ABSTRACT

Title of Dissertation: EXPLORING PREDICTORS OF MILITARY SPOUSES'
                                 COMFORT SEEKING MILITARY-PROVIDED
                                 COUNSELING SERVICES

                                 Christye Yvonne Brown, Doctor of Philosophy, 2017

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        Over 1.2 million (approximately half) of the service members deployed in support of the

Global War on Terror were married at the time of their last deployment (Department of Defense,

2013). Data from the study of military and veteran families suggests that both stress and the

process of coping with or overcoming exposure to adversity or stress resonate across the family

system (Meredith L. S., et al., 2011), and that the impact of war and its consequences are

experienced by partners and families in addition to service members (Lester, Blair, Saltzman, &

Klosinski, 2013). The purpose of this study was to determine predictors of spouses' comfort in

seeking military-provided counseling services when service members are deployed, by examining

spousal coping behaviors, mental health status, and social support and demographics (rank and

gender), as reported from the 2012 Active Duty Spouses Survey (ADSS). Analyzing survey data

from 10,574 participants, we determined that 82.5% of the participants had spouses who were

deployed for more than 30 consecutive days, and 64.3% of the participants felt comfortable using

military-provided services for counseling. Statistically significant predictors of comfort-seeking,

military-provided counseling services included positive coping behaviors, mental health status,

social support, and the rank of the spouse's partner. Spouses of officers were less likely to feel comfortable using military-provided services for counseling compared to spouses of enlisted service members. The level of psychological stress experienced by the spouses correlated with all predictors of comfort seeking, military-provided services for counseling. The results were consistent with previous studies on the predictors and outcomes of psychological stress among military spouses, and supported the Transactional Model of Stress and Coping. The results have practical significance because they will help planners tailor programs to optimize the uptake of counseling services for military spouses who are in need. We recommend that future research incorporate measures of the service members' extended deployments in combat zones to determine if extended combat-related deployment predicts spouses' comfort seeking military-provided services for counseling. Qualitative research may also be useful to provide more insight into why some military spouses feel comfortable using military-provided services for counseling while others do not.

EXPLORING PREDICTORS OF MILITARY SPOUSES'

COMFORT SEEKING MILITARY-PROVIDED COUNSELING SERVICES

by

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PREFACE

The mental health and well-being of our service members and their families is near and dear to me. It is my hope that this research contributes to our progressive efforts to ensure for the provision of effective programs and practices to better serve this community. We appreciate the military spouse and the foundation they provide for their families while our country's service members protect our great nation.

ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

1.1 Background - The Context of Deployment, Reintegration, and Help-Seeking

From September 2001 to December 31, 2014, 2.4 million active duty and reserve service members deployed in support of the Global War on Terror (serving in Operations Noble Eagle, Iraqi Freedom, Enduring Freedom, and New Dawn), and over 1.2 million (approximately half) of those service members were married at the time of their last deployment (Department of Defense, 2013). These missions have required members from all branches of the military (Air Force, Army, Marines, Navy, and Coast Guard) to endure one or multiple deployments in Iraq or Afghanistan or both, and to provide support for both combat and logistic roles. Although the number of deployed service members decreased exponentially over the last decade, as of September 2011 there were still 201,400 service members deployed in Iraq and Afghanistan (DMDC Active Duty Military Personnel Master File, 2011); as of November 2016, 11, 673 service members were still deployed (DMDC Active Duty Military Personnel Master File, 2016).

The structure of the military family presents a number of significant research questions, including major concerns such as the psychological effects experienced by military spouses as a result of their partners being deployed (Renshaw, et al., 2011; Eaton, et al., 2008; De Burgh, White, Fear, & Iversen, 2011; Verdeli, et al., 2011; Faulk, Gloria, Cance, & Steinhardt, 2012; Joseph & Afifi, 2010). Merely planning for a service member's deployment can cause extreme stress, not only for the service member and their social network, but also for the military spouse in particular. Research findings indicate that spouses are more stressed when the service member is deployed than not deployed (Everson, Herzog, Figley, & Whitworth, 2014; Mansfield, et al., 2010; Padden & Posey, 2013; Burton, Farley, & Rhea, 2009; Thomas de Burgh, White, Fear, Iversen, 2011), even though, based on the varying degrees of need expressed by a military

spouse, social support from family, friends, and the military community can offset or mediate the effects of deployment stress (Faulk, Gloria, Cance, & Steinhardt, 2012; Figley, 1995; Blank, Adams, Kittelson, Connors, & Padden, 2012; Dimiceli, Steinhardt, & Smith, 2010; Padden, Connors, & Agazio, 2011; Dimiceli, Steinhardt, Smith, 2010).

When the service member returns home, the reintegration process also requires the time and effort of all family members, with the understanding that individual changes in the service member have occurred during the separation (Pisano, 2010). Confronted with the hostile reality of war and its potential for injury, permanent disability and even death, service members returning home can experience systemic emotional and mental conditions that lead to a significant decrease in overall quality of life, not only for themselves, but also for their spouses and children (Figley, 2012). During this early period, seeking help for mental health services becomes particularly important for the service member and spouse. Mental health treatment engagement, however, depends on newly developed psychological and sociological factors, as well as the willingness to seek care.

If the service member is married, the spouse will likely play a key role in the service member's decision to seek mental healthcare; however, few studies have explored the association between spousal influence and the service member's decision to seek care. Although various mental health conditions resulting from combat service have been well documented, combat exposure is the only correlate consistently reported as being associated with post-traumatic stress disorder (PTSD) (RAND, 2010); in addition, a dose-response relationship between PTSD and combat has been reported (Dohrenwend et al., 2006). According to the American Psychiatric Association (2013), PTSD is characterized as a class of trauma and stress-related disorders; it is defined as a history of exposure to an extremely traumatic event (the

stressor), accompanied by four clusters of symptoms: intrusion (the inability to keep the traumatic memories from returning), avoidance (an attempt to avoid stimuli and triggers that may recall those memories), negative alterations in cognition and mood, and alterations in arousal and reactivity. There is little debate that, following deployment, PTSD affects a large number of service members and is linked to significant disability and distress for both veterans and their families (Creamer, Wade, Fletcher, & Forbes, 2011).

The military spouse may exert various influences on the service member's choice to utilize mental health interventions after deployment, and there have been several studies examining care-seeking behaviors and perceived barriers to behavioral health care among military spouses (Eaton, et al., 2008; Phelan, et al., 2011; and Bowen & Martin, 2011). Some research findings suggest that spouses are much more likely than soldiers to seek care for a mental health problem, were less likely to be concerned with stigma, and indicated a greater willingness to use mental health services if available (Eaton, et al., 2008). Increased knowledge of the role of the spouse in decisions to seek treatment could have valuable implications for helping both spouses and military members obtain needed psychological assistance. Indeed, the spouse should be considered a central factor in service member's decision to seek care.

An array of interventions have been designed to address PTSD and related mental health conditions: anger management therapy, exposure therapy with virtual reality, behavioral activation, mantram repetition (Morland, 2010; McLay, McBrien, Wiederhold, & Wiederhold, 2008; Jakupcak, Roberts, & Martell, 2006; Bormann, Thorp, Wetherel, & Golshan, 2008), and behavioral-based treatments have all been shown to effectively improve PTSD symptoms and reduce their severity (Adler, 2009). However, despite the prevalence of PTSD and the recognized success of mental health treatment, many service members do not seek or receive care due to

social stigma (Skopp N., et al., 2011), even though interventions may include anti-stigma components in the effort to modify negative representations associated with mental illness (Gould, Greenberg, & Hetherton, 2007; Steenkamp, 2011; Bryan & Morrow, 2011; Adler, 2009; Dunn, Yanasak, & Schillaci, 2004).

While such interventions may have a shared benefit to the military spouse and the service member after deployment (Beardslee, et al., 2011), additional questions regarding the environment prior to the service member returning home and the spouse's ability to seek and utilize services to optimize their own mental health need to be answered. Military spouses' perspectives on mental health can have a reciprocal effect the service member's decision to seek help for psychological problems (Meredith, et al., 2011). Further investigation into the mental health reciprocal effect can inform future efforts to minimize barriers faced by military families seeking help.

With the current military conflicts around the world involving the US military, service members will likely continue to serve in combat operations over the coming years. As a result, military spouses will continue to manage their families' changing environment due to the cycle of the service member's deployment, reintegration, and help-seeking after deployment. Moreover, the factors influencing the spouse's help-seeking during these deployments are key to increasing their utilization of appropriate counseling services. Furthermore, knowledge of the military spouse's help seeking for counseling services may have valuable implications for interventions designed to help military members obtain needed psychological assistance after deployment. The military community continuously seeks to protect and enhance the fitness of service members and their families; therefore, it is paramount that we increase research efforts into the psychological wellness of military spouses.

Due to limited empirical data, potentially significant findings in this study will need to be validated through subsequent studies in an effort to initiate or further develop effective interventions for the military community. This research study proposes to explore potential predictors of military spouses comfort in seeking military-provided counseling services after a service member is deployed, as reported from the 2012 Active Duty Spouses Survey. The research question was developed to determine whether or not spousal coping behaviors predict their comfort in seeking military-provided services for counseling, accounting for demographics (spouse's gender, rank of service member), mental health status, social support, and deployment status (deployed >30 days).

1.2 Conceptual Framework

We proposed to examine these variables using the Transactional Model of Stress and Coping (TMSC), a framework for evaluating processes of coping with stressful events in a person-environment transaction. TMSC has the advantage of "accounting for characteristics of the person and the environment that is appraised by the person as taxing his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984). When a person is faced with a stressor, they evaluate the potential threat (primary appraisal) by judging the situation as stressful, positive, controllable, etc. A second appraisal, in which a person assesses their coping resources and options, follows. The coping response aimed at regulating the problem gives rise to various outcomes.

The research question—determining whether or not spousal coping behaviors predict their comfort in seeking military-provided services for counseling—was guided by these constructs of the TMSC, and was operationalized as follows: when faced with deployment of their partner (the stressful event), military spouses will report comfort in seeking military-provided services for

counseling (outcomes of coping) when they believe that 1) the combat deployment of the service member presents a stressful mental health situation (primary appraisal), 2) they assess their social support network (secondary appraisal), and 3) they respond to difficulties through various coping strategies (coping response). This conceptual framework will be further detailed in chapter 2.

1.3 Problem Statement

Military service often involves one or more deployments, which requires the service member to be separated from family for extended periods. The effect of deployment on mental health in military spouses is largely unstudied (Mansfield, et al., 2010). To ensure that the psychological and social needs of military families are met, it is important to gain an understanding of the pivotal role of the military spouse and the central tenets of help-seeking and mental well-being.

1.4 Purpose of the Study

The purpose of this study is to determine predictors of spousal comfort in seeking military-provided services for counseling, examining spousal coping behaviors, mental health status, social support, deployed status of the service member (more than 30 days), and demographics. These variables will also be described as a group in relation to the spouse's comfort in seeking military-provided counseling services.

1.5 Significance

In light of the surge in service members returning from deployment over the last several years, and recent international conflicts that have resulted in a new wave of deployments of service members, evaluating the effectiveness of military family programs and resources has become increasingly necessary. In order to fully evaluate the effectiveness of these programs, it

is critical to evaluate the beliefs, perceptions, and behaviors of military families and spouses, and not just the existence of programs. The evidence-based data required to complete this task relies not only on program evaluation, but also on the evaluation of the beliefs, perceptions, and behaviors in the population of concern.

The 2012 Active Duty Spouses Survey (DMDC, 2013) reflects a representative sample of military spouses that will allow for further understanding of beliefs and behaviors surrounding comfort in seeking military-provided services for counseling. Little is known about military spouses' coping behaviors, mental health status, level of social support, and how the deployment of their partners effects the spouse's comfort in seeking military-provided counseling. In order to ensure that the psychological and sociological needs of military families are met, it is important to gain an understanding of the pivotal role of the military spouse and the central tenets related to help-seeking and mental well-being. If these study variables are found to be associated with the spouse's comfort using military provided counseling services, relevant programs can be tailored to maximize uptake of counseling services among military spouses, and a contribution to the literature can inform future research related to help-seeking and mental well-being of the military spouse.

1.6 Research Aims and Hypotheses

The specific aims of this study are to further examine military spouses, and specifically, to (a) identify and describe associations between their coping and comfort seeking military-provided services for counseling, (b) identify and describe associations between their mental health status and comfort seeking military-provided services for counseling, (c) identify and describe associations between their assessment of social support and comfort seeking military-provided services for counseling, (d) identify the association between the service member's

deployment status and spouse's comfort seeking military-provided services for counseling, and (d) describe collective associations among spouses' comfort seeking military-provided services for counseling, coping, mental health status, social support over the deployed status of their partner.

Hypotheses:

H1: Military spouses whose partners have ever been deployed (> 30 days) will be more likely to feel comfortable using military-provided services for counseling than spouses whose partners have never been deployed.

Justification: Research has indicated that factors such as combat duration can affect the mental health status of military spouses. Specifically, rates of mental health service use were 27% higher for spouses of personnel deployed longer than 11 months (compared with spouses of deployed personnel between 1 and 11 months), and higher prevalence rates were reported for depression, anxiety disorders, sleep disorders, acute stress reaction and adjustment disorder in spouses of deployed personnel compared to spouses of personnel who had not deployed (Mansfield, et al., 2010).

H2: Military spouses who report feeling more depressed, nervous, or anxious will be less likely to feel comfortable using military-provided services for counseling than spouses who report feeling less depressed, nervous, or anxious.

Justification: Research has indicated that spouses with greater feelings of depression may be less likely able to receive counseling. Research suggests that military spouses dealing with depression may not be able to effectively maintain the household during deployments or be supportive of the service members' reintegration (Verdeli, et al., 2011).

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H3: Military spouses who report a higher degree of social support will be more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support.

Justification: In studies that measured military family adaptation during deployment, the effects of family support services were found to be mediated by the effects of unit culture (Pittman, Kerpelman, & MacFadven, 2004), and seeking support from other spouses was identified as an effective resource for coping with deployment (Blank, Adams, Kittelson, Connors, & Padden, 2012).

H4: *Military spouses who report more positive coping (response to problems or difficulties) will be more likely to feel comfortable using military-provided services for counseling than those who respond less positively to problems or difficulties.*

Justification: Research has indicated that spouses who have effective coping behaviors can readily identify the need to seek and receive counseling if necessary. Specifically, military spouses who perceive their coping behaviors are effective experience less stress during deployment (Blank, Adams, Kittelson, Connors, & Padden, 2012).

H5: When deployed status (>30 days), mental health status, social support, and coping are simultaneously examined, the collective association will strongly predict the spouses' comfort using military-provided services for counseling compared to those who have not deployed.

Justification: Coping behaviors, such as optimistic thinking, have been shown to be an effective response to manage deployment separation (Blank, Adams, Kittelson, Connors, & Padden, 2012). Researchers who surveyed military wives of deployed servicemen found that problem-focused coping strategies and controllability were significantly related to decreased

depressive symptoms (Dimiceli, Steinhardt, & Smith, 2010). Thus, positive coping strategies may help overcome stress and help-seeking treatment barriers due to combat resulting from combat deployment of their spouses.

1.7 Definition of Variables and Terms

Comfort seeking military-provided services for counseling (dependent variable, dichotomous): The spouse's response (yes/no) to the question, "Regardless of your past counseling experiences, do you feel comfortable using military-provided services for counseling?"

Coping (independent variable, dichotomous): The spouse's response to the question, "When we face problems or difficulties in our family, we respond by . . . .?" is measured on a Likert scale (1-5). There are 21 items (a-u) for this question that make up the Family Crisis Oriented Personal Evaluation Scale (F-COPES). The scale is made up of five sub-factors, labeled as Acquiring Social Support, Passive Appraisal, Seeking Spiritual Support, Reframing and Mobilizing to Acquire and Accept Help (McCubbin, Olson, & Larsen, Family Crisis Oriented Personal Evaluation Scales (F-COPES; 1981), 1996). These items will be collectively noted as *response to difficulties*. Respondents must have answered 90% of the sub-items in the scale to be included. Scores are reported as a single figure reflecting the average of the individual scores; higher scores indicate a better ability to cope with stressful situations (DMDC, 2013). Score averages of 1 to 3 will be categorized as lower coping abilities and score averages of 4 to 5 will be categorized as higher coping abilities.

Context of deployment (independent variable, dichotomous): The spouse's response (yes; no) to the question, "During your spouse's active duty career, has he/she been deployed for more than 30 consecutive days?"

