The Impact of Deployment on Navy Families: Mitigators, Mediators, and Moderators of Parenting Stress

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Abstract

The current global geopolitical environment has necessitated more frequent, and lengthier, deployments by the U.S. military. Many service members today are married, with or without children, and these deployments affect all members of the military family. A qualitative metasynthesis looked at the military family as a whole, showing the potential for heightened emotional responses for all family members throughout the deployment cycle, and especially in reintegration. The quantitative research study looked at parenting stress in Navy active duty fathers, while concurrently evaluating PTSD, depression, and deployment factors. The results showed that as deployment factors increased, parenting stress increased for fathers in the reintegration period, with a potential mediation effect of depression. This research study also evaluated spirituality and social support in both civilian mothers and active duty fathers who had experienced a recent Navy deployment. The results showed that spirituality and social support mitigated parenting stress: as spirituality and social support scores increased, parenting stress scores decreased significantly for both mothers and fathers. Also, spirituality was found to be a significant moderator of the relationship between deployment factors and parenting stress in Navy fathers. This dissertation research sheds light on the impact of deployment on Navy families, and suggests avenues for intervention and support with these families.

Dedication

This dissertation journey has been a long, arduous, thrilling, and exciting adventure. I am so grateful to have enjoyed this opportunity. My family has been with me every step of the way - Naomi, Joseph, Benjamin, and Michael - they make my life exceptional always, and I would be a sad sack without them. This dissertation is dedicated to them specifically - they are MY military family!

And this dissertation is globally dedicated to the broader military family: theirs is not an easy life, and the inevitable hardships they endure are not always visible to the naked eye. I hope this dissertation makes visible some ways in which all of us can be of help and support to the military families among us.

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The University of Virginia is an amazing educational institution, and I feel incredibly lucky to have studied here, and to have taken classes across grounds. Within the Department of Nursing, from the faculty to the support staff, every single person was always happy to help me whenever I needed assistance. I could not have asked for a better experience. The members of my dissertation committee are amazing women all, and have given freely of their time and wisdom to guide me along. Thank you so much to each of you: Dr. Edie Barbero, Dr. Jeanita Richardson, and Dr. Guofen Yan. My dissertation chair, and my advisor for the past four years, Dr. Linda Bullock, has been wonderful in every way. She is a whirlwind of energy, and nothing is insurmountable with her

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And as a parent, I must also thank the many different people throughout these past four years who have loved and cared for my children when I was slogging through classes, or in the field doing research, or in my cubicle analyzing and interpreting my data. Without the gift of these caring and exceptional individuals, I would not have been able to complete this degree, and I thank all of them from the bottom of my heart. Including my dear husband, Michael.

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Chapter I

Introduction

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The current global geopolitical environment is defined by instability in multiple international regions. This has necessitated increased utilization of the United States military in both combat and peacekeeping roles around the world. Active duty service members have been called upon to leave their homes and families, and to deploy to areas of unrest. Over time, these deployments have become more frequent, and have become longer in duration (Fellman, 2013; Hosek, 2011; U.S. Army, 2010). There are currently around 200,000 military service members deployed on land or afloat (Defense Manpower Data Center, 2012; Department of the Navy, 2013).

When a service member is away on deployment, they are exposed to many different stressors – from being in a different, and oftentimes unfamiliar, environment, to being away from home and family, to learning necessary new skills and training in the deployed environment, to the increased threat of disability or death (Hinojosa & Hinojosa, 2011; Scannell-Desch & Doherty, 2010; Schachman, 2010). There is also the stress inherent within a military organization: service members are expected to adhere to a hierarchical rank structure, and rigorous physical and personal behavior standards; breaches of standards can lead to disciplinary action and/or discharge from service (Maclean & Edwards, 2010; Wadsworth & Southwell, 2011). There exist also the everyday job stresses that translate from work on-base in a safe and familiar environment, to work in a deployed environment. After up to a year of being deployed and handling these stresses on a day-to-day basis, the military member will return

home at the end of their tour of duty – unless they return home earlier because of disability or death.

