilitate timely analysis of data. Although multiple locations for prospective participant recruitment were outlined in the conceptualization of the study, actual data collection occurred through late December to May, a time frame which substantially limited opportunities for in-person recruitment at certain seasonal events within the region (e.g., car shows, community-based veteran events generally held outdoors). Use of internet gaming platforms for prospective participant recruitment was limited by the researcher's availability to be present in-game, which restricted possible contact based upon time/dates of online play, and by server realm.

Utilizing the screening criteria of being presently married was a limitation in that other important relationships were not represented in the data. While this inclusion criteria was chosen due to existing research enumerating the ways in which legally recognized marriages are afforded greater privileges, rights, and social recognition within the United States compared to other relationship configurations, a need to further understand support present within other relationships or partnerships as it pertains to PTSD symptom severity and attitudes toward mental health treatment still remains.

Participants in the study were not asked to identify VA enrollment status or whether they were seeking or receiving service connection for PTSD. As service connection and compensation have the propensity to dramatically impact the lives of veterans, it is important to consider how a person's relationship to service connection may influence response style or propensity to respond to surveys, including measures of psychological distress. Although an important component of informed consent is to inform participants about how their data will and will not be used, it is possible that these assurances may not be sufficient to alleviate potential for response bias or misgivings regarding participation. Recent studies examining response style on psychological measures among veterans seeking compensation for PTSD have shown differences in response style when compared to veterans not seeking compensation at the time of assessment (Strom et al., 2012).

It is possible that the topic of social support and spousal support for veterans with PTSD was not relevant to racial and ethnic minority prospective participants. Racial and ethnic minorities are communalistic by culture and often deal with mental health problems with the help of their kith, kin, community, and natural healers (Alegria et al., 2002; Dow, 2011). They often do not seek formal PTSD assessment or diagnosis and treatment, which many marginalized

people cannot either access, trust, or consider culturally competent. In other words, the constructs of the study may have been mainstream White/White American. The literature on how trauma is conceptualized by marginalized veterans populations, and its assessment, and treatment may guide the development of a different study that is meaningful to racial and ethnic minorities (cf. Gone et al., 2019).

Future Directions in Research

As substantial nuance has emerged within recent literature pertaining to the effect of social support (both negative and positive) on PTSD symptoms and areas of help-seeking, future research may focus on different but possibly related constructs of spousal relationships such as relationship satisfaction, relationship friction, sexual satisfaction, power equality, or parenting and how these relational elements may interact with a person's attitudes toward seeking treatment from a mental health professional. The study focused on an outcome variable of attitudes toward mental health treatment and utilization of mental health treatment but did not examine engagement or attitudes toward other types of help seeking such as religious counsel/spiritual support, self-help, or peer-support groups. While the present study specifically chose to examine mental health care with the goal to further understand potential mechanisms of non-engagement, future research investigating other sources of help for psychological distress may inform mental health treatments and, in turn, allow for more acceptable mental healthcare for the veteran population.

Proposed methods for sampling underserved populations. Future research may benefit from replication of the study with a larger and more representative sample or through the use of modified sampling and recruitment strategies to compare findings for sub-groups of interest within the population (e.g., female veterans, veterans from racial and ethnic minority

populations, non-binary or transgender veterans). Population-based sampling and random sampling methods have been found to be largely ineffective for obtaining sufficient inclusion and participation of racial and ethnic minorities and other minority groups in many studies (Wagner & Lee, 2015; Yancey, Ortega, & Kumanyika, 2006). Additionally, these sampling procedures are typically extremely costly per participant and require substantial resources and time investment that may not be feasible for many types of research (Wagner & Lee, 2015). Although research should attempt to prioritize probability based sampling methods if a study's aim is to maximize generalizability, other methods may yield greater recruitment and inclusion of the population of interest and can be tailored to address specific difficulties in data capture with respect to a given group or population (Wagner & Lee, 2015).

Non-probability sampling for inclusion of minority groups. Non-probability sampling and non-traditional recruitment strategies have emerged that often forgo the assumption of randomness typically used in research as a means to support generalizability of findings for a population. When probability sampling is not a practical or acceptable method for achieving a sample, venue based sampling for participant recruitment can be utilized to increase efficiency of including participants from minority groups that may otherwise be under-sampled or underrepresented (Wagner & Lee, 2015).