Mental Health Status (independent variable, dichotomous): The spouse's response (yes; no) to the question, "Over the last two weeks, how often have you been bothered by any of the following problems: little interest or pleasure in doing things; feeling down, depressed, or hopeless; feeling nervous, anxious, or on the edge; and not being able to stop or control anything." This index measure is taken from the Patient Health Questionnaire (PHQ-4).

Assessment of social support (independent variable, dichotomous): Captures the degree to which spouses have a community or network of people, other than their spouse, who they can depend on to provide companionship and assistance. Each item is rated on a 1 to 5 scale. Scores are reported as a single figure, which is the average of the individual scores (range 1 to 5). These items will be collectively tabulated as an assessment of social support. Respondents must have answered 90% of the sub-items in the index to be included. Scores are reported as a single figure reflecting the average of the individual scores; higher scores indicate a higher assessment of social support (DMDC, 2013). Score averages of 1 to 3 will be categorized as lower assessment of resources and score averages of 4 to 5 will be categorized as higher assessment of resources.

Demographics: The services members' ranks, defined as enlisted or officers (including warrant officers. The ender of the spouse, defined as female or male.

Definitions and Acronyms Used in the Study

Active Duty: Full-time employment in the active service of one of the uniformed services.

Postdeployment: The period that begins when the service member returns from deployment

DMDC: Defense Manpower Data Center

DoD: Department of Defense. A Federal government office that oversees all U.S. military service branches.

GWOT: Global War on Terror. This term refers to the global efforts to address threats to national security, often involving military manpower and resources.

MTF: Medical Treatment Facility. These military hospitals and health clinics vary in size and specialty care available. They are located on military bases worldwide.

OEF: Operation Enduring Freedom. The war in Afghanistan.

OIF: Operation Iraqi Freedom. The war in Iraq.

OND: Operation New Dawn. The war in Iraq after September 1, 2010 to indicate the change in mission for US forces in Iraq.

CHAPTER 2: LITERATURE REVIEW

This chapter presents a demographic profile of military spouses and summarizes the literature surrounding factors that may influence the spouses' decision to receive counseling services during the service member's deployment (i.e., stress, coping behaviors, psychological morbidity, and barriers to care). Contending with myriad social and emotional stressors, the military spouse must adjust to military rules and regulations, a highly mobile lifestyle, and, often, isolation from extended family and civilian communities (Segal M., 1986; Eaton, et al., 2008). Since the Global War on Terror, military spouses have faced additional stressors associated with "unprecedented lengthy and multiple deployments" (Park, 2011), and the challenge of maintaining the family household during a service member's extended absence (Spera, 2009). These long term separations have been characterized as periods of extreme fear and exacerbated stress for service members, spouses, and their families (Verdeli, et al., 2011); and a service member's reintegration to the home environment can also be a challenging time (MacDermid Wadsworth, 2010).

The military family, already an intricate system, is further complicated when the service member prepares for deployments, deploys, and returns from deployment. With the ending to the Iraq conflict in 2011 and a substantial reduction of US troops in Afghanistan over the last few years (American Forces Press Service, 2011), an influx of service members have returned home to their families, entering the post-deployment phase (Pincus, House, & Christenson, 2008). The effects of combat experiences can spill over to the military spouse and family unit, ultimately influencing the family's emotional, mental and even physical stability (De Burgh, White, Fear, & Iversen, 2011). Therefore, the mental health and well-being of the military spouse can be viewed as significant, influential factors during the deployment cycle. The results of this research study

may contribute to the further understanding of military spouses and may be applied to tailoring support programs for military spouses.

2.1 Demographics

Military personnel statistics report that the total active duty military population was 1,338,487 on September 30, 2014 (Department of Defense, 2014). According to the Defense Manpower Data Center (DMDC) report that examined a 10+ year retrospective on the GWOT (Department of Defense, 2013), there were 2,331,281 family members of the 1,759,457 active duty force that deployed, and 931,879 of these family members were military spouses (married at the time of service members' latest deployment); by gender, active duty service members who deployed (<30 days) were 88% male and 12% female. Nearly one-half (45.3%) of active duty members were 25 years of age or younger, and members who reported themselves as White made up the highest percentage of active duty members (70.3%), while members who reported themselves as Black or African American; Asian, American Indian or Alaska Native; and Native Hawaiian or other Pacific Islander made up 17.0 %, 3.6%, 1.7%, respectively; and roughly 11% of the active duty force was of Hispanic ethnicity (Department of Defense, 2010). Collectively, these summary statistics depict the demographic profile of the active duty population, and, therefore, serve as a proxy for the desired demographic profile of the military spouses' population.

2.1.1. Historical context of deployments and psychological impact on families

Since the Vietnam War, widespread psychological morbidity and social dysfunction have been reported in spouses of military personnel who have been deployed to combat zones (De Burgh, White, Fear, & Iversen, 2011). Though brief, Desert Shield/Desert Storm (Gulf War) presented a traumatic period for families and created unique stress beyond that experienced

during peacetime deployments, largely due to the swift recruitment for service members and unknown deployment lengths (Peebles-Kleiger & Kleiger, 1994; Rosen, Teitelbaum, & Westhuis, 1993). Deployments today produce the same mental health outcomes, and have received heightened awareness. After testimony from soldiers and their families during a 2007 hearing with the Committee on Oversight and Government Reform for mental health problems in soldiers returning from Iraq and Afghanistan, the committee and National Institute of Mental Health concluded that the mental health of families is also affected by military deployments (Eaton, et al., 2008). In the years to follow, this gave rise to many studies that examined stress; the prevalence of mental health problems, as well as associated factors such as help-seeking; barriers to treatment and stigma among military spouses (Joseph & Afifi, 2010; Verdeli, et al., 2011; De Burgh, White, Fear, & Iversen, 2011) in which researchers sought to determine associations between the deployment of service members and psychosocial factors in military spouses.

2.2 Spouses' Perceived Stress

Studies have shown that when the service member is stressed the military spouse is also distressed (Renshaw, et al., 2011). Emerging data from the study of military and veteran families suggest that both stress and resilience, defined as the process of coping with or overcoming exposure to adversity or stress (Meredith L. S., et al., 2011), resonate across the family system and that the impact of war and its consequences are experienced by partners and families (Lester, Blair, Saltzman, & Klosinski, 2013). In surveys of wives of deployed servicemen, 85% of respondents listed the foreign deployment of their spouse as the most stressful situation they had experienced in the past five years, spouses were found to be more stressed when the service member was deployed than not deployed (p<.001), and the levels of

perceived stress and somatization experienced by spouses of deployed and non-deployed service members indicated a significant positive correlation (r =.878, p < .001) (Burton, Farley, & Rhea, 2009; Dimiceli, Steinhardt, & Smith, 2010). Somatization has been characterized as 1) a history of physical complaints prior to age 30, which occur over a period of several years, 2) significant impairment in functioning or a history of resulting medical treatment, and 3) lack of explanation for the reported symptoms or for the severity of the complaints after seeing a physician (American Psychiatric Association, 2013).

Spousal stress is increasingly becoming defined or categorized based on various manifestations of the stress symptoms. This change is exemplified by research findings in which mental health professionals reference terms such as "compassion fatigue" and "secondary traumatic stress" (Figley, 1995) to describe a spouse's psychological distress when their partner, the service member, has PTSD (Renshaw, et al., 2011). It is common to find reported associations between perceived stress and health outcomes in studies on military spouses; therefore, it is expected that the precise nature of distress experienced be accurately diagnosed, since distinct treatments often exist for the various stress conditions (Renshaw, et al., 2011).

In a more constructive examination of stress, contentment (a general sense of satisfaction based upon the perception of quality of life) has been used as a criterion variable to model the effects of parenting stress experienced by spouses of soldiers deployed to Iraq. Evidence has indicated that spouses with a higher sense of coherence (perception of comprehensibility, manageability and meaningfulness) experienced better contentment with their lives during deployments, but length of deployment and ethnic background of the spouse also influenced contentment and perception of family coping (Everson, Darling, & Herzog, 2013). Factors such as rank, ethnic background, and children have been found to influence spousal perception of

deployment stressors (Everson, Herzog, Figley, & Whitworth, 2014; Everson, Darling, &

Herzog, 2013). Thus, these factors need to be included as demographic variables in the statistical

analysis of the data to better understand military spousal stress.

2.3 Spouses' Response to Difficulties (Coping)

2.3.1. Coping behaviors

Coping is defined as "the cognitive and behavioral efforts made to master, tolerate, or

reduce external and internal demands and conflicts among them" (Folkman & Lazurus, 1980).

Coping as a process depicts two major functions: problem-focused and emotion-focused

(Lazarus, 1993). Problem-focused coping functions to change the troubled person-environment

relationship by acting on the environment or oneself. Emotion-focused coping is dependent upon

1) a change in the way the stressful person-environment relationship is cognitively managed (i.e.,

with caution or avoidance) or upon 2) alleviating stress through changing the relational meaning

of the event or circumstance (though the person-environment relationship is not intentionally

changed) (Lazarus, 1993). In essence, problem-focused coping aims to manage the situation

itself while emotion-focused coping seeks to manage the emotions associated with the situation.

The literature on military spouses depicts greater effectiveness when the coping process

functions from a problem-focused perspective. As an example, problem-focused behaviors such

as supportant (measures use of support systems) and confrontive (includes behaviors of

constructive problem solving) behaviors have been shown to be effective in dealing with

deployment separation (Blank, Adams, Kittelson, Connors, & Padden, 2012). Researchers who

surveyed military wives of deployed servicemen found that problem-focused coping strategies

and controllability were significantly related to decreased depressive symptoms, while emotion-

based coping was positively related to increased physical symptoms (Dimiceli, Steinhardt, &

Smith, 2010). In a qualitative phenomenological analysis of eight military wives, 100% of the women employed problem-focused strategies during their partner's deployment in Iraq by reaching out to the military community support network; however, emotion-focused coping strategies such as reframing the situation with positive self-talk and seeking the protection of spirituality and prayers were also utilized (Chambers, 2013).

In studies on military spouses, differences in coping behaviors have been found among rank groups, those who grew up in a military family, and those with a previous deployment separation (Padden, Connors, & Agazio, 2011). Military spouses who perceive their coping behaviors as effective will likely experience less stress during deployment (Blank, Adams, Kittelson, Connors, & Padden, 2012). Inopportunely, during deployment of the service member, many spouses are predisposed to ineffective coping because of demographic factors such as young age and young motherhood (Green, 2011); ineffective coping with stressors can manifest both physically and/or psychologically through ailments including sleep disturbances, fatigue, depression, and anxiety (Padden & Posey, 2013).

In a study on 1,064 Army families reunited after a member's deployment for the Gulf War, a structural model was used to test the hypothesized effects of deployment-period family coping, use of family support services, and perceptions of the unit culture on family outcomes. Forming supportive communities and use of family support services, or problem-focused coping, were found to facilitate positive outcomes (Pittman, Kerpelman, & MacFadven, 2004).

2.3.2. Acquiring social support

Social support is key to mediating stressful circumstances and relationships (Whelan, 1993). Social support refers to the social connections provided by the environment (Marsella & Snyder, 1981) and is a broad concept that describes the structure, processes, and functions of

social relationships (Wenzel, Glanz, & Lerman, 2002). According to social support theory (Chronister, Frain, C, & Cardoso, 2008), when persons are presented with a stressor, a negative interpretation of stress can lead to health problems, with social support moderating the effect of stress on health and adjustment.

The stress buffering model measures social support as interpersonal resources in response to needs from a stressful event, which can be described in terms of the relationship's existence (structure) and provisions (function) (Cohen & Wills, 1985). These functional dimensions include the provision of material aid, information, comfort, and emotional support (Procidano & Heller, 1983). Perceptions of available functional support can affect one's interpretation of the knowledge of coping resources (Cohen & McKay, 1984), thus providing indirect measures of the effective support people receive (Cohen & Wills, 1985). In the aforementioned Army families study (Pittman, Kerpelman, & MacFadven, 2004), researchers found that more positive perception of unit culture was found to mediate the effects of family satisfaction with support services on family adaptation after deployment (50% more variance in wives of enlisted men than officers' wives).

In military communities, family readiness programs, such as the Navy's Fleet and Family Support Center, are formal programs that facilitate community networks of services through outreach and promote resiliency to strengthen the military and its family members (United States Navy, 2013). Over twenty years ago, some military researchers believed that formal support services could not replace the fundamental requirement for informal support from spouses, family, friends, other unit members and neighbors (Segal & Harris, 1993). However, in more recent years, well-received formal programs (such as Families OverComing Under Stress

[FOCUS]) depict a community-based structure and have been developed and implemented as support mechanisms for the entire military family after deployment.

FOCUS has provided resiliency training services to approximately 5,000 military children, spouses, and service members through its individual family intervention and over 200,000 family members, providers, and other community members via child and parent skill-building groups and workshops, consultations, and briefings (Saltzman, et al., 2011). Pre–post change scores showed significant improvements across all measures for parents with clinically meaningful impairments due to anxiety going from 20% to approximately 7% post-intervention; in depression from approximately 25–8%; and in perceptions of unhealthy family functioning from over 50% to approximately 30% (Saltzman, et al., 2011).

FOCUS highlights the model of community capacity by Huebner et al. (2009), which shows that formal support networks and informal support networks are bidirectional in their influence, with both contributing to the formation of social capital and community capacity. In essence, friendships, or "social capital," are forged through informal interactions, which evolve into communities that support each other's families, and these communities are eventually able to reach their desired results, or "community capacity" (Huebner, Mancini, Bowen, & Orthner, 2009).

Another formal program, Joining Forces, a White House initiative, "works hand in hand with the public and private sectors to ensure that service members, veterans, and their families have the tools they need to succeed throughout their lives" (The White House, 2014). All in all, while social support has been found to be highly dependent on the social context surrounding its measurement, it is still a routinely used variable in analyzing the coping process (Lazarus, 1993).

Coping strategies during the service members' deployment can also be viewed in the context of communication.

2.3.3. Passive appraisal and communication

One key component of deployment stress is the need to maintain the spousal relationship under the difficult circumstances of deployment and re-entry. A review of the literature indicates that marital communication is a broad concept that is commonly associated with and measured through marital stability and marital satisfaction. This communication is both logistically complicated during deployment and a vital component, as it can provide a general sense of the spouse's capacity to interact with the service member during deployment and influence attitudes and perceptions related to seeking mental health services. While studies show that other individually-based aspects in marriages may serve to modify the effect of communication on marital happiness (Litzinger & Gordon, 2005), research has shown that couples who are unable to communicate successfully tend to withdraw or become defensive, and these behaviors predict marital dissatisfaction and dissolution (Carrere & Gottman, 1999; Gottman & Levenson, 1992; Rogge & Bradbury, 1999).

In both civilian and military couples, depressive symptoms are associated with dissatisfaction with romantic relationships, (Jakupcak, et al., 2010). On the contrary, open communication has been found to be related to positive health outcomes (Smyth, Pennebaker, & Arigo, 2012) and marital satisfaction (Finkenauer & Hazam, 2000), although individuals may hesitate to convey stressful information to others. Spouses who reported positive coping strategies were more able to manage deployment-related stressors by maintaining a mediated, interpersonal connection and choosing open versus restricted communication (Rosseto, 2013). Additionally, research on military wives' disclosure of stressful situations to their deployed

husbands (N=105) assessed communication of family stressors during deployment; hiding concerns, or "protective buffering," was found to be associated with negative health outcomes and disclosure of information related to marital satisfaction (Joseph & Afifi, 2010).

In a sample of 434 couples consisting of active duty Army husbands married to civilian wives, (Allen, Rhoades, Stanley, & Markman, 2010), service members' current PTSD symptoms were found to be associated with lower levels of marital satisfaction, confidence in the relationship, positive bonding between the spouses, parenting alliance, and dedication to the relationship for both husbands and wives. In addition, service members' current PTSD symptoms were associated with higher levels of negative communication for both husbands and wives, as well as with lower satisfaction with sacrifice for the relationship for the service members. When negative communication, parenting alliance, and positive bonding were controlled, service members' PTSD symptoms no longer significantly predicted marital satisfaction for wives; the service member's report of marital satisfaction continued to have a significant, though reduced, effect. These comparable study outcomes depict an association between marital communication and health status which reinforces the study's aim to further explore coping behaviors and help-seeking to further elucidate these variables.