Much research has been done with the military population who experience deployment, in terms of investigating psychosocial and physical health sequelae that may result from deployment scenarios. Psychosocial sequelae include risk for anxiety, depression, and PTSD (Armistead-Jehle, Johnston, Wade, & Ecklund, 2011; Bray et al., 2010; Booth-Kewley, Highfill-Roy, Larson, Garland, & Gaskin, 2012). Physical health sequelae include risk for traumatic brain injury, bodily harm, or death (Kaplow, Layne, Saltzman, Cozza, & Pynoos, 2013; Lamorie, 2011; Levy & Sidel, 2013; MacGregor et al., 2010). In a survey of 2,000 personnel from all branches who had served in Iraq and Afghanistan, almost 20% met criteria for possible PTSD or depression (Tanielian & Jaycox, 2008). Of those returning from deployment in the past six months, 18% reported having experienced serious interpersonal conflict with their spouse, family members, close friends and/or co-workers (Gibbs, Clinton-Sherrod, & Johnson, 2012). Married service members who had deployed between 2003 and 2009 showed a decline in their reported marital quality over time, and increased rates of intention towards separation/divorce (Riviere, Merrill, Thomas, Wilk, & Bliese, 2012). Rates of experiencing high family stress were significantly increased among service members who had deployed as opposed to their non-deployed counterparts (Bray et al., 2010). Those most at risk for psychosocial sequelae after deployment exposure have been young junior enlisted service

members (Hoge et al., 2008; Lester et al., 2010; Mulligan et al., 2010), with high combat exposure (Hoge, Auchterlonie & Milliken, 2006; Sareen et al., 2007; Street, Vogt & Dutra, 2009).

Research looking at the adaptation of the family unit to these deployment disruptions has been sparse by comparison. There are over 1.4 million current active duty members, associated with more than 1.9 million family members; the majority of the active duty population is married and most have children under the age of six (U.S. Department of Defense, 2013). Research has shown evidence of depression, anxiety, and a sense of overwhelming burden for the home front spouse during deployment (Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Huebner, Mancini, Wilcox, Grass, & Grass, 2007; Lara-Cinisomo et al., 2012; Mansfield et al., 2010). For children, there is evidence of increased behavioral and mental health visits while their parent is deployed (Barker & Berry, 2009; Gorman, Eide, & Hisle-Gorman, 2010; Mansfield, Kaufman, Engel, & Gaynes, 2011), and child maltreatment rates are also increased during this separation (Gibbs, Martin, Kupper, & Johnson, 2007). Children's ability to cope with a parent's deployment is mediated by the mental health and coping skills of the non-deployed parent (White, de Burgh, Fear, & Iversen, 2011). If the at-home parent is showing signs of depression or increased anxiety related to a deployment, children score higher on scales of psychological distress and problem behaviors (Lester et al., 2010). Other research shows children becoming co-parents to siblings during the parental deployment, and taking on

increasingly mature roles during this time (Chandra, Martin, Hawkins, & Richardson, 2010; Huebner et al., 2007; Mmari, Roche, Sudhinaraset, & Blum, 2009). Negative psychosocial sequelae persisted following the return of the deployed parent (Chandra et al., 2010), suggesting that the effects, and the after-effects, of deployment separation may have long-term consequences on families in terms of parenting, and subsequent child outcomes.

Military family functioning upon reintegration of the deployed service member is a nascent area of research. Both psychosocial and physical health injuries of the deployed service member may have far-reaching effects on all members of the family, especially in young children. Looking at the characteristics of families within the literature, there are very few studies that look at the majority demographic of parents of young children under age six. This is a real concern, as these children are much more dependent on the quality care of their parents, and parents of children in this age range show higher normative parenting stress than parents of children aged six to twelve (Abidin, 2012). Consensus recommendations have been published to help guide research in the area of operational stress, defined as stress resulting from instantaneous or cumulative exposure to military operations, military training, or military life (Nash et al., 2010). The expert authors of this document note the lack of information on families of deployed service members, and advocate for more research in this topic area. Operational stress research has looked at the effects of deployment on active duty members, spouses, and children (usually as

individuals, separated from the family context), but there has been very little emphasis on the relationship of operational stress to parenting. Recent wartime deployments have been stressful for service members; there is evidence that families have felt the stress in equal measure. What is the best way to support all members of the family unit as they meet the challenges of military service?

This first chapter is the *Introduction*, providing background information on what the research to-date indicates about the effects of deployments on military families, and why this topic was considered worthy of further research. The second chapter, entitled *Hard is Normal: Family Transitions Within the Deployment Cycle*, presents a qualitative metasynthesis describing key themes relevant to families going through the deployment cycle. Chapter 3, entitled *Link Between Deployment Factors and Parenting Stress in Navy Families* was the basis for the TriService Nursing Research Program Graduate Award Grant Application. This chapter presents the theoretical framework for the study, describes justification for the study and the selected variables, and presents an overview of the study methods. The fourth chapter, *Parenting Stress After Deployment in Navy Active Duty Fathers*, and the fifth chapter, *Parenting Stress in Navy Families: The Importance of Spirituality and Social Support*, present findings from the study. Chapter 6 is the *Conclusion* that summarizes the research findings, addresses the relevance of these findings to research and clinical practice, and suggests directions for future investigation.