Snowball sampling or referral based sampling methods are also often applied to research with rare populations including racial and ethnic minorities and hidden populations. including LGBTQ+ individuals (Clark, Rosenthal, & Boehmer, 2015; Wagner & Lee, 2015). Although this method ultimately yields a non-random convenience sample, it capitalizes on opportunities to focus recruitment toward eligible participants which can often reduce time and resources needed to recruit adequate sample sizes (Wagner & Lee, 2015). Descriptive statistics and disclosure of

participant recruitment and sampling methods can help include appropriate cautions regarding generalizability of studies when other strategies to replicate a representative random sample may not be achievable. Inclusion of limitations related to generalizability and efforts to identify factors that may differentiate the achieved sample from the population of interest overall help to responsibly alert consumers of research and research data to understand study findings within the context that they were examined (Wagner & Lee, 2015).

Cultural mistrust. Distrust of investigators, research organizations, and institutions creates a barrier for participation in research. This phenomenon is particularly salient among Black/African Americans with concerns about potential mistreatment or exploitation and beliefs that data may be used to negatively portray communities—both phenomena frequently reported across studies (Huang & Coker, 2010; Yancey et al., 2006). Cultural mistrust has also been associated with more negative attitudes toward mental health interventions among Filipinos (David, 2010). While the construct of cultural mistrust initially evolved to represent experiences of Black/African Americans in response to longstanding and systemic oppression within the United States, systemic and historical oppression, marginalization, and mistreatment of multiple racial, ethnic, and other minority groups foster cultural mistrust among other populations as well (David, 2010).

In attempt to address the barrier of cultural mistrust as it pertains to participation in research, relationship building and ability to convey investment in the community may be of particular importance (Yancey et al., 2006). As such, sampling methods that employ in-person contact may offer advantages in recruiting participants from minority groups if this type of recruitment is feasible, can illustrate genuine connections of the investigators to the community, and demonstrates research goals aimed toward addressing the needs or well-being of a given

community (Yancey et al., 2006).

Multiple studies have found concerns related to confidentiality and privacy reported as a potential barrier to research participation among Black/African Americans (Yancey et al., 2006). While compensation and incentives increase participation likelihood among prospective participants (Williams, Beckmann-Mendez, & Turkheimer, 2013;Yancey et al., 2006), compensation provided that does not require disclosure of personally identifying information (e.g., name, address, etc.) to receive compensation may help to reduce these participant concerns (Williams et al., 2013).

Conclusion

This pilot study sought to examine relationships among PTSD symptom severity, perceived support from spouse, and attitudes toward mental health treatment among married U.S. veterans. Thirty-nine participants completed an online survey with inclusion criteria, demographic items, the PCL-5 measuring probable PTSD symptoms (Weathers et al., 2013), the MSPSS significant other sub-scale measuring perceived support from spouse (Zimet et al., 1988), and the ATSPPH-SF measuring attitudes toward mental health treatment (Fischer & Farina, 1995) with two additional mental health treatment utilization items.

This cross-sectional study used Pearson correlation, t-tests, and stratified correlation statistics to examine relationships between and among the above-mentioned variables. Proximal treatment engagement was found to be associated with attitudes toward mental health treatment as participants reporting participation in mental health treatment within the past 12 months reported significantly more positive attitudes toward mental health treatment $t(32)=2.37$, $p=0.024$. Lifetime treatment engagement was not related to more positive attitudes toward mental health treatment at the time of data collection $t(34)=0.700$, $p=.489$. No significant

correlations were found between PCL-5 symptom severity and perceptions of spousal support or between PCL-5 symptom severity and attitudes toward seeking psychological help. A significant moderate correlation was found between perceived support from spouse and attitudes toward seeking psychological help, in support of Hypothesis 1. Graphic visual review of data revealed possible non-linear relationship between perceived support and treatment seeking under the condition of PTSD diagnosis, and a stratified correlation was conducted to further explore this potential relationship.

Results of dichotomous stratified correlation analysis suggested that PTSD diagnosis (clinical cutoff of 33 or above on PCL-5) moderated the relationship between perceived support from spouse and attitudes toward mental health treatment. This effect showed that for married veterans without probable PTSD, greater support from spouse was moderately correlated with more positive attitudes toward mental health treatment (r=.446, p=0.012). The study's data suggest that this relationship was not retained among veterans with PTSD, and might have functioned in the inverse. Clinical implications of the findings include a potential benefit for targeted psychoeducation related to avoidance of treatment and PTSD for both veterans and their spouses. Additionally, conjoint therapies or mental health treatments that work to include the family unit or the significant other of the PTSD diagnosed individual may be of particular benefit for married veterans.