2.3.4 Potential barriers that may affect the spouses' help-seeking behavior

Help-seeking behavior for a health problem can be defined as a "problem focused, planned behavior, involving interpersonal interaction with a selected health-care professional" (Cornally & McCarthy, 2011). Rates of mental health service use were 27% higher for spouses of personnel deployed greater than 11 months (compared with spouses of deployed personnel between 1 and 11 months), and increased prevalence rates were reported for depression, anxiety disorders, sleep disorders, acute stress reaction and adjustment disorder in spouses of deployed

personnel when compared to spouses of personnel who had not deployed (Mansfield, et al., 2010).

In the study on primary care-seeking spouses (Eaton, et al., 2008), of spouses who screened positively for moderate to severe emotional, alcohol, or family problems, 41%, 19%, and 8% sought specialty mental health care, primary care, and pastoral counseling, respectively, and 41% reported that perceived barriers to seeking care were difficulty in getting child care or time off from work.

Help-seeking behaviors may be limited, however, by a number of barriers, such as stigma. Self-perceived stigma can be conceptualized as an individual's awareness of a stereotype, belief in that stereotype, and application of that stereotype to his or her own identity (Corrigan & Shapiro, 2010). Furthermore, the stigmatizing process reduces self-efficacy and self-esteem (Corrigan, Larson, & Rusch, 2009), which can result in the stigma often being enacted in an individual's perceptions surrounding the decision to seek help for mental health services (Britt, Greene-Shortridge, & Castro, 2007). Controlled social laboratory studies have demonstrated an inverse association between public stigma and help seeking (Corrigan, 2004).

Public stigma can be defined as the reaction of the general public toward an individual or group based on existing stigmas about that group (Corrigan & Watson, 2002), ultimately resulting in "everyday life discriminations" when those stigmatized attempt interpersonal interactions (Rüsch, Angermeyer, & Corrigan, 2005). In the military, the anticipation of public stigma that is associated with seeking help has been identified as a barrier to seeking care (Iversen, et al., 2011), and a generally accepted explanation for limited success of mental health services is that stigma prevents service members from seeking and accessing needed care (Bryan & Morrow, 2011). Patterns of stigma and barriers to care were shown to be similar across the

armed forces of five nations including the US, where stigma has been labeled as a major barrier for service members seeking help (Gould, et al., 2010). Additionally, military surveys consistently report that while the majority of returning service members are likely to exhibit some distress responses after serving in a combat environment, they feel a stigma attached to seeking treatment for PTSD and often choose not to do so (Burns, et al., 2010).

Perceptions of stigma among military spouses have shown that 70% of spouses sought help, 20% of spouses reported that receiving care would be too embarrassing, and 22% said they would be seen as weak (Eaton, et al., 2008). The spouses' stigma perceptions raise a concern equal to those known perceptions of the service member, which is particularly important considering that research findings indicate stigmatization can lead to an unnecessary prolonged course-of-illness in instances where PTSD or other psychological health concerns are the diagnosis (Center of Traumatic Stress, 2011).

The spouses' tendency to mobilize to acquire and accept help can also depend on the barrier of receiving care by civilian providers. Families of service members are often referred to civilian services for care because of increased needs of service members returning home and witnessing a shortage of mental health care professionals in the military treatment facility. For military spouses, it is essential to note that the treatment by civilian providers has not been optimal at times, the spouses' help-seeking experience was described as an emotional "roller coaster," and they felt their responses were marginalized in their interactions with civilian providers (Davis, Ward, & Storm, 2011).

Because military spouses can often be referred to civilian providers for care, the provision of appropriate materials and training to the civilian community of providers should be a priority. Moreover, in cases where spouses are referred to civilian providers, the positive or

negative perceptions of quality of care discussions among military spouses can determine their future use of mental health services in the civilian community. While these barriers can each be contributing influences in the military spouse's decision not to seek counseling services, there are social support services in place to combat these barriers. A review of the literature indicates several factors as contributory to spousal stress and coping, i.e., marital communication and satisfaction, stigma, and some demographic factors. However, these issues are beyond the scope of this current investigation.

2.4 Mental Health Status – Psychological Morbidity

Increased feelings of loneliness, anxiety, and depression were reported in spouses who experienced separations longer than anticipated (Mansfield, 2010). Further, spouses dealing with depression may not be able to effectively maintain the household during deployments or be supportive of the service members' reintegration (Verdeli, et al., 2011). Faulk et al., (2012) conducted a study to explore the direct and interactive effects of perceived stress and positivity on depressive symptoms among spouses of deployed active duty Army personnel; findings reported a positive association between stress and depressive symptoms, a negative association between positivity and depressive symptoms, and an interaction between stress and positivity indicating that higher positivity is protective for developing depressive symptoms at both high and low levels of stress.

In a study on postpartum depression, spouses of deployed personnel were found to be three times more likely to have postpartum depression if the deployment occurred during the pregnancy (Robrecht, Millegan, Leventis, Crescitelli, & McLay, 2008). Spouses' symptoms of depression were reportedly worse when perceptions of PTSD symptoms and severity between

spouse and service member were unmatched (meaning the service member did not acknowledge

his or her own PTSD symptoms) (Renshaw, Rodrigues, & Jones, 2008).

Depression can also present a longer-term problem, though conditions such as general

anxiety can appear to lessen. In a study of wives of recently returned service members and wives

of service members currently deployed, rates of anxiety, but not depression, were lower among

the wives of recently returned service members than those wives with currently deployed

partners (Lester, et al., 2010).

In a cross sectional study of primary care-seeking spouses of soldiers from units involved

in combat deployments (n=940), 16.9% reported experiencing a moderate to severe emotional,

alcohol, or family problem; 21.7% reported that stress or emotional problems negatively

impacted the quality of their work or other activities; and 19.5% met screening criteria for either

major depression or generalized anxiety disorders (Eaton, et al., 2008). On the positive side,

more than 68% of spouses who screened positive for one of these health issues received mental

health care services.

2.5 Conceptual Underpinnings

Psychological stress is viewed as a relationship (transaction) with the environment that a

person appraises as significant for his or her well-being, and in which the demands tax or exceed

available coping resources (Lazarus & Folkman, 1986). This definition identifies two central

mediators within this transaction: cognitive appraisal and coping (Krohne, 2002). Appraisal is a

concept that explains individual differences of stimulated emotions in environments that are

objectively equal for individuals in which the resulting state is dependent upon these appraisals

(Krohne, 2002) while coping is defined as "the cognitive and behavioral efforts made to master,

tolerate, or reduce external and internal demands and conflicts among them" (Folkman &

Lazurus, 1980).

2.5.1. Transactional Model of Stress and Coping (TMSC)

Transactional Model of Stress and Coping (TMSC) is a framework within which to

evaluate processes of coping with stressful events in a person-environment transaction. The

operationalization of the TMSC constructs in Figure 1 depict the idea that, when faced with

deployment of their partner (the stressful event), military spouses will be comfortable seeking

military-provided services for counseling (outcomes of coping) when 1) they believe that the

combat deployment of the service member presents a stressed mental health status (primary

appraisal), 2) they assess their social support resources (secondary appraisal), and 3) they

respond to difficulties through various coping strategies (coping response).

As a result of this overall theoretical review and taking into consideration the items on

the available dataset (2012 ADSS), we consider the response to difficulties factor to be the most

relevant measure to assess coping in military spouses during deployment. Moreover, we will

measure the spouse's level of comfort with seeking military-provided services for counseling as

an outcome to coping and current psychological symptoms as cognitive appraisal for the need to

seek counseling services. Additionally, comfort in seeking counseling services can be viewed

akin to intentions or attitudes towards help-seeking behaviors. According to the Theory of

Planned Behavior (TPB), cognitive processes are closely related to resultant behaviors (Ajzen,

1991). TPB posits a strong link between peoples' self-reported attitudes toward performing a

behavior (e.g., comfort-seeking counseling services) and producing that behavior in practice

(e.g., actually visiting professionals to seek help), bearing in mind that there may be constraints

(e.g., the stigma and fear associated with seeking psychological services) (Agestidottir, Heron,

Hartong, Haynes, & Linville, 2011). Furthermore, it has been suggested that measuring help-seeking intentions is fundamental to understanding how professionals can improve psychological counseling and other social services (Wilson, Deane, Ciarrochi, & Rickwood, 2005).

Figure 1. Military Spouses' Comfort Using Military-Provided Services for Counseling
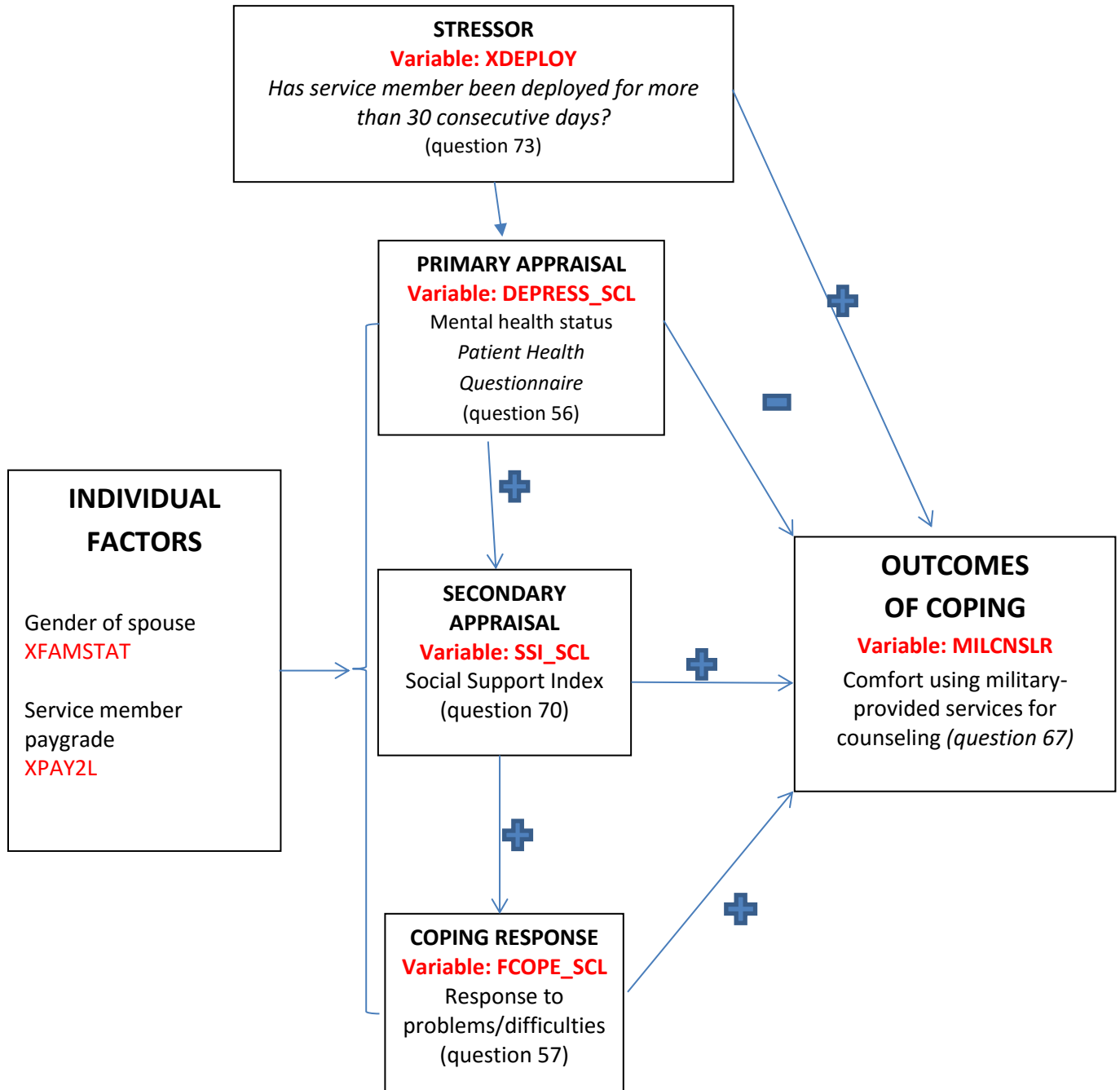
2.6 Research Aims and Hypotheses

The specific aims of this study are to further examine military spouses and specifically (a) identify and describe associations between their coping and comfort in seeking military-provided services for counseling, (b) identify and describe associations between their mental health status and comfort seeking military-provided services for counseling, (c) identify and describe associations between their assessment of social support and comfort seeking military-provided services for counseling, (d) identify the association between the service member's deployed status and spouse's comfort seeking military-provided services for counseling, and (d) describe collective associations among spouses' comfort seeking military-provided services for counseling, coping, mental health status, social support, and deployed status of their partner.

Hypotheses:

H1: Military spouses whose partners have ever been deployed (> 30 days) will be more likely to feel comfortable using military-provided services for counseling than spouses whose partners have never been deployed.

H2: Military spouses who report feeling more depressed, nervous, or anxious will be less likely to feel comfortable using military-provided services for counseling than spouses who report feeling less depressed, nervous, or anxious.

H3: Military spouses who report a higher degree of social support will be more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support.

H4: Military spouses who report more positive coping (response to problems or difficulties) will be more likely to feel comfortable using military-provided services for counseling than those who respond less positively to problems or difficulties.

H5: When deployed status, mental health status, social support, and coping are simultaneously examined, the collective association will strongly predict the spouses' comfort using military-provided services for counseling.

CHAPTER 3: METHODS

3.1 Study Population

The study population was military spouses who indicated they were currently married to an active duty member. Spouses were classified by the member's branch of service, pay grade, years of service, and spouse's gender.

3.2 Description of 2012 Active Duty Spouses Survey (ADSS) Sampling Procedures

Data was extracted from the 2012 ADSS instrument. Although similar surveys were conducted in 1992, 1999, 2006, and 2008, longitudinal data was not available for key questions, since these prior surveys have been modified and streamlined in this current version (DMDC, 2013). The 2012 ADSS was administered as both Web and paper-and-pencil questionnaires, and the target population consisted of spouses of active duty members of the Army, Navy, Marine Corps, and Air Forces, excluding National Guard and Reserves members.

Data were collected between November 19, 2012 and March 11, 2013, beginning with the notification letter mail to spouses, and using single-stage, non-proportional stratified random sampling procedures (DMDC, 2013). Completed surveys were received from 12,274 eligible respondents with a weighted response rate of 23%. Data were weighted using the three-stage process of weighting by adjustment for 1) selection probability, 2) nonresponse, and 3) known population values. Table 1 summarizes the variables extracted from the Active Duty Spouses Survey (ADSS) that were used in this study:

3.3 Study Variables

Table 1. Definitions of Variables

ADSS variable name	SPSS variable name	Items	Measures
XDEPLOY	Deployment	One item: During your spouse's active duty career, has he/she been deployed for more than 30 consecutive days?"	0 = No 1 = Yes
MILCNSLR	Comfort seeking counseling services	One item: Regardless of your past counseling experiences, do you feel comfortable using military-provided services for counseling?"	0 = No 1 = Yes
DEPRESS_SCL	Mental Health Status	Average score for four items indicates how often in the last two weeks the respondent has felt depressed, nervous, or anxious	1 = Not at all 2 = Several days 3 = More than half 4 = Nearly every
PSTRESS	Stress Scale	One item: Overall, how would you rate the current level of stress in your personal life?	1 = Much less than usual 2 = Less than usual 3 = About the same as usual 4 = More than usual 5 = Much more than usual
SSI_SCL	Social Support Index	Average score for 18 items indicates how much the respondent agrees or disagrees with statements about support from community and family	1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree
FCOPE_SCL	Coping Scale	Average score for 21 items measures the extent that coping and problem solving strategies are employed by families during challenging life situations	1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree
XFAMSTAT	Gender	One item: Gender of spouse	1 = Male 2 = Female
XPAY2L	Rank	One item: Service member's rank 2 Levels (WO included in Officers)	1 = Level 1 (enlisted) 2 = Level 2 (officers)

3.3.1. Dependent Variable

The dependent variable in this study was measured as a dichotomous (yes or no) response regarding the spouses' comfort using military-provided services for counseling. The survey question for this variable is "Regardless of your past counseling experiences, do you feel comfortable using military-provided services for counseling?"

3.3.2 Independent Variables

The independent variables included (a) Deployment; (b) Demographics; (c) Coping Scale; (d) Social Support Index; (e) and Mental Health Status.

Deployment. The service member's deployment history was assessed with the survey item asking, "During your spouse's active duty career, has he/she been deployed for more than 30 consecutive days?" The dichotomous (yes or no) response item allowed for a comparison of deployed and non-deployed service members.