References

Abidin, R. R. (2012). *Parenting Stress Index, fourth edition: Professional manual*. Odessa, FL: Psychological Assessment Resources.

Armistead-Jehle, P., Johnston, S. L., Wade, N. G., & Ecklund, C. J. (2011). Posttraumatic stress in U.S. Marines: The role of unit cohesion and combat exposure. *Journal of Counseling & Development*, *89*(1), 81-88.

Barker, L. H., & Berry, K. D. (2009). Developmental issues impacting military families with young children during single and multiple deployments. *Military Medicine*, *174*(10), 1033-1040.

Booth-Kewley, S., Highfill-McRoy, R., Larson, G., Garland, C., & Gaskin, T. (2012). Anxiety and depression in Marines sent to war in Iraq and Afghanistan. *Journal of Nervous Mental Disease*, *200*(9), 749-757. doi:10.1097/NMD.0b013e318266b7e7

Bray, R., M., Pemberton, M., R., Lane, M., E., Hourani, L., L., Mattiko, M., J., & Babeu, L., A. (2010). Substance use and mental health trends among U.S. military active duty personnel: Key findings from the 2008 DoD Health Behavior Survey. *Military Medicine*, *175*(6), 390-399.

Chandra, A., Martin, L. T., Hawkins, S. A., & Richardson, A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. *Journal of Adolescent Health*, *46*(3), 218-223. doi:10.1016/j.jadohealth.2009.10.009

Defense Manpower Data Center. (2012). *DoD personnel and military casualty statistics – December 31, 2011*. Retrieved June 1, 2013 from http://siadapp.dmdc.osd.mil/personnel/MILITARY/miltop.htm

Department of the Navy. (2013). Status of the Navy. Retrieved 01 June, 2013 from http://www.navy.mil/navydata/nav_legacy.asp?id=146

Faber, A. J., Willerton, E., Clymer, S. R., MacDermid, S. M., & Weiss, H. M. (2008). Ambiguous absence, ambiguous presence: A qualitative study of military reserve families in wartime. *Journal of Family Psychology*, *22*(2), 222-230. doi:10.1037/0893-3200.22.2.222

Fellman, S. (2012). 8-month deployments become the 'new norm.'. *Navy Times*. Retrieved from http://archive.navytimes.com/article/20131202/NEWS/312020005/8-month-deployments-become-new-norm-

Gibbs, D. A., Clinton-Sherrod, A. M., & Johnson, R. E. (2012). Interpersonal conflict and referrals to counseling among married soldiers following return from deployment. *Military Medicine*, *177*(10), 1178-1183.

Gibbs, D. A., Martin, S. L., Kupper, L. L., & Johnson, R. E. (2007). Child maltreatment in enlisted soldiers' families during combat-related deployments. *Journal of the American Medical Association*, *298*(5), 528-535.

Gorman, G. H., Eide, M., & Hisle-Gorman, E. (2010). Wartime military deployment and increased pediatric mental and behavioral health complaints. *Pediatrics*, *126*(6), 1058-1066. doi:10.1542/peds.2009-2856

Hinojosa, R., & Hinojosa, M. S. (2011). Using military friendships to optimize postdeployment reintegration for male Operation Iraqi Freedom/Operation Enduring Freedom veterans. *Journal of Rehabilitation Research and Development*, *48*(10), 1145-1158. doi:10.1682/JRRD.2010.08.0151

Hoge, C. W., Auchterlonie, J. L., & Milliken, C. S. (2006). Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *Journal of the American Medical Association*, *295*(9), 1023-1032.

Hoge, C., W., McGurk, D., Thomas, J., L., Cox, A., L., Engel, C., C., & Castro, C., A. (2008). Mild traumatic brain injury in U.S. Soldiers returning from Iraq. *New England Journal of Medicine*, *358*(5), 453-463.

Hosek, J. (2011). *How is deployment to Iraq and Afghanistan affecting U.S. service members and their families? An overview of early RAND research on the topic.* RAND: National Defense Research Institute. Retrieved from http://www.rand.org/content/dam/rand/pubs/occasional_papers/2011/RAND_OP316.pdf

Huebner, A. J., Mancini, J. A., Wilcox, R. M., Grass, S. R., & Grass, G. A. (2007). Parental deployment and youth in military families: Exploring uncertainty and ambiguous loss. *Family Relations*, *56*(2), 112-122.