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Appendix A: Recruitment Letter

You are invited to participate in an online research study that seeks to understand the experiences and attitudes of U.S. veterans regarding support from spouses, aspects of mental health, and mental health treatment. If you are a veteran of any branch of the U.S. military (Marines, Army, Navy, Air Force, or Coast Guard), and are currently married, you are eligible to participate in this study. The principal investigator for the study is Kimberly Sollows, a doctoral candidate in the Department of Clinical Psychology at Antioch University New England, Keene, NH. Kimberly is conducting this study for her dissertation under the supervision of her advisor, Dr. Gargi Roysircar.

Participation in this survey is completely voluntary. Participation will result in donation to Disabled American Veterans (DAV), a charity which benefits veterans by providing transportation, connection with healthcare services, and assistance for veterans in obtaining benefits and employment.

www.surveymonkey.com/r/usveteransurvey

Thank you sincerely for your time and consideration,

Kimberly Sollows

Appendix B: Informed Consent

You are invited to participate in an online research study that seeks to understand the experiences and attitudes of U.S. veterans regarding support from spouses, aspects of mental health, and mental health treatment. If you are a veteran of any branch of the U.S. military (Marines, Army, Navy, Air Force, or Coast Guard), and are currently married, you are eligible to participate in this study. The principal investigator for the study is Kimberly Sollows, a doctoral candidate in the Department of Clinical Psychology at Antioch University New England, Keene, NH. Kimberly is conducting this study for her dissertation under the supervision of her advisor, Dr. Gargi Roysircar.

1. PURPOSE OF THE PROJECT: This study seeks to investigate potential relationships between support from one's spouse, aspects of mental health, and attitudes toward mental health treatment among legally married U.S veterans.

2. PROCEDURES: As a participant, you will be asked to answer survey questions about your experiences in response to stressful life events, your attitudes about mental health treatment, and your experience of support provided by your spouse. Information regarding basic demographics will also be asked within these surveys. Completion of these surveys will take approximately 30 minutes.

3. BENEFITS OF PARTICIPATION: Although there are no estimated direct benefits of your participation in this study, the study seeks to understand factors influencing veterans' well-being and mental health, with the goal of improving community and mental health resources available to this population. Additionally, an anonymous donation of $1 will be made to the Disabled American Veterans (DAV) charity for every participant within this study.

4. RISKS: The risks to participation in this study are expected to be minimal. The questions in the survey are not anticipated to cause more discomfort than a person might encounter within daily life. In the event that a respondent experiences increased distress, the phone number for the Veteran's Crisis Line will be provided on each page of the survey.

5. CONFIDENTIALITY and ANONYMITY: The records of this study will be kept private. Only the primary researcher, Kimberly Sollows, will have access to the survey data. Any report of the study will include only average statistics and will not identify any particular person. You are not asked to write your name or any other information that may identify you. Your responses will be kept anonymous and stored on a password protected computer owned by the primary researcher.

6. REFUSAL/ WITHDRAWAL: Taking part in this study is voluntary. If you choose to be in the study, you can withdraw at any time without consequences of any kind.

7. DEBRIEFING: As the study does not anticipate adverse consequences from participation, there will be no formal debriefing. However, if you have any questions about the study, please contact the primary researcher at [redacted]

Should you have any questions about the research procedures or your rights as a participant, contact Dr. Kevin Lyness, Chair of the Antioch University New England Human Research Committee, [redacted], [redacted], or Antioch University New England Provost, Dr. Shawn Fitzgerald, [redacted]

If you consent to participate in the current study, please click "I Agree" to begin. You may choose to discontinue the survey at any time.

Appendix C: Inclusion Criteria and Demographic Questionnaire

1. Are you a veteran of the U.S. military? (Marines, Army, Navy, Air Force, or Coast Guard).

YES/NO

2. Are you legally married?

YES/NO

(If both questions 1 & 2 are answered affirmatively, the participant is automatically directed to a demographic questionnaire. In the event that participants do not meet criteria for the study, they will be directed to a "Thank you" page expressing appreciation for their interest and excusing them from the completion of the rest of the survey questions.)