Demographics. The categorical demographic variables were (a) the service members' ranks (Enlisted or Officers (including Warrant Officers); and the gender of the spouse (male or female).

Coping Scale. The F-COPES measured the extent that coping and problem solving strategies were employed by families during challenging life situations (McCubbin, Olson, & Larsen, Family Crisis Oriented Personal Evaluation Scales (F-COPES; 1981), 1996). The scale is constructed from 21 questions in which the spouse is asked to "Indicate how well each statement describes your family" on a 1 to 5 scale (strongly disagree to strongly agree). Higher scores indicate a better ability to cope with stressful situations. The scale is made up of five sub-factors labeled as Acquiring Social Support, Passive Appraisal, Seeking Spiritual Support, Reframing and Mobilizing to Acquire and Accept Help (Appendix A). Respondents must have answered

90% of the sub-items in the scale to be included. Scores are reported as a single figure reflecting the average of the individual scores (DMDC, 2013). Score averages of 1 to 3 are categorized as lower coping abilities, and score averages of 4 to 5 are categorized as higher coping abilities.

According to the survey findings (DMDC, 2013), Acquiring Social Support measures the spouse's use of family and/or friends in times of crisis. Reframing measures a spouse's ability to view a difficult situation in a more positive way or to accept difficulties as a part of life. Seeking Spiritual Support measures a spouse's use of spiritual resources and/or the use of spiritual advisors during difficult times. Mobilizing to Acquire and Accept Help measures a spouse's ability to cope with difficulties by seeking out and accepting help from others. Passive Appraisal measures a spouse's inability to cope with difficult situations or crises due to an avoidant interpretation of the challenging situation.

Overall reliability of the F-COPES using Cronbach's alpha has been estimated as ranging from .77-.86; individual subscales had alpha's ranging from .63- .83, and overall test-retest reliability was .81 (with individual scales ranging from .61-.95) (McCubbin, Olson, & Larsen, 2000). A Cronbach's alpha of 0.84 was reported in the ADSS (DMDC, 2013). The five sub-factors were measured independently and Cronbach's alpha was reported: Acquiring Social Support (.80), Passive Appraisal (.56), Seeking Spiritual Support (.87), Reframing (.71), and Mobilizing to Acquire and Accept Help (.73). Respondents must have answered 90% of the sub-items in the scale to be included.

Social Support Scale. The Social Support Index was used to measure an individual's belief that the community offers supportive resources during difficult times, and that individuals feel secure living in the community (DMDC, 2013). The item asks the spouse to indicate how much he or she agrees or disagrees with statements about their community and family. Eighteen

items make up the Social Support Index, and these items will be collectively noted as an assessment of social support.

Respondents must have answered 90% of the sub-items in the index to be included. Scores were reported as a single figure reflecting the average of the individual scores, with higher scores indicating a higher assessment of resources. Score averages of 1 to 3 were categorized as a lower assessment of resources and score averages of 4 to 5 will be categorized as a higher assessment of resources. Cronbach's alpha was .59; therefore, this measure had a low internal consistency reliability across the five items.

Mental Health Status. The Patient Health Questionnaire for Depression and Anxiety (PHQ-4) was developed as a brief screener for depression and anxiety, and combines two validated, two-item screeners (Kroenke, Spitzer, Williams, & Löwe, 2009). The scale ranges from 1 to 4, with higher scores indicating higher levels of depression, nervousness, and/or anxiety. Mental health status was assessed by the spouse's report of how often they felt depressed, nervous, or anxious. Rated on a 0 to 3 scale, the four questions comprised the total score for this variable. Spouses must have responded to all four questions to be included in the analysis. Scores were reported as a single figure, which was the average of the individual scores.

PHQ-4 total score ranges from 0 to 12, with categories of psychological distress being: none (0-2), mild (3-5), moderate (6-8), severe (9-12). The Anxiety subscale is the sum of items 1 and 2 (score range - 0 to 6) and the Depression subscale is the sum of items 3 and 4 (score range - 0 to 6). On each subscale, a score of 3 or greater is considered positive for screening purposes (Appendix B). Cronbach's coefficient alpha was 0.88.

In a study aimed at investigating PHQ-4 reliability and validity in a large general population sample, construct validity of the PHQ-4 was supported by inter-correlations with

other self-report scales and with demographic risk factors for depression and anxiety. PHQ-2 scores of 3 corresponded to percentile ranks of 93.4%, and PHQ-2 scores of 5 corresponded to percentile ranks of 99.0% (Lowe, et al., 2010) .

Stress Scale. The Stress Scale was measured using a single item: Overall, how would you rate the current level of stress in your personal life? The 5-point response was: 1 = Much less than usual; 2 = Less than usual; 3 = About the same as usual; 4 = More than usual; 5 = Much more than usual. Because it is a single item measure, the reliability of the Stress Scale could not be estimated. Moreover, while the actual "stressor" identified for this study is the deployment of the service member variable, because the theoretical model employed in this study is the Transactional Model of Stress and Coping, the Stress Scale will be incorporated into the descriptive analyses to determine its overall relationship with the study's variables.

3.4 Data Analysis Plan

The statistical analysis was conducted using SPSS, following the protocols described by Field (2013). Frequency distributions (counts and percentages) were computed for the categorical variables. Frequency distributions and descriptive statistics (mean, standard deviation, minimum, maximum, and skewness) were computed for the quantitative variables.

The following hypotheses were tested using binary logistic regression analysis:

H1: Military spouses whose partners have ever been deployed (> 30 days) will be more likely to feel comfortable using military-provided services for counseling than spouses whose partners have never been deployed.

H2: Military spouses who report feeling more depressed, nervous, or anxious will be less likely to feel comfortable using military-provided services for counseling than spouses who

report feeling less depressed, nervous, or anxious. H2 analysis: logistic regression reported in odds ratios.

H3: Military spouses who report a higher degree of social support will be more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support. H3 analysis: logistic regression reported in odds ratios.

H4: Military spouses who report more positive coping (response to problems or difficulties) will be more likely to feel comfortable using military-provided services for counseling than those who respond less positively to problems or difficulties. H4 analysis: logistic regression reported in odds ratios.

H5: When deployed status, mental health status, social support, and coping are simultaneously examined, the collective association will strongly predict the spouses' comfort using military-provided counseling services compared to those that have never deployed.

The hypotheses were tested using binary logistic regression analysis. The dependent variable, comfort using military-provided services for counseling, was dichotomous, representing two possible outcomes, coded by 1 to identify each participant who expressed comfort seeking military-provided services for counseling, or 0 to identify each participant who did not express comfort in seeking military-provided services for counseling. Quantitative covariates (mental health status, social support, and coping) and categorical factors (gender, rank, and deployment) were used to predict the log odds of the dependent variable. The log odds is defined by $\log_e \pi/(1-\pi)$ where π = probability of comfort seeking military-provided services for counseling, on a probability scale from 0 to 1. Each binary logistic regression model was constructed using an iterative procedure called the maximum likelihood method, which cycled through repetitions to find the best fit to the data (Hosmer & Lemeshow, 2000).

Binary logistic regression assumes that the data are a good fit to a logit function (i.e., a linear relationship between the log odds of the dependent variable and the predictor variables). The data do not deviate from the logit function if $p > .05$ for the Hosmer and Lemeshow Chi-square statistic. The regression coefficient for each predictor variable is significantly different from zero if $p < .05$ for the Wald statistic (Hosmer & Lemeshow, 2000). Binary logistic regression assumes that all of the predictor variables are independent, meaning that they should not be dependent or have any bearing on each other. There should be no multicollinearity (i.e., the predictor variables must not be strongly correlated with each other). Tests for multicollinearity were conducted by (a) constructing a matrix of Spearman's rank bivariate correlation coefficients between pairs of predictor variables and (b) measuring the condition index. Statistically significant correlations between all the predictor variables may reflect multicollinearity. The condition index was measured as the square root of the maximum eigenvalue divided by the minimum eigenvalue. If the condition index was above 30, then the regression could have significant multicollinearity (Belsey, 1991).

The Odds Ratio (OR) for each predictor variable was computed to predict the factor by which the log odds of the spouse's comfort seeking military-provided counseling services will change for a one unit change in the predictor variable. The Crude Odds Ratio would be computed if considering only the effect of one predictor variable. Because more than one predictor was entered simultaneously into the analysis, the Adjusted Odds Ratios were computed. The Adjusted Odds Ratios take into account the confounding effects due to all the other predictor variables included in the analysis (Hosmer & Lemeshow, 2000). If OR = 1.0, then the predictor variable had no effect. If OR > 1.0 the predictor variable increased the log odds. If OR < 1.0, the predictor variable decreased the log odds. If the 95% confidence intervals

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for the OR did not capture 1.0, the OR was significantly different from 1.0 at the .05 level. If the

95% confidence intervals for the OR captured 1.0, the OR was not significantly different from

1.0 (Hosmer & Lemeshow, 2000).

3.5 IRB approval

UMCP requires all human participant research studies that appear to meet one of the

Exempt criteria to be submitted through IRBNet for review and approval by the IRB

Chair/Designee. The IRB submission met the principles outlined in the Belmont Report and

approval was obtained. A copy of the IRB approval letter is included in the Appendix (Appendix

D).

4.1 Introduction

The results are presented systematically in eight sections as follows: Section 4.2 -Data

Screening; Section 4.3 - Descriptive analysis; Section 4.4 - Hypothesis 1; Section 4.5 -

Hypothesis 2; Section 4.6 - Hypothesis 3; Section 4.7 - Hypothesis 4; Section 4.8 - Hypothesis 5;

Section 4.9 –Summary.

4.2 Data Screening

The complete database containing responses to the ADSS, containing a total of 65,000

cases, was imported into the data editor of IBM SPSS version 20.0. Screening revealed that most

of the cases were not eligible and/or contained missing values (recorded as blank spaces in the

SPSS data editor). After exclusion of ineligible cases and missing values, the total number of

eligible respondents in the cleaned data file was 10,574 spouses, all of whom indicated at the

time of the survey that they were currently married to an active duty member. Each respondent

was classified by gender and rank of their partner, the service member. Table 1 depicts the he

table of the sample attrition is

4.3 Descriptive Analysis

The frequency distributions of the categorical variables provided by 10,574 participants

(i.e. help-seeking behavior, deployment, gender, and rank) are summarized in Table 2. The

majority of the respondents ($n = 8,726$, 82.5%) replied "Yes" to the question "During your

spouse's active duty career, has he/she ever been deployed for more than 30 consecutive days?"

A smaller proportion ($n = 6,800$, 64.3%) replied "Yes" to the question, "Regardless of your past

counseling experiences, do you feel comfortable using military-provided services for

counseling?" The majority of the respondents ($n = 7,461$, 70.6%) reported female gender. The

ranks of the respondents spouses', reflecting their pay groups, were classified as Enlisted: Level

1 (n = 7519, 71.1%) or Officers (including Warrant officers: Level 2 (n = 3055, 28.9%).

Table 2. Frequency Distributions of Categorical Variables

Variable	Category	n	%
Deployment	No (Code = 0)	1848	17.5
	Yes (Code = 1)	8726	82.5
Comfort-Seeking	No (Code = 0)	3744	35.7
Counseling Services	Yes (Code = 1)	6800	64.3
Gender	Male (Code = 1)	3113	29.4
	Female (Code = 2)	7461	70.6
Rank	Enlisted (Code = 1)	7519	71.1
	Officers (Code = 2)	3055	28.9

The descriptive statistics for the continuous variables, composited by averaging multiple

scores for 4-point ordinal item scales (Mental Health Status) or 5-point ordinal item scales

(Social Support Index, Coping Scale, and Stress Scale) are summarized in Table 3.

The frequency distribution of Mental Health Status, illustrated in Figure 2, was positively

skewed (Skewness = 1.52), with the Mean (1.57), Median (1.25), and Mode (1.00) at the lower

end of the 4-point scale. The majority (73.9%) of the respondents scored between 1 and 2,

indicating they did not very frequently feel depressed, nervous, or anxious in the last two weeks.

Table 3. Descriptive Statistics for Continuous Variables

	Mental Health Status	Social Support Index	Coping Scale	Stress Scale
Sample Size	10,574	10,574	10,574	10,574
Mean	1.57	3.74	3.35	3.52
Median	1.25	3.78	3.33	4.00
Mode	1.00	3.83	3.00	3.00
Standard Deviation	0.72	0.55	0.51	0.97
Skewness	1.52	-.0.290	-0.11	-0.378
Minimum	1.00	1.22	1.24	1.00
Maximum	4.00	5.00	5.00	5.00
Scale Range: Coding - Higher scores indicate: (coding)	1-4 Decreased mental health status	1-5 Greater support from community and family	1-5 Higher use of coping and problem solving strategies	1-5 Higher levels of experience with a high level of stress

The frequency distribution of the Social Support Index, illustrated in Figure 3, had a negative skew (Skewness = -0.290) with the Mean (3.74), Median (3.78), and Mode (3.35) above the center of the 5-point scale. The vast majority of the respondents (92.5%) scored between 3 and 5, indicating general agreement to receiving support from community and family.

The frequency distribution of the Coping Scale, illustrated in Figure 4, was not skewed (Skewness = -.011) with the Mean (3.74), Median (3.78), and Mode (3.35) above the center of the 5-point scale. The majority of the respondents (79.1%) scored between 3 and 5, indicating that they generally agreed with the statements about coping and problem solving strategies employed during challenging life situations.

Figure 2. **Frequency distribution of Mental Health Status in Active Duty Spouses**
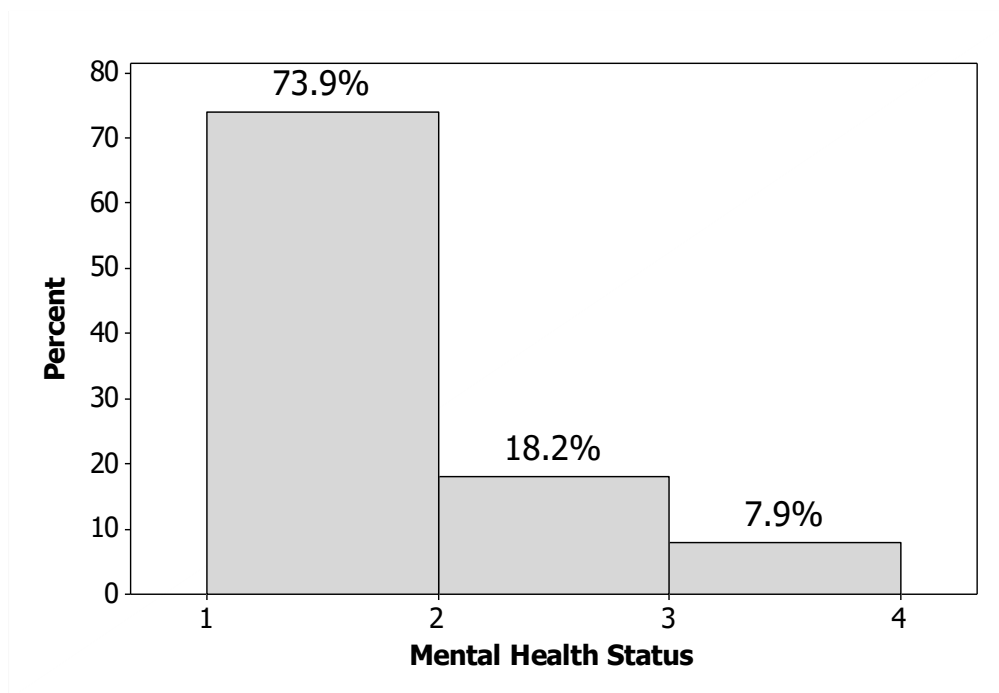
Figure 2. **Frequency distribution of Mental Health Status in Active Duty Spouses (higher scores indicate increased frequency of feeling depressed, nervous, or anxious in the last two weeks)**