Kaplow, J. B., Layne, C. M., Saltzman, W. R., Cozza, S. J., & Pynoos, R. S. (2013). Using multidimensional grief theory to explore the effects of deployment,

reintegration, and death on military youth and families. *Clinical Child and Family Psychology Review*, *16*(3), 322-340. doi:10.1007/s10567-013-0143-1

Lamorie, J. H. (2011). Operation Iraqi Freedom/Operation Enduring Freedom: Exploring wartime death and bereavement. *Social Work in Health Care*, *50*(7), 543-563. doi:10.1080/00981389.2010.532050

Lara-Cinisomo, S., Chandra, A., Burns, R. M., Jaycox, L. H., Tanielian, T., Ruder, T., & Han, B. (2012). A mixed-method approach to understanding the experiences of non-deployed military caregivers. *Maternal and Child Health Journal*, *16*(2), 374-384. doi:10.1007/s10995-011-0772-2

Lester, P., Peterson, K., Reeves, J., Knauss, L., Glover, D., Mogil, C., ... Beardslee, W. (2010). The long war and parental combat deployment: Effects on military children and at-home spouses. *Journal of the American Academy of Child & Adolescent Psychiatry*, *49*(4), 310-320.

Levy, B. S., & Sidel, V. W. (2013). Adverse health consequences of the Iraq War. *Lancet*, *381*(9870), 949-958.

MacGregor, A., J., Shaffer, R., A., Dougherty, A., L., Galarneau, M., R., Raman, R., Baker, D., G., ... Corson, K., S. (2010). Prevalence and psychological correlates of traumatic brain injury in Operation Iraqi Freedom. *Journal of Head Trauma Rehabilitation*, *25*(1), 1-8.

Maclean, A., & Edwards, R. D. (2010). The pervasive role of rank in the health of U.S. veterans. *Armed Forces and Society*, *36*(5), 765-785. doi:10.1177/0095327X09356166

Mansfield, A. J., Kaufman, J. S., Engel, C. C., & Gaynes, B. N. (2011). Deployment and mental health diagnoses among children of US Army personnel. *Archives of Pediatrics & Adolescent Medicine*, *165*(11), 999-1005. doi:10.1001/archpediatrics.2011.123

Mansfield, A. J., Kaufman, J. S., Marshall, S. W., Gaynes, B. N., Morrissey, J. P., & Engel, C. C. (2010). Deployment and the use of mental health services among U.S. Army wives. *New England Journal of Medicine*, *362*(2), 101-109.

Mmari, K., Roche, K. M., Sudhinaraset, M., & Blum, R. (2009). When a parent goes off to war: Exploring the issues faced by adolescents and their families. *Youth & Society*, *40*(4), 455-475. doi:10.1177/0044118X08327873

Mulligan, K., Jones, N., Woodhead, C., Davies, M., Wessely, S., & Greenberg, N. (2010). Mental health of UK military personnel while on deployment in Iraq. *British Journal of Psychiatry*, *197*, 405-410. doi:10.1192/bjp.bp.110.077263

Nash, W. P., Vasterling, J., Ewing-Cobbs, L., Horn, S., Gaskin, T., Golden, J., ... Baker, D. G. (2010). Consensus recommendations for common data elements for operational stress research and surveillance: Report of a federal interagency working group. *Archives of Physical Medicine & Rehabilitation*, *91*(11), 1673-1683. doi:10.1016/j.apmr.2010.06.035

Riviere, L. A., Merrill, J. C., Thomas, J. L., Wilk, J. E., & Bliese, P. D. (2012). 2003-2009 marital functioning trends among U.S. enlisted soldiers following combat deployments. *Military Medicine*, *177*(10), 1169-1177.

Sareen, J., Cox, B. J., Afifi, T. O., Stein, M. B., Belik, S. L., Meadows, G., & Asmundson, G. J. (2007). Combat and peacekeeping operations in relation to prevalence of mental disorders and perceived need for mental health care: Findings from a large representative sample of military personnel. *Archives of General Psychiatry*, *64*(7), 843-852.