3. Within which branch of the military did you serve?

□ Marines

□ Army

□ Navy

□ Air Force

□ Coast Guard

4. During which war or military conflict did you serve? (check any that apply)

□ World War II

□ Korean War

□ Vietnam War

□ Gulf War

□ Operation Enduring Freedom/Operation Iraqi Freedom

□ Operation New Dawn

□ Other (please specify) _____

5. Please select the item that best describes your military rank at discharge.

□ Enlisted

□ Warrant Officer

□ Officer

6. Please select your gender

□ Male

□ Female

□ Transgender

□ Non-binary

7. Please enter your age in years: _____ years

8. Race and Ethnicity:

□ Black/African American/Black American

□ Asian/Asian American/Pacific Islander

□ Latino/Hispanic/Latinx

□ American Indian/Alaska Native

□ White/White American

□ Biracial/Multiracial

□ Other (please specify):_____

9. Please indicate the gender of your spouse

□ Male

□ Female

□ Transgender

□ Non-binary

10. Is your spouse a US veteran or a member of the US military?

YES/NO

11. How would you describe your income status?

□ Wealthy

□ Upper middle class

□ Middle class

□ Working middle class

□Working poor

□ Poor

12. What is your level of education?

□ Less than high school

□ High school degree/GED

□ Attended college/Associate's degree

□ Bachelor's degree

□ Graduate/Professional degree

13. Please indicate your state of residence.

Appendix D: Posttraumatic Check-List, DSM-5 (PCL-5)

Instructions: Below are a list of problems that people sometimes have in response to a very stressful experience. Please reads each problem carefully, and then choose a number to indicate how much you have been bothered by that problem *in the past month.*

In the past month, how much were you bothered by:	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it?)	0	1	2	3	4
4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble	0	1	2	3	4

breathing, sweating)?					
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4

10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15. Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
16. Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17. Being "superalert" or watchful or on guard?	0	1	2	3	4

18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

Appendix E: Multidimensional Scale of Perceived Social Support

Significant Other Sub-scale

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

1. My Spouse is around when I am in need.

1	**2**	**3**	**4**	**5**	**6**	**7**
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

2. My spouse is a person with whom I can share my joys and sorrows.

1	**2**	**3**	**4**	**5**	**6**	**7**
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

3. My spouse is a real source of comfort to me.

1	**2**	**3**	**4**	**5**	**6**	**7**
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

4. My spouse cares about my feelings.

1	**2**	**3**	**4**	**5**	**6**	**7**
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

Appendix F: Attitude Toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF) with additional treatment utilization items

Instructions: Read each statement carefully and indicate your degree of agreement using the scale below. In responding, please be completely candid.

1. If I believed I was having a mental break down, my first inclination would be to get professional attention.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

2. The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

3. If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

5. I would want to get psychological help if I were worried or upset for a long period of time.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

6. I might want to have psychological counseling in the future.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

7. A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

8. Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

9. A person should work out his or her own problems; getting psychological counseling would be a last resort.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

10. Personal and emotional troubles, like many things, tend to work out by themselves.

1-Disagree **2**-Partly Disagree **3**-Partly Agree **4**-Agree

Scoring: Reverse score items, 2,4,8,9, and 10, then add ratings to get a sum. Higher scores indicate more positive attitudes toward seeking professional help.*

*will not appear in survey package for responders

Additional Treatment Initiation/Dose Items

Have you attended at least one mental health appointment in the past 12 months?

□ Yes

□ No

How many mental health related appointments have you attended within your lifetime?

□ 0

□ 1-3

□ 4-12

□ more than 12

Table 1

Cronbach's Alpha Values for Measures

Measures	No. of Items	α
PCL-5	20	.96
ATSPPH-SF	10	.96
MSPSS	4	.88

Note. N=39. PCL-5=Posttraumatic stress Checklist, DSM-5, ATSPPH-SF= Attitudes toward Seeking Professional Psychological Help-Short Form, MSPSS=Multidimensional Scale of Perceived Spousal Support-significant other sub-scale

Table 2

Descriptive Statistics

Measure	Mean	SD	Skew	Kurtosis
PCL-5	21.79	18.42	1.25	1.24
ATSPPH-SF	26.44	6.82	-0.25	0.04
MSPSS	21.00	6.26	-0.78	-0.58
N=39	Engaged in Tx (lifetime)	Engaged in Tx (past 12 months)		
	64.10%	28.21%		

Note. N=39. PCL-5=Posttraumatic Checklist, DSM-5. ATSPPH-SF=Attitudes toward Seeking Professional Psychological Help-Short Form. MSPSS=Multidimensional Scale of Perceived Social Support-significant other subscale. Tx=mental health treatment or at least one mental health appointment.

Table 3

Pearson Correlations among PCL-5, ATSPPH-SF, and MSPSS

Measure	PCL-5	ATSPPH-SF	MSPSS
PCL-5	1.00	-0.187	-0.184
ATSPPH-SF		1.00	.345*
MSPSS			1.00

Note. N=39. *p<.05. PCL-5=Posttraumatic Checklist, DSM-5. ATSPPH-SF=Attitudes toward Seeking Professional Psychological Help-Short Form. MSPSS=Multidimensional Scale of Perceived Social Support-significant other sub-scale.