Figure 3. **Frequency distribution of Social Support Index in Active Duty Spouses**
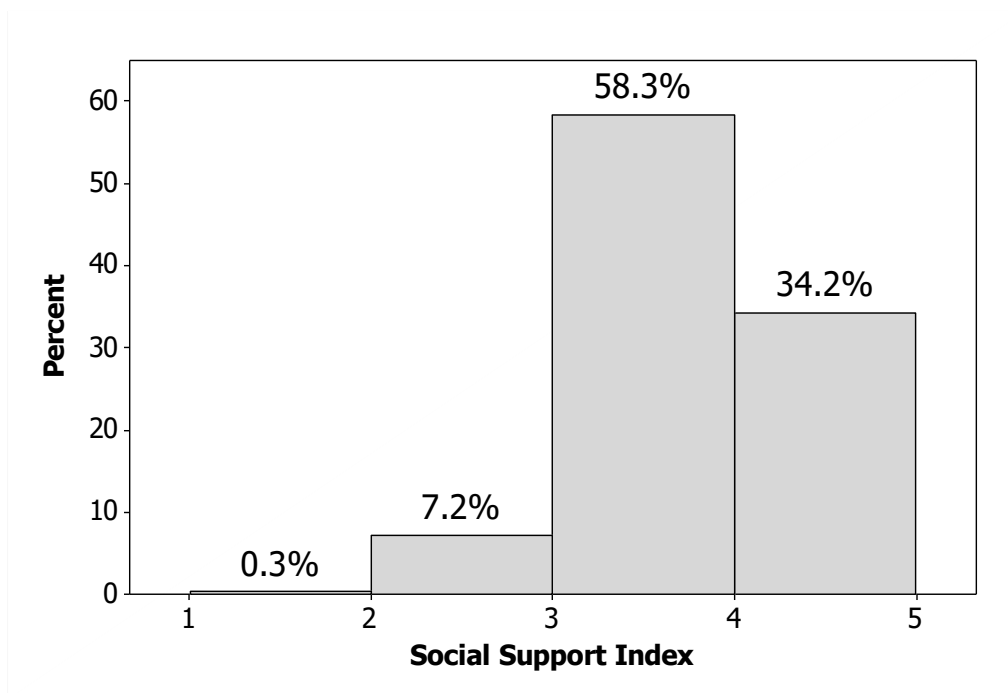
Figure 3. **Frequency distribution of Social Support Index in Active Duty Spouses (higher scores indicate general agreement to receiving support from community and family)**

Figure 4. **Frequency distribution of Coping Scale in Active Duty Spouses**
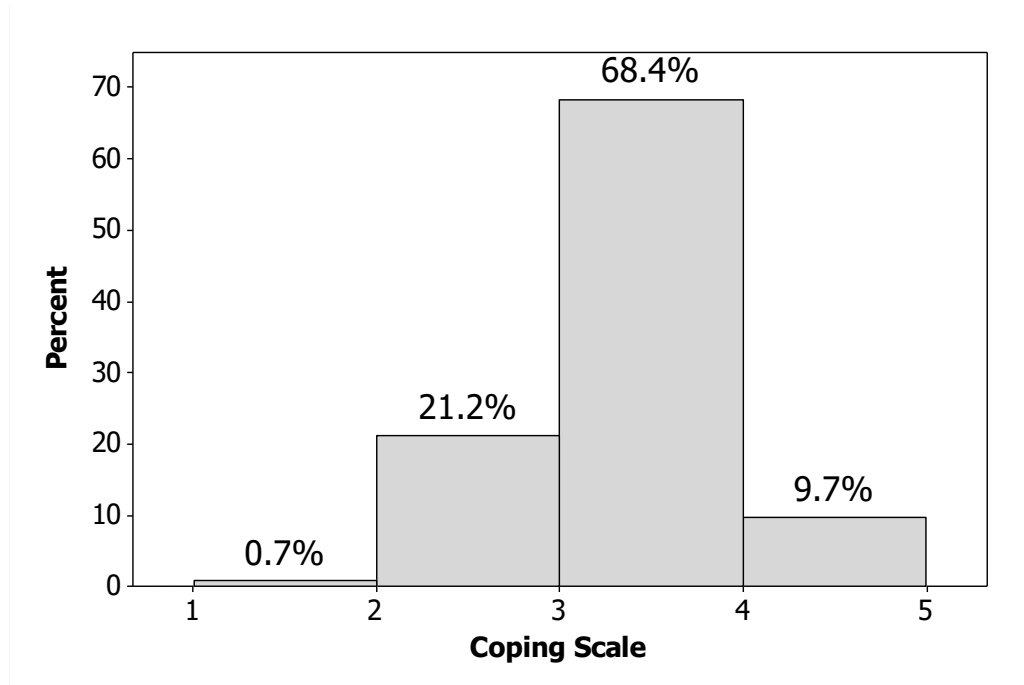
Figure 4. **Frequency distribution of Coping Scale in Active Duty Spouses (higher scores indicate general agreement with the statements about coping and problem solving strategies employed during challenging life situations)**

The frequency distribution of the Stress Scale, illustrated in Figure 5, was negatively skewed (Skewness = -.378) with the Mean (3.52), Median (4.00), and Mode (4.00) above the center of the 5-point scale. About half of the respondents (50.6%) scored between 4 and 5, indicating general agreement with statements reflecting the experience of a high level of stress.

Figure 5. **Frequency distribution of Stress Scale in Active Duty Spouses**
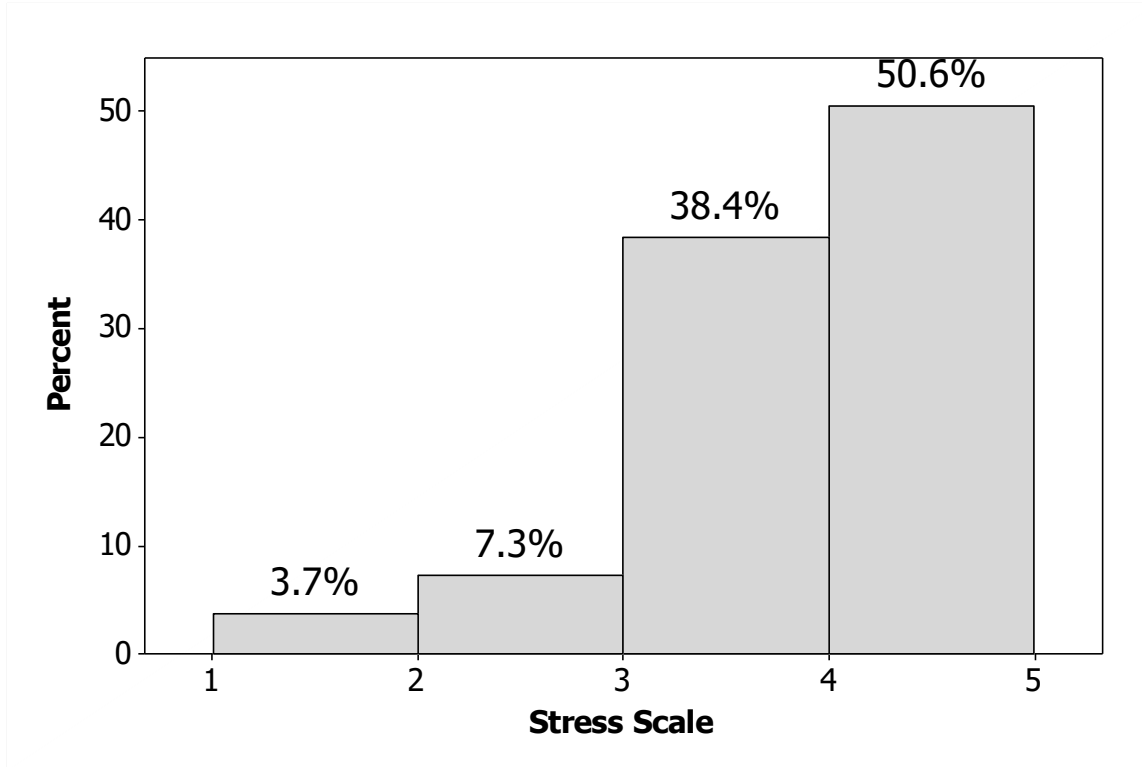
Figure 5. **Frequency distribution of Stress Scale in Active Duty Spouses (higher scores indicate general agreement with statements reflecting experience of a high level of stress)**

4.4 Multicollinearity

Table 4 presents a matrix of Spearman's *rho* correlation coefficients between the predictor variables. The correlation analysis was used to test for multicollinearity, because an assumption of binary logistic regression is that the predictor variables must be independent, and not strongly correlated with each other (Hosmer & Lemeshow, 2000).

Significant positive correlations ($p < .05$) were found between Social Support Index and Coping Scale (Spearman's *rho* = .461); and Social Support Index and rank (Spearman's *rho* = .184). The positive correlations indicated that a high level of agreement with the items related to support from community and family was associated with a high level of agreement with

statements concerning coping and problem solving strategies, and increased between respondents

married to officer ranks. Significant negative correlations ($p < .05$) were found between mental

health status and social support (spearman's *rho* = -.362), mental health status and coping

(spearman's *rho* = -.249), and mental health status and rank (Spearman's *rho* = -.102). The

negative correlations indicated that those who frequently felt depressed, nervous, or anxious also

exhibited low levels of social support, had poor coping strategies, and had spouses who were

enlisted service members.

Table 4. Correlations (Spearman's rho coefficients) between Predictor Variables

	Deployment	Mental Health Status	Social Support Index	Coping Scale	Gender	Rank
Mental Health Status	.039*					
Social Support Index	.009	-.362*				
Coping Scale	-.004	-.249*	.461*			
Gender	.105*	-.001	.020*	.026*		
Rank	.043*	-.102*	.184*	.117*	-.001	
Stress Scale	.067*	0.555*	-0.295*	-0.188*	.084*	-0.053*

Note: * Significant correlation ($p < .05$)

The Stress Scale was significantly correlated with all the other variables. High levels of

stress were associated with participants whose spouses were deployed (Spearman's *rho* = .067);

those who had high levels of depression, nervousness, or anxiety (Spearman's *rho* = 0.555); low

levels of social support (Spearman's *rho* = -0.295); and poor coping strategies (Spearman's *rho* =

-0.188); as well as female spouses (Spearman's rho = .084); and spouses with enlisted service

members (Spearman's rho = -.053). Therefore, the Stress Scale could not be assigned as an

independent variable, because the level of stress was dependent on the levels of deployment, mental health, social support, coping, gender, and rank.

The condition index = 35 when the Stress Scale was included in the regression analysis, thereby violating the recommendation that the condition index should not be over 30 (Belsey, 1991). When the Stress Scale was excluded from the regression analysis, the condition index = 24. Consequently, due to its multicollinearity with all the other predictor variables, the Stress Scale could not be incorporated as a predictor in the binary logistic regression analysis.

4.4 Hypothesis 1

This section presents the statistical evidence to test H1: *Military spouses whose partners have ever been deployed (> 30+ days) will be more likely to feel comfortable using military-provided services for counseling than spouses whose partners have never been deployed*.

Table 5 presents the results of binary logistic regression analysis with comfort seeking military-provided counseling services as the dichotomous dependent variable and deployment as the predictor variable, accounting for gender and rank. This model included the interactions between gender, rank, and deployment. The Hosmer & Lemeshow test (Chi-Square (6) = .030, *p* = 1.000) indicated that the model did not deviate significantly from the logit function, indicating good fit. The non-significant Wald statistics (*p* > .05) and the Odds Ratios capturing 1.0 in Table 5 indicated that deployment was not a significant predictor of comfort seeking military-provided counseling services, and the interaction terms (gender x deployment, rank x deployment, gender x rank) were also not significant. The interaction terms were therefore excluded because they increased the degrees of freedom, added unexplained variance to the model, and lowered the statistical significance of the main predictors (Hosmer & Lemeshow, 2000). Table 6 presents the results of binary logistic regression analysis with comfort seeking military-provided counseling

services as the dichotomous dependent variable and deployment as the predictor variable,

accounting for gender and rank, and excluding the non-significant interactions.

Table 5. Binary logistic regression statistics with interactions to test H1: Military spouses whose partners have ever been deployed (<30 days) will be more likely to feel comfortable using military-provided services for counseling than spouses whose partners have never been deployed.

Predictor	Regression Coefficient	Wald	df	p	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	-.170	.511	1	.475	.843	.528	1.346
Rank	-.087	.102	1	.750	.917	.538	1.562
Deployment	-.457	3.395	1	.065	.633	.389	1.030
Gender x Deployment	.190	2.869	1	.090	1.209	.971	1.506
Rank x Deployment	.053	.182	1	.670	1.054	.828	1.342
Gender x Rank	-.066	.459	1	.498	.936	.772	1.134

Table 6. Binary logistic regression statistics excluding interactions to test H1: Military spouses whose partners have ever been deployed (> 30 days) will be more likely to feel comfortable using military-provided services for counseling than spouses whose partners have never been deployed.

Predictor	Regression Coefficient	Wald	df	P	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	.086	3.714	1	.054	1.090	.999	1.189
Rank	-.102	5.235	1	.022*	.903	.827	.985
Deployment	-.082	2.297	1	.130	.921	.828	1.024

Note: * Significant predictor ($p < .05$)

The Hosmer & Lemeshow test (Chi-Square (4) = 1.362, p = .851) indicated that the model was a good fit to the data. The Wald statistics and Odds Ratios with 95% CI capturing 1.0 in Table 6 indicated that gender and deployment were not significant predictors of comfort in seeking military-provided counseling services. There was insufficient statistical evidence to support H1 because military spouses whose partners had ever been deployed were not more likely to feel comfortable using military-provided services for counseling than spouses whose partners had never been deployed. Rank was, however, a significant predictor. The significant Wald statistic for Rank (p = .022) and the Odds Ratio not capturing 1.0 (.903, 95% CI = .827, .985) indicated that spouses married to officers were less likely to feel comfortable using military-provided services for counseling than spouses married to enlisted service members.

4.5 Hypothesis 2

This section presents the statistical evidence to test H2: *Military spouses who report feeling more depressed, nervous, or anxious will be less likely to feel comfortable using military-provided services for counseling than spouses who report feeling less depressed, nervous, or anxious.*

Table 7 presents the results of binary logistic regression analysis with comfort seeking military-provided counseling services as the dichotomous dependent variable and mental health status as the predictor variable, accounting for gender and rank. This model included the interactions between gender x mental health and rank x mental health. The Hosmer & Lemeshow test (Chi-Square (8) = 8.302, p = .405) indicated that the model did not deviate significantly from the logit function, indicating good fit. The non-significant Wald statistics (p > .05) and the Odds Ratios capturing 1.0 for the interaction terms (gender x mental health and rank x mental health)

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indicated the interactions were not significant, and these terms were therefore excluded. The

binary logistic regression statistics excluding the interactions are presented in Table 8.

Table 7. Binary logistic regression statistics with interactions to test H2: Military spouses who report feeling more depressed, nervous, or anxious will be less likely to feel comfortable using military-provided services for counseling than spouses who report feeling less depressed, nervous, or anxious.

Predictor	Regression Coefficient	Wald	df	*p*	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	.105	.987	1	.320	1.111	.903	1.367
Rank	-.207	5.954	1	.015	.813	.689	.960
Mental Health	-.240	4.100	1	.043	.786	.623	.992
Gender x Mental Health	-.018	.089	1	.765	.982	.873	1.105
Rank x Mental Health	.044	.742	1	.389	1.045	.945	1.156

Table 8. Binary logistic regression statistics excluding interactions to test H2: Military spouses who report feeling more depressed, nervous, or anxious will be less likely to feel comfortable using military-provided services for counseling than spouses who report feeling less depressed, nervous, or anxious.

Predictor	Regression Coefficient	Wald	df	p	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	.077	2.957	1	.086	1.080	.989	1.178
Rank	-.145	10.378	1	.001*	.865	.792	.945
Mental Health	-.222	63.138	1	<.001*	.801	.758	.846

* Significant predictor ($p < .05$)

The Hosmer & Lemeshow test (Chi-Square (8) = 9.603, $p = .294$) indicated that the

model did not deviate significantly from the logit function, indicating good fit.

. The Hosmer statistics and Odds Ratios with 95% CI including one indicated that gender was not a significant predictor of comfort seeking military-provided counseling services at $p < .05$. Rank and mental health status were significant predictors. Spouses married to officers were less likely to feel comfortable using military-provided services for counseling than spouses married to enlisted service members (Odds Ratio = .865, 95% CI = .792, .945). When the respondents frequently felt depressed, nervous, or anxious, they were less likely to seek help (Odds Ratio = .801, 95% CI = .758, .846). Statistical evidence was provided to support H2: Military spouses who report feeling more depressed, nervous, or anxious were less likely to feel comfortable using military-provided services for counseling than spouses who report feeling less depressed, nervous, or anxious.

4.6 Hypothesis 3

This section presents the statistical evidence to test H3: *Military spouses who report a higher degree of social support will be more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support*.

Table 9 presents the results of binary logistic regression analysis with comfort seeking military-provided counseling services as the dichotomous dependent variable and social support as the predictor variable, accounting for gender and rank. This model included the interactions between gender x social support and rank x social support. The non-significant ($p > .05$) Hosmer & Lemeshow test (Chi-Square (8) = 16.093, $p = .041$) indicated that the model in Table 9 deviated significantly from the logit function. The non-significant Wald statistics ($p > .05$) and the Odds Ratios capturing 1.0 for the interaction terms (gender x social support and rank x social support) indicated the interactions were not significant. This model was, therefore, not a good fit

to the data, and the interaction terms were excluded. The binary logistic regression statistics

excluding the interactions are presented in Table 10.

Table 9. Binary logistic regression statistics with interactions to test H3: Military spouses who report a higher degree of social support will be more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support

Predictor	Regression Coefficient	Wald	df	p	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	.061	0.036	1	.850	1.062	.568	1.989
Rank	-.443	4.808	1	.028*	.642	.433	.954
Social Support	.705	18.047	1	<.001*	2.024	1.462	2.803
Gender x Social Support	.002	0.000	1	.985	1.002	.847	1.185
Rank x Social Support	.043	.677	1	.411	1.044	.942	1.157

Note: * Significant predictor ($p < .05$)

Table 10. Binary logistic regression statistics excluding interactions to test H3: **Military spouses who report a higher degree of social support will be more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support.**

Predictor	Regression Coefficient	Wald	df	p	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	.067	2.200	1	.138	1.069	.979	1.168
Rank	-.281	36.743	1	<.001*	0.755	.690	.827
Social Support	.761	369.679	1	<.001*	2.140	1.980	2.312

Note: * Significant predictor (p < .05)

The Hosmer & Lemeshow test (Chi-Square (8) = 6.184, p = .060) indicated that the

model in Table 10 did not deviate significantly from the logit function, indicating good fit. The

Wald statistics and Odds Ratios with 95% CI capturing 1.0 indicated that gender was not a

significant predictor of comfort seeking military-provided counseling services at $p < .05$. Rank and social support were significant predictors at the .05 level. Spouses married to officers were less likely to feel comfortable using military-provided services for counseling than spouses married to enlisted service members (Odds Ratio = .755, 95% CI = .690, .827). When the respondents had a high score for the Social Support Index, they were more likely to seek help (Odds Ratio = 2.140, 95% CI = 1.980, 2.312). Statistical evidence was provided to support H3: Military spouses who reported a higher degree of social support were more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support.

4.7 Hypothesis 4

This section presents the statistical evidence to test H4: *Military spouses who report more positive coping (response to problems or difficulties) will be more likely to feel comfortable using military-provided services for counseling than those who respond less positively to problems or difficulties.*

Table 11 presents the results of binary logistic regression analysis with comfort seeking military-provided counseling services as the dichotomous dependent variable and coping as the predictor variable, accounting for gender and rank. This model included the interactions between gender x coping and rank x coping. The non-significant ($p > .05$) Hosmer & Lemeshow test (Chi-Square (8) = 10.212, $p = .250$) indicated that the model in Table 11 including the interactions did not deviate significantly from the logit function, indicating good fit. The non-significant Wald statistics ($p > .05$) and the Odds Ratios capturing 1.0 for the interaction terms indicated the interactions were not significant. The interaction terms were therefore excluded. The binary logistic regression statistics excluding the interactions are presented in Table 12.

Table 11. Binary logistic regression statistics including interactions to test H4: **Military spouses who report more positive coping (response to problems or difficulties) will be more likely to feel comfortable using military-provided services for counseling than those who respond less positively to problems or difficulties.**

Predictor	Regression Coefficient	Wald	df	p	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	-.195	.429	1	.512	.823	.459	1.474
Rank	-.411	3.965	1	.046*	.663	.442	.994
Coping	.515	8.705	1	.003*	1.674	1.189	2.357
Gender x Coping	.078	.770	1	.380	1.082	.908	1.288
Rank x Coping	.062	1.051	1	.305	1.064	.945	1.198

Note: * Significant predictor (p < .05)

Table 12. Binary logistic regression statistics excluding interactions to test H4: **Military spouses who report more positive coping (response to problems or difficulties) will be more likely to feel comfortable using military-provided services for counseling than those who respond less positively to problems or difficulties.**

Predictor	Regression Coefficient	Wald	df	p	Adjusted Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	0.064	1.988	1	.159	1.066	.976	1.164
Rank	-0.203	19.871	1	<.001*	0.816	.746	0.892
Coping	0.723	301.576	1	<.001*	2.061	1.900	2.236

Note: * Significant predictor (p < .05)

The Hosmer & Lemeshow test (Chi-Square (8) = 9.677, p = .288) indicated that the model in Table 12 did not deviate significantly from the logit function, indicating good fit. The Wald statistics and Odds Ratios with 95% CI including one indicated that gender was not a significant predictor of comfort seeking military-provided counseling services at p < .05. Rank and coping were, however, significant predictors at the .05 level. Spouses married to officers

were less likely to feel comfortable using military-provided services for counseling than those spouses married to enlisted service members (Odds Ratio = .816, 95% CI = .746, .892). When the respondents had a high score for the Coping Scale, they were more likely to seek help (Odds Ratio = 2.061, 95% CI = 1.900, 2.236). Statistical evidence was provided to support H4: Military spouses who reported more positive coping (response to problems or difficulties) were more likely to feel comfortable using military-provided services for counseling than those who respond less positively to problems or difficulties.

4.8 Hypothesis 5

This section presents the statistical evidence to test H5: *When deployed status, mental health status, social support, and coping are simultaneously examined, the collective association will strongly predict the spouses' comfort using military-provided services for counseling than those who have not deployed.*

Table 13 presents the results of binary logistic regression analysis with the comfort seeking military-provided counseling services of the spouses of the 6800 service members who had ever been deployed as the dichotomous dependent variable. The deployment status, mental health status, social support index score and coping scale score were the predictor variables, accounting for gender and rank.

Table 13. Binary logistic regression statistics to test H5: When deployed status, mental health status, social support, and coping are simultaneously examined, the collective association will strongly predict the spouses' comfort using military-provided services for counseling than those who have not deployed.

Predictor	Regression Coefficient	Wald	df	*p*	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Gender	.067	2.179	1	.140	1.070	.978	1.170
Rank	-.293	39.403	1	.000	.746	.681	.818
Deployment	-.076	1.888	1	.169	.927	.831	1.033
Mental Health	.018	.339	1	.561	1.018	.958	1.082
Social Support	.574	154.081	1	.000	1.775	1.621	1.943
Coping	.455	93.769	1	.000	1.577	1.438	1.729

Note: * Significant predictor (p < .05)

The Hosmer & Lemeshow test (Chi-Square (8) = 11.217, p = .190) indicated that the model in Table 13 did not deviate significantly from the logit function, indicating good fit. The Wald statistics and Odds Ratios with 95% CI including one indicated that deployment status, gender, mental health status were not significant predictors of comfort seeking military-provided counseling services at the .05 level. The Social Support Index and the Coping Scale continued to be significant predictors, after accounting for the other study variables. When the respondents had a high score for the Social Support Index, they were more likely to seek help (Odds Ratio = 1.775, 95% CI = 1.621, 1.943). When the respondents had a high score for the Coping Scale, they were also more likely to seek help (Odds Ratio = 1.577, 95% CI = 1.438, 1.729). The spouses married to officers were less likely to seek help than the spouses of enlisted service members (Odds Ratio = 0.746, 95% CI = 0.681, 0.818).

Scatterplots were constructed to visualize how the predicted probabilities of comfort seeking military-provided counseling services (computed by SPSS as part of the logistic regression analysis) varied linearly, confirming the fit to the logit function, with respect to an increase in the Social Support Index and the Coping Scale. Figure 6 displays a scatterplot of the predicted probability of spouses whose service member has deployed who reported comfort in seeking military-provided counseling services vs. the Social Support Index. Each symbol represents one participant. Overall, the probability of comfort seeking counseling services increased linearly with respect to an increase in social support. The probabilities of comfort seeking counseling services among spouses of enlisted service members tended to be consistently higher than the probabilities of comfort seeking counseling services in spouses of officers.

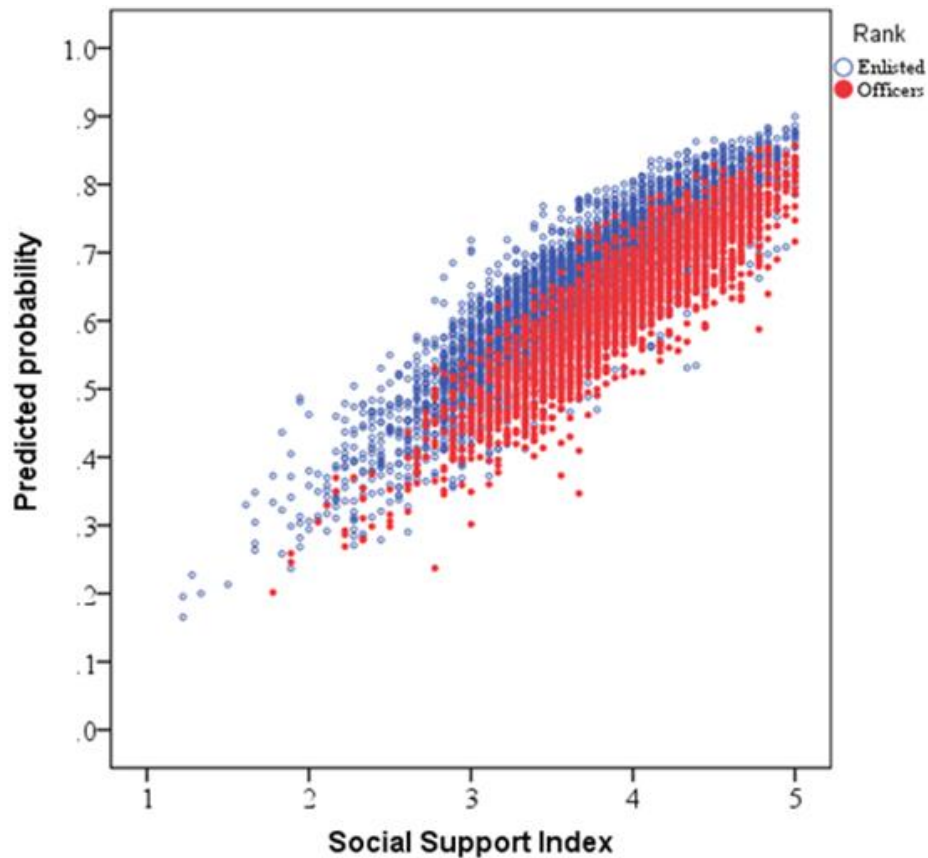*Figure 6.* **Predicted probability of Comfort- Seeking Counseling Services vs. Social Support Index**

Figure 6. **Predicted probability of Comfort- Seeking Counseling Services vs. Social Support Index (N=6800)**

Figure 6 displays a scatterplot of the predicted probability of spouses whose service members have deployed spouse reported comfort in seeking military-provided counseling services vs. the Coping Scale. Overall, the probabilities increased linearly with respect to an increase in the level of coping strategies. The probabilities of the comfort seeking military-provided counseling services in spouses of enlisted service members tended to be consistently higher than the probabilities of the comfort seeking military-provided counseling services in spouses of officers.
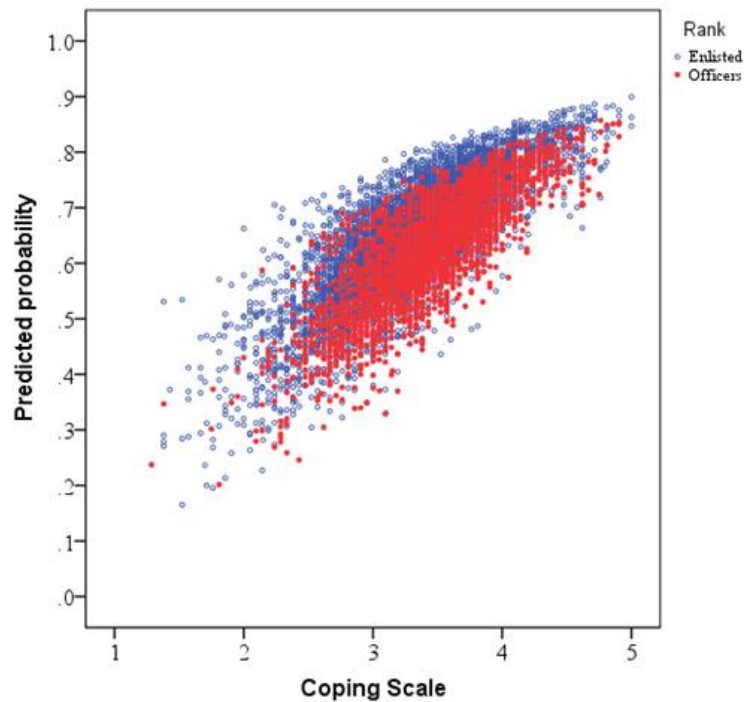
Figure 7. Predicted probability of Comfort-Seeking Counseling Services vs. Coping Scale (N=6800)

Insufficient statistical evidence was provided to entirely support H5. Although the overall model was a significantly good fit to the logit function, not all the predictors were significant. Mental health status was not identified as a significant predictor because this variable was significantly multicollinear with both the Social Support Index (Spearman's *rho* = -.363) and the Coping Scale (Spearman's *rho* = -.249). Participants who reported a high level of social support and reported more positive coping (response to problems or difficulties) also felt less depressed, nervous, or anxious. Mental health status was partialed out as a predictor in the regression analysis because it was not a true independent variable, but was dependent on, or had a bearing on, social support and coping.

Table 15 summarizes the descriptive statistics (mean and standard deviation) for the three continuous variables (mental health status, Social Support Index, and Coping Scale) classified by

gender and rank. Independent samples t-tests indicated that these three variables were not significantly different with respect to gender *(p > .05)*, but were significantly different with respect to rank *(p < .001)*.

Table 15. Differences between Continuous Variables Classified by Gender and Rank

Variable		Mental Health Status		Social Support Index		Coping Scale	
		Mean	SD	Mean	SD	Mean	SD
Gender	Male	1.58	0.73	3.73	0.54	3.33	3.35
	Female	1.57	0.71	3.75	0.55	0.52	0.51
	t	0.75		-1.74		-1.93	
	p	0.454		.082		.053	
Rank	Enlisted	1.63	0.75	3.68	0.54	3.31	0.52
	Officers	1.45	0.62	3.90	0.52	3.44	0.46
	t	11.25		-19.39		-11.84	
	p	<.001*		<.001*		<.001*	

Note: * Significant difference *(p < .001)*

Table 16 summarizes the frequency distributions of the cross-tabulated categorical variables. Pearson's Chi Square tests indicated significant (p < .05) associations between (a) deployment x gender; (b) comfort seeking counseling services x rank. There was no significant association (p > .05) between comfort seeking counseling services x gender or between and deployment status x rank.

Table 16. Cross-tabulations between Categorical Variables

Variable		Comfort Seeking Counseling Services		Deployment	
		No	Yes	No	Yes
Gender	Male	1151	1962	736	2377
	Female	2623	4848	1112	6349
	Chi Square	3.16		116.30	
	p	.075		<.001*	
Rank	Enlisted	2631	4888	633	1215
	Officers	1143	1912	3141	5585
	Chi Square	5.55		2.02	
	p	.018*		.155	

Note: * Significant association ($p < .05$)

4.9. Summary

The self- response data with no missing values were provided by 10,574 spouses. Each respondent indicated at the time of the ADSS that they were currently married to an active duty service member and each respondent was classified by rank and spouse's gender.

Descriptive statistics indicated that the majority of the participants (82.5%) had spouses who were deployed for more than 30 consecutive days. Regardless of past counseling experiences, 64.3% reported that they felt comfortable using military-provided services for counseling. The majority of the respondents (a) reported they did not very frequently feel depressed, nervous, or anxious in the last two weeks (73.9%); (b) agreed that they received social support from community and family (92.5%); (c) agreed with the statements about coping and problem solving strategies employed during challenging life situations (79.1%). Over half of the respondents (50.6%) reported that they felt more than usual levels of stress. These variables were multicollinear. A high level of support from community and family was associated with a high level of coping and problem solving strategies. Respondents who frequently felt depressed,

nervous, or anxious, and experienced high levels of stress, also exhibited low levels of social support, had poor coping strategies, and their spouses were enlisted service members.

Statistical evidence using binary logistic regression models was provided to generate several conclusions. Rank was a significant predictor of comfort seeking military-provided counseling services, but the spouse's gender was not. These findings indicated that the spouses of officers were less likely to feel comfortable using military-provided services for counseling than the spouses of enlisted service members. When examining the effect of deployment, mental health, social support status, and coping independently on comfort for using military-provided services for counseling, deployment was not a significant predictor, while mental health, social support, and coping were significant predictors. Specifically, military spouses whose partners had ever been deployed (> 30+ days) were not more likely to feel comfortable using military-provided services for counseling than spouses whose partners had never been deployed. Military spouses with a poor mental health status (who frequently felt depressed, nervous, or anxious) were less likely to feel comfortable using military-provided services for counseling than those who reported a good mental health status. Military spouses who reported a higher degree of social support were more likely to feel comfortable using military-provided services for counseling than those who reported lower levels of social support. Military spouses who reported more positive coping (response to problems or difficulties) were more likely to feel comfortable using military-provided services for counseling than those who responded less positively to problems or difficulties. When deployment status, mental health status, social support, and coping were simultaneously examined, the significant predictors for spouses' comfort using military-provided services for counseling using binary logistic regression were: rank, social support index, and coping scale.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

5.1 Introduction

The purpose of this study was to determine predictors of spousal comfort in seeking military-provided services for counseling. The spousal coping behaviors, mental health status, social support, deployed status of the service member (more than 30 days), and demographics were examined. These variables were analyzed separately and as a group in relation to the spouse's comfort seeking military-provided counseling services.

Statistical evidence was obtained to achieve the objectives of this study, using variables collected from 10,574 respondents who replied to the ADSS in 2012, specifically to: (a) identify and describe associations between their coping and comfort seeking military-provided services for counseling, (b) identify and describe associations between their mental health status and comfort seeking military-provided services for counseling, (c) identify and describe associations between their assessment of social support and comfort seeking military-provided services for counseling, (d) identify the association between the service member's deployed status and spouse's comfort seeking military-provided services for counseling, and (d) describe collective associations among spouses' comfort seeking military-provided services for counseling, coping, mental health status, social support, and deployed status of their partner. In summary, when examining the effect of deployment, mental health, social support status, and coping independently on comfort for using military-provided services for counseling, deployment was not a significant predictor while mental health, social support, and coping were significant predictors.

This chapter presents a discussion of the results in the context of the literature reviewed in Chapter 2 and comprises the following six sections: (1) Interpretation of the Results; (2)

Theoretical Implications; (3) Implications for Professional Practice; (4) Limitations of the Study;

(5) Recommendations for Further Research; and (6) General Conclusions.

5.2 Interpretation of the Results

The statistical analysis of the ADSS data provided quantitative evidence to address the overarching research question: what indicators predict spousal comfort in seeking military-provided services for counseling, accounting for demographic variables (spouse's gender, rank of service member), mental health status, social support, coping, and deployment status (deployed >30 days)? Sixty-four percent of the military spouses reported that they sought help, which is somewhat less than the 70% reported in a previous survey (Eaton, et al., 2008). The results of the statistical analysis, using binary logistic regression, are discussed systematically in the order of the five stated hypotheses, as follows: An updated model depicting the results presented in Figure 8.

Figure 8. **Military Spouses' Comfort Using Military-Provided Services for Counseling**
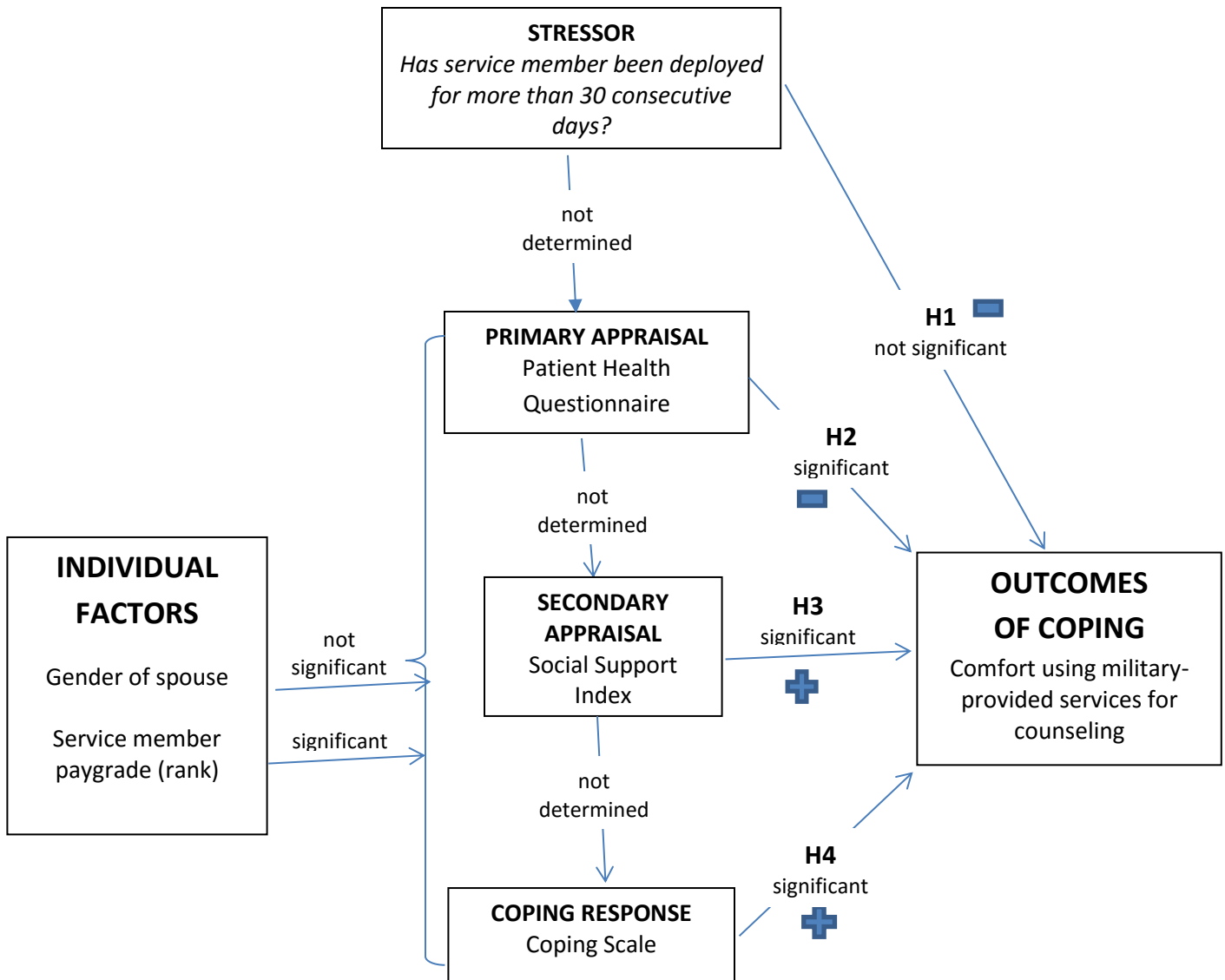

Figure 8. **Military Spouses' Comfort Using Military-Provided Services for Counseling**

Statistical evidence was obtained to test *H1: Military spouses whose partners have ever been deployed (> 30 days) will be more likely to feel comfortable using military-provided services for counseling than spouses whose partners have never been deployed.* The conclusion

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was that military spouses whose partners had ever been deployed were not more likely to feel comfortable using military-provided services for counseling than spouses whose partners had never been deployed. There is no other comparable information in the literature that is consistent with this conclusion, as no other researcher has compared the use of military-provided services for counseling than spouses whose partners have ever been deployed vs. spouses whose partners have never been deployed. Previous research indicated only that the rates of mental health service use were higher for spouses of military personnel who were deployed for more than 11 months compared to those whose spouses were deployed for 1 to 11 months (Mansfield, et al., 2010).

Statistical evidence was obtained to test *H2: Military spouses who report feeling more depressed, nervous, or anxious will be less likely to feel comfortable using military-provided services for counseling than spouses who report feeling less depressed, nervous, or anxious.* The conclusion was that military spouses with a poor mental health status, who frequently felt depressed, nervous, or anxious, were less likely to feel comfortable using military-provided services for counseling than those who self-reported a good mental health status. This conclusion is consistent with previous research indicating that spouses with greater feelings of depression may be less likely and able to receive counseling (Verdeli et al., 2011). The results also confirmed the existence of depression, anxiety disorders, and acute stress reaction in spouses of deployed personnel (Mansfield, et al., 2010).

Statistical evidence was obtained to test *H3: Military spouses who report a higher degree of social support will be more likely to feel comfortable using military-provided services for counseling than those who report lower levels of social support.* The conclusion was that military spouses who reported a higher degree of social support were more likely to feel

comfortable using military-provided services for counseling than those who report lower levels

of social support. This conclusion is consistent with previous research highlighting: (a) the

mediating effect of family support services for military spouses (Pittman et al., 2004); and (b) the

importance of seeking support from other spouses as an effective resource for coping with

deployment (Blank et al., 2012).

Statistical evidence was obtained to test H4: *Military spouses who report more positive*

coping (response to problems or difficulties) will be more likely to feel comfortable using military-

provided services for counseling than those who respond less positively to problems or difficulties.

The conclusion was that military spouses who reported more positive coping (response to

problems or difficulties) were more likely to feel comfortable using military-provided services for

counseling than those who respond less positively to problems or difficulties. This conclusion was

consistent with previous research indicating that spouses who have effective coping behaviors can

readily identify the need to seek and receive counseling if necessary (Blank et al., 2012).

Statistical evidence was obtained to test H5: *When deployed status (>30 days), mental*

health status, social support, and coping are simultaneously examined, the collective association

will strongly predict the spouses' comfort using military-provided services for counseling than

those who have not deployed. The conclusion was that when deployed status, mental health status,

social support, and coping were simultaneously examined, the collective association discounted

the effect of mental health on comfort using military-provided services for counseling. The reason

for this discrepancy was that mental health status was not an independent variable, but was

dependent on (i.e., multicollinear with) both social support and coping. This conclusion was

consistent with previous research indicating that coping behaviors were significantly related to

decreased, depressive symptoms, and that positive coping strategies tend to overcome stress and

help-seeking treatment barriers due to combat environment and poor mental health status (Dimiceli et al., 2010).

5.3 Theoretical Implications

The conceptual framework of this study was underpinned by the Transactional Model of Stress and Coping (TMSC) for evaluating processes of coping with stress (Lazarus & Folkman, 1984). The TMSC posits that when most people are faced with a stressor, they assess the potential threat and implement coping resources and social options in order to help reduce their levels of stress. The TMSC was supported, because statistical evidence was provided in this study to conclude that the majority of the military spouses who reported help-seeking behaviors in the form of comfort seeking military-provided services for counseling reported that (a) they experienced less stress; depression and anxiety; (b) had a strong social support network; and (c) responded to difficulties through various coping strategies. In contrast, those military spouses who did not report help-seeking behaviors reported that they frequently felt depressed, nervous, or anxious, did not have a strong social support network, and did not respond to difficulties through various coping strategies.

5.4 Implications for Professional Practice

The implications of the current study for professional practice are that the results will help to ensure that the psychological and sociological needs of military families are met. The conclusions of this study have contributed towards an increased understanding of the pivotal role of the military spouse and central tenets related to help-seeking and their mental well-being. Because several study variables (specifically rank of the spouse, poor mental health status, a higher degree of social support, and a more positive coping response to problems or difficulties) were found to be associated with the spouse's tendency for use of counseling services, relevant

programs may be tailored to optimize uptake of counseling services for military spouses who are most in need of such services. Furthermore, the results of this study have contributed new knowledge to the literature, and will inform future researchers interested in exploring the help-seeking behavior and well-being of military spouses.

5.5 Limitations of the Study

The interpretation of the results of this study was compromised by (a) the inability to explain reasons why statistical associations were found between comfort seeking military-provided counseling services, mental health status, social support, coping, deployed status, rank, and gender; (b) the possibility of response bias; and (c) the inability to include the Stress Scale as a predictor of comfort seeking military-provided counseling services. This section discusses the reasons for the stated limitations.

5.5.1 Limitations of Cross-Sectional Survey Data

The major limitation of the statistical analysis of cross-sectional survey data is that inferential statistics do not allow the researcher to identify or explain any types of causal relationships between variables (Creswell, 2014). The adage that "correlation does not imply causation" applies to this study, meaning that systematic causes and effects cannot be concluded by use of inferential statistics (Pearl, 2009, p. 96). Because the dependent variable (i.e., comfort) was significantly correlated with, and predicted by, several other variables (i.e., mental health status, social support, coping, deployed status, and demographic characteristics) does not necessarily mean that the variance in the other variables was the root cause of the variance in the dependent variable.

In order to examine if the relationships between the variables measured in this study were causal, an experiment, based on the principles of a randomized controlled trial, would have to be

conducted (Giles, 2002). To conduct such an experiment, the researcher would have to: (a) randomly assign the participants into two groups, an experimental group (who were deployed) and a control group (who were not deployed); (b) manipulate the independent variables in some way (e.g., modify the participants' levels of social support and mental health status); and (c) determine the resultant effect of the manipulation on the comfort seeking military-provided counseling services of the participants. For practical, ethical, and logistical reasons, such an experiment could not be designed or implemented in practice.

The lack of accessibility to the complete dataset was also a major limitation. Without having the desired deployment variables "Is your spouse currently deployed?" and "Is your spouse currently deployed to a combat zone?" the study analyses presents issues with temporality. As an example, the spouse's reported mental health status may or may not be associated with the service member's deployment status. We are not able to examine these relationships because of data limitations.

Important demographic variables such as race/ethnicity, have children, age of spouse, branch of service, we were limited in our ability to examine potential relationships among these variables and the spouse's comfort in seeking military-provided counseling services.

5.5.2 Response Bias

A further limitation of the ADSS results is that response bias commonly distorts the data collected using self-report questionnaires (Paulhus, 1991). Response bias includes (a) socially desirable responding, when the respondents distort or fake their answers to questionnaire items in such a way as to over-emphasize appropriate behavior, such as help-seeking, and to under-emphasize adverse behavior, such as not help-seeking (Mortel, 2008); (b) extreme response bias, when the respondents consistently provide polarized answer patterns to questions, focusing only

on one extreme end of an item scale or the other; and (c) acquiescent response bias, when the respondents consistently endorse the agreement option in a Likert scale (Baron-Epel, 2005). It is not possible to evaluate how much the data collected in the ADSS were distorted by response bias. Response bias may possibly account for why the proportion of military spouses who reported comfort seeking military-provided counseling services (64.3%) in the ADSS was less than the proportion (70.0%) reported in a previous survey (Eaton, et al., 2008). Some participants in the ADSS may have been afraid to accurately report their comfort seeking military-provided counseling services because using military-provided services for counseling is associated with a socially undesirable stigma (Joseph & Afifi, 2010; Verdeli, et al., 2011; De Burgh et al., 2011).

5.5.3 The Stress Scale

The Stress Scale, an item in the ADSS, could not, for statistical reasons, be incorporated into the binary logistic regression models. The reason for this exclusion was multicollinearity. The highest reported levels of psychological stress were associated with participants whose spouses were deployed; had high levels of depression, nervousness, and anxiety; and had low levels of social support, as well as poor coping strategies. Female spouses and spouses with enlisted service members reported more stress than male spouses and spouses of officers. Due to its multicollinearity with all the other predictor variables, which would compromise the results (Hosmer and Lemeshow, 2000) the Stress Scale could not be incorporated as a predictor in the binary logistic regression analysis. Despite not being included in the regression models, the evidence based on the use of bivariate correlation analysis was consistent with the considerable body of research showing that high levels of stress are associated with mental health problems, as well as associated factors such different levels of social support and help-seeking among military spouses.

The statistically significant positive bivariate correlation between the Stress Scale and help-seeking behavior found in the current study supported previous research findings indicating that spouses are more stressed when the service member is deployed than not deployed (Burton et al., 2009; Everson et al., 2014; Mansfield, et al., 2010; Padden & Posey, 2013; Thomas de Burgh et al, 2011). The bivariate correlations of the Stress Scale with demographic factors, such as the rank of the service member and the gender of the spouse, were consistent with other studies (Everson et al., 2013; 2014) and explained why it was necessary to include the demographic variables in this study. The negative correlation between the Stress Scale and the Coping Scale was consistent with previous research indicating that military spouses who perceive their coping behaviors are effective, experience less stress during deployment (Blank et al., 2012). The negative correlation between the Stress Scale and the Social Support Index was consistent with Social Support Theory (Chronister et al., 2008), positing that when individuals are presented with a stressor, social support moderates the effect of stress.

5.6 Recommendations for Further Research

Further research is recommended to create empirical models that predict the help-seeking behavior of military spouses by means of a more modern and effective technique than binary logistic regression, which was developed over 50 years ago (Hosmer & Lemeshow, 2000). The researcher suggests that we explore other appropriate statistical techniques for future research on the factors predicting the comfort seeking military-provided counseling services of military spouses. Partial least squares structural equation modeling (PLS-SEM) is one such method. The advantages of PLS-SEM over regression analysis are that: (a) PLS-SEM does not attempt to fit the data to a pre-defined equation (e.g. a linear or logistic function) defined by one dependent variable and one or more independent variables; (b) PLS-SEM operates by attempting to optimize the

explained variance between endogenous and exogenous variables; (c) PLS-SEM is a non-parametric method, meaning that it is not sensitive to the distributional and measurement characteristics of the variables; (d) PLS-SEM is not sensitive to multicollinearity (because correlated variables can be combined into a chain or network); (e) PLS-SEM is an exploratory rather than a confirmatory method, meaning that it provides results that can be interpreted inductively, to generate hypotheses, rather than deductively, to test hypotheses (Hair, Hult, Ringle, & Sarstedt, 2014). The disadvantage of PLS-SEM is that, like regression analysis, it does not provide an explanation for causal relationships between variables, because it can only generate predictions.

SmartPLS (Wong, 2013) was used to construct the path diagram of the model depicted in Figure 9, which was devised by the researcher to explore some of the possible relationships between the variables collected in the ADSS. This is just one example of a large number of potential models that could potentially be explored using the variables collected in the ADSS.

The variables measured in the ADSS are represented in Figure 9 by oval symbols and the predictive relationships between pairs of variables are represented by arrows. There are no dependent and independent variables in PLS-SEM. The exogenous variables (rank, deployment, and gender) have no arrows directed into them. The endogenous variables (Stress Scale, Mental Health Status, Social Support Index, Coping Scale, and Comfort-Seeking Counseling Services do have arrows directed into them. The numbers next to the arrows are the path coefficients, or β weights, measuring the strengths and directions of the predictive relationships.
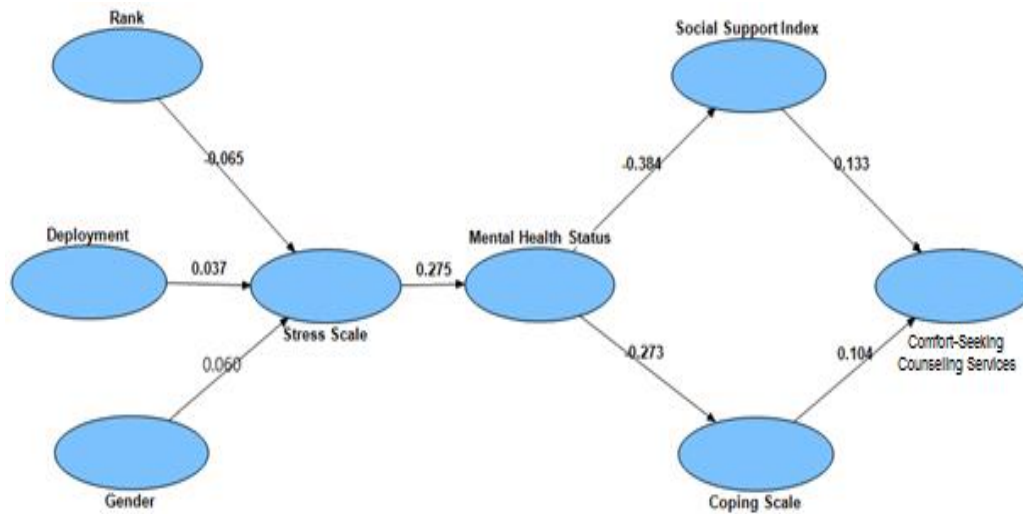
Figure 9. **Path diagram drawn using SmartPLS**

Figure 9. **Path diagram drawn using SmartPLS. First order correlations of the individual.**

The model in Figure 9 emphasizes the pivotal role of psychological stress, measured using the Stress Scale, which could not be identified using binary logistic regression. The spouses of officers were less likely to experience stress than the spouses of enlisted service members (β = -.065). The spouses of service members who have deployed were more likely to suffer stress than the spouses of service members who had not been deployed (β = .037). Female spouses were more likely to suffer from stress than males (β = .060). A high level of stress predicted a high level of depression and anxiety, measured using the Mental Health Index (β = .275).

The model in Figure 9 also supported the Transactional Model of Stress and Coping (TMSC) for evaluating processes of coping with stress (Lazarus & Folkman, 1984). The model predicts that when the participants are faced with a high level of psychological stress and feel anxious or depressed, some will find coping resources and social options in order to help reduce their levels of stress. The Mental Health Index negatively predicted both the Social Support Index

(β = -.384) and the Coping Scale (β = -.273). Participants with a high level of social support were more likely to report health seeking behavior (β = .133) and participants with positive coping strategies were more likely to report health seeking behavior (β = .104). The results of PLS-SEM are consistent with previous research on the military wives of deployed servicemen, revealing that positive coping strategies and social support are significantly related to decreased, depressive symptoms. Positive coping strategies and social support help to overcome stress and relieve barriers to help-seeking treatment (Dimiceli et al. 2010).

A limitation of PLS-SEM using SmartPLS is that before a model can be validated there must be statistical evidence to confirm the construct, convergent and discriminant validity, and internal consistency reliability of the endogenous variables (Wong, 2013; Hair et al., 2014); however, it was not possible to evaluate the validity and reliability of the endogenous variables in Figure 9 because this analysis requires the variables to be operationalized using multiple item scores. Two of the most important endogenous variables in Figure 9 were measured using single items in the ADSS, specifically the Stress Scale and the Comfort-Seeking Counseling Services.

Although correlations are depicted in both analyses, the correlations between the variables in Table 4 (p.52) and Figure 9 are not consistent because they were calculated using completely different mathematical formulae. The path diagram with PLS path coefficients reflects the correlations between pairs of variables computed by PLS, which is a measure of the strength and direction of the adjusted correlation between two variables after the effects of their correlation with one or more other variables in the same matrix are controlled (i.e., eliminated or partialed out). The PLS path coefficients in Figure 9 were not calculated with a formula based on the covariance, but were calculated by iteration, with a formula to optimize the explained variance, using the scores computed by composite factor analysis (Hair et al., 2014). Table 4 presents a

matrix of Spearman's *rho* bivariate correlation coefficients computed by SPSS using a formula based on the covariance. Bivariate correlation analysis measures the strength of the association between two variables and (Hair, Hult, Ringle, & & Sarstedt, 2014) does not take into account the multivariate correlations between all the variables in the matrix.

The Stress Scale used in the ADSS was restricted to measuring the psychological stress levels of the respondents with a single item measure, using a 5-point response scale, so its validity and reliability could not be evaluated. There is controversy in the literature as to whether or not single item measures are reliable indicators of emotional states (Littman, White, Satia, Bowen, & Kristal, 2006; Zimmerman, Ruggero, Chelminski, Young, Posternak et al. 2006; Moss, 2016). In future research to measure the psychological stress levels of military spouses, it is recommended that an instrument should be administered with validated psychometric properties, containing a wide variety of items that measure the multiple dimensions of stress, such as the revised version of the Occupational Stress Inventory (Hicks, Bahr, & Fujiwara, 2014).

Even if a new empirical model could be constructed with PLS-SEM using validated endogenous variables, this model could only predict how but not why some of the military spouses, when faced with stress, and felt anxious or depressed, found coping resources and social options, whereas others failed to do so. With reference to the demographic variables gender and rank, the near significant p values of the former suggest further exploration is warranted. Future plans are to run unadjusted odds ratios for gender and rank on the spouse's comfort in seeking military provided counseling services.

A qualitative research design could also provide deeper insights by exploring the themes emerging from the actual lived experiences of each individual (Merriam, 2014); however, this

could take a lot more time, effort, and resources to implement than the collection and statistical

analysis of quantitative data using a self-report survey.

5.7 General Conclusions

A survey of 10,574 military spouses conducted in 2012 revealed that 6,800 (64.3%) were

comfortable in seeking military-provided services for counseling. A demographic depiction of the

larger eligible population is listed in Table 14.

Table 14. Demographic Comparison among Military, Survey, and Study Samples

Variable	Population	Survey sample	% of population	Study sample	% of survey sample
Total number (married military members)	931,879	65,000	6%	10,574	16%
Officer	192,704	11,524	6%	3,055	26%
Enlisted	739,175	53,456	7%	7,519	14%
Female spouse (married to male service member)	820,053	55,567	7%	7,461	13%
Male spouse (married to female service member)	111,825	9,433	8%	3113	33%

Binary logistic regression was applied to identify the predictors of comfort seeking

military-provided counseling services. The statistically significant predictors of comfort seeking

military-provided counseling services included positive coping strategies, mental health status, a

high level of social support, and the rank of the spouse's serving member. The level of

psychological stress of the spouses was found to be multicollinear with all the predictors of help-

seeking behavior. The results were consistent with previous studies to identify the predictors and

the outcomes of stress in military spouses, and supported the Transactional Model of Stress and

Coping. The practical significance of the results is that they will help relevant programs to be

tailored to optimize uptake of counseling services for military spouses who are most in need of

such services.

The interpretation of the results of this study was compromised by (a) the inability of the statistical analysis to explain the root causes of comfort seeking military-provided counseling services; (b) the possibility of response bias due to the use of self-reported measures; and (c) the inability to include the Stress Scale as a predictor of comfort seeking military-provided counseling services behavior. Future research is recommended, using partial least structural equation modeling (PLS-SEM) incorporating measures of psychological stress, in order to predict with more intensive detail the comfort seeking military-provided counseling services of military spouses. Using military spouse websites to conduct online surveys can provide a more complete dataset constructed from the desired instrument items. Qualitative research involving face-to-face interviews with military spouses may provide deeper insights to explain why some military spouses are comfortable seeking military-provided counseling services and others are not. Finally, at the time this research was conducted, the 2012 ADSS was the most current publicly available ADSS dataset. Since that time, iterations of the ADSS were administered in 2015 and 2016. These datasets have not been released for public use, but future plans include conducting longitudinal studies to analyze the study's findings over the four-year period.

Appendix A.

Family Crisis Oriented Personal Evaluation Scale (F-COPES).

Survey Item #57a-u. F-COPES measures the extent that coping and problem solving strategies are employed by families during challenging life situations. Each item is rated on a 1 to 5 scale. Scores are reported as a single figure, which is the average of the individual scores. Items #57 r and t are reverse-coded in the construction of the overall score. A higher total score indicates better ability to cope with stressful situations.

Indicate how well each statement describes your family. When we face problems or difficulties in our family, we respond by:

a. Sharing our difficulties with relatives

b. Seeking encouragement and support from friends

c. Knowing we have power to solve major problems

d. Seeking information and advice from other families who have faced similar problems

e. Seeking advice from relatives

f. Seeking assistance from community programs designed to help families in our situation

g. Accepting gifts and favors from neighbors (e.g., food, taking in the mail)

h. Seeking information and advice from our family doctor

i. Asking neighbors for advice and assistance

j. Attending religious/spiritual services

k. Accepting stressful events as a fact of life

l. Exercising to stay fit and reduce tension

m. Accepting that difficulties occur unexpectedly

n. Seeking professional counseling and help for family difficulties

o. Believing we can handle our own problems

p. Participating in religious/spiritual activities

q. Defining the family problem in a more positive way so that we do not become too discouraged

r. Feeling that no matter what we do to prepare, we will always have difficulty handling problems

s. Seeking advice from a military chaplain/civilian religious leader

t. Believing if we wait long enough, the problem will go away

u. Sharing problems with neighbors

F-COPES Sub-factors.

Acquiring Social Support: Constructed from Q57 a, b, e, g, i and u. Sub-factor of F-COPES. Measures an individual's use of family and/or friends in times of crisis.

Reframing: Constructed from Q57 c, k, m, o, and q. Sub-factor of F-COPES. Measures an individual's ability to view a difficult situation in a more positive way or by accepting difficulties as a part of life.

Seeking Spiritual Support: Constructed from Q57 j, p, and s. Sub-factor of F-COPES. Measures an individual's use of spiritual resources (e.g. church, temple) and/or the use of spiritual advisors (e.g. church-based counseling) during difficult times.

Mobilizing to Acquire and Accept Help: Constructed from Q57 d, f, h, and n. Sub-factor of F-COPES. Measures an individual's ability to cope with difficulties by seeking out and accepting help from others (e.g. friends, health providers).

Passive Appraisal: Constructed from Q57 r and t. Sub-factor of F-COPES. Measures an individual's inability to cope with difficult situations or crises due to an avoidant interpretation of the challenging situation (e.g. believing if they wait long enough, the problem will go away).

Appendix B.

Social Support Index.

Survey Item #70 a-r. Captures the degree to which spouses have a community or network of people, other than their spouse, who they can depend on and who can provide companionship and assistance. Each item is rated on a 1 to 5 scale. Scores are reported as a single figure, which is the average of the individual scores (range 1 to 5). A higher total score indicates greater perceived support.

There are four sub-factors:

Community as a Source of Support (b, e, g, l, n)

Measures an individual's belief that the community offers supportive resources during difficult times and that individuals feel secure living in the community:

b. If I had an emergency, even people I do not know in this community would be willing to help

e. People here know they can get help from the community if they are in trouble

g. People can depend on each other in this community

l. Living in this community gives me a secure feeling

n. There is a feeling in this community that people should not get too friendly with each other

Emotional, Esteem, and Friendship Network (f, i, p, q)

f. I have friends who let me know they value who I am and what I can do

i. My friends in this community are a part of my everyday activities

p. I feel secure that I am as important to my friends as they are to me

q. I have some very close friends outside the family who I know really care for me and love me

Family Community Connection (h, j, k, o, r)

h. Members of my family seldom listen to my problems or concerns: I usually feel criticized.

j. There are times when family members do things that make other members unhappy.

k. I need to be very careful how much I do for my friends because they take advantage of me

o. This is not a very good community to bring children up in

r. Members of my family do not seem to understand me; I feel taken for granted

Family Affection and Commitment (a, c, d, m)

a. Generally speaking, I would describe my family as a strong, happy, family.

c. I feel good about myself when I sacrifice and give time and energy to members of my family

d. The things I do for members of my family and they do for me make me feel part of this very important group

m. The members of my family make an effort to show they love and have affection for me

Q70 h, j, k, n, o, & r are reverse-coded in both construction of subfactors and the construction of the overall score.

Appendix C.

Patient Health Questionnaire for Depression and Anxiety (PHQ-4)

Survey Item #56. Over the <u>last 2 weeks</u>, how often you been bothered by the following problems? *(Use "✔" to indicate your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Little interest or pleasure in doing things	0	1	2	3
4. Feeling down, depressed, or hopeless	0	1	2	3

<u>Scoring</u>

PHQ-4 total score ranges from 0 to 12, with categories of psychological distress being:

- None   0-2
- Mild   3-5
- Moderate   6-8
- Severe   9-12

Anxiety subscale = sum of items 1 and 2 (score range, 0 to 6)

Depression subscale = sum of items 3 and 4 (score range, 0 to 6)

On each subscale, a score of 3 or greater is considered positive for screening purposes

Appendix D.

Stress Scale.

Survey Item #55. The Stress Scale was measured using a single item: Overall, how would you rate the current level of stress in your personal life?

The 5-point response was:

1 = Much less than usual

2 = Less than usual

3 = About the same as usual

4 = More than usual

5 = Much more than usual

Because it is a single item measure, the reliability of the Stress Scale could not be estimated.

Appendix E.

UNIVERSITY OF MARYLAND

INSTITUTIONAL REVIEW BOARD

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DATE: December 9, 2015

TO: Christye Brown, MPH, MBA
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [333760-1] Exploring Predictors of Military Spouses' Utilization of Counseling Services

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: December 9, 2015

REVIEW CATEGORY: Exemption category #4

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

- 1 -   Generated on IRBNet

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