Scannell-Desch, E., & Doherty, M. E. (2010). Experiences of U.S. military nurses in the Iraq and Afghanistan wars, 2003-2009. *Journal of Nursing Scholarship*, *42*(1), 3-12. doi:10.1111/j.1547-5069.2009.01329.x

Schachman, K. A. (2010). Online fathering: The experience of first-time fatherhood in combat-deployed troops. *Nursing Research*, *59*(1), 11-17.

Street, A. E., Vogt, D., & Dutra, L. (2009). A new generation of women veterans: Stressors faced by women deployed to Iraq and Afghanistan. *Clinical Psychology Review*, *29*(8), 685-694. doi:10.1016/j.cpr.2009.08.007

Tanielian, T., & Jaycox, L. H. (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery*. RAND: Center for Military Health Policy Research. Retrieved from http://www.rand.org/pubs/monographs/MG720.html

U.S. Army. (2010). *Health promotion, risk reduction, suicide prevention*. Retrieved from http://csf.army.mil/downloads/HP-RR-SPReport2010.pdf

U.S. Department of Defense. (2013). 2012 Demographics Profile of the Military Community. Retrieved from

http://www.militaryonesource.mil/12038/MOS/Reports/2012_Demographics_Report.pdf

Wadsworth, S. M., & Southwell, K. (2011). Military families: Extreme work and extreme "work-family". *The ANNALS of the American Academy of Political and Social Science*, *638*(1), 163-183. doi:10.1177/0002716211416445

White, C. J., de Burgh, H. T., Fear, N. T., & Iversen, A. C. (2011). The impact of deployment to Iraq or Afghanistan on military children: A review of the literature. *International Review of Psychiatry*, *23*(2), 210-217. doi:10.3109/09540261.2011.560143

Chapter II

Hard is Normal:

Family Transitions in the Deployment Cycle

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Introduction

The effect of deployment on the military family is extensive, impacting families as a holistic unit. Deployment is defined as a military member being sent away from his/her stateside home to a location outside of the United States for an extended period of duty (U.S. Department of Defense, 2010a; U.S. Military Personnel Manual, 2003). It is estimated that there are over 1.4 million current active duty members, associated with more than 1.9 million family members (U.S. Department of Defense, 2013). Over one half of military service members are married, and of those with children, 42.3% are under the age of six (U.S. Department of Defense, 2013). There are currently more than 200,000 military members deployed either on land or afloat (Defense Manpower Data Center, 2012; Department of the Navy, 2013). According to the U.S. Department of Defense (2010b), approximately 1 million active duty parents have deployed to Iraq and Afghanistan, and "48 percent served at least two tours" (p.9).

Stresses associated with deployment can include, but are not limited to, involuntary enlistment extension, longer lengths of deployment, and decreased time with the family (Wool & Messinger, 2012). Military service members specifically deployed to combat zones endure additional mental and physical hardship, and various studies have documented the increased risk for negative mental health outcomes (for example, depression, anxiety, post-traumatic stress disorder) in the deployed active duty member (Armistead-Jehle, Johnston, Wade, & Ecklund, 2011; Booth-Kewley, Highfill-McRoy, Larson, Garland, & Gaskin,

2012; Mulligan et al., 2010). Stresses are not confined to military service members only.

The partners and children of deployed service members may experience significant emotional, physical, and psychological strain from the experience of having a loved one deploy. Studies with military spouses experiencing deployment have found various emotional or mental concerns (Davis, Ward, & Storm, 2011; Hosek, 2011; Mansfield et al., 2010), an overwhelming feeling of responsibility for the running of the household (Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Lapp et al., 2010; Lara-Cinisomo et al., 2012), and increased concerns about the children's health and well-being while the military spouse is away (Chartrand, Frank, White, & Shope, 2008; Eskin, 2011; Hosek, 2011). There is evidence that children also have increased behavioral and mental health visits while their parent is deployed (Barker & Berry, 2009; Gorman, Eide, & Hisle-Gorman, 2010; Mansfield, Kaufman, Engel, & Gaynes, 2011). Numerous studies show an association between negative mental health outcomes in the active duty (AD) member, and increased family dysfunction upon return from deployment (Allen, Rhoades, Stanley, & Markman, 2010; Sayers, Farrow, Ross, & Oslin, 2009; Tsai, Harpaz-Rotem, Pietrzak, & Southwick, 2012). These factors indicate that deployment impacts all members of the family.

Though there have been studies focusing on the deployment process from different perspectives, there is a relatively little available research about the family as a whole unit of analysis. Because deployment can have significant

effects on everyone within the family, the authors wanted to better understand what the deployment experience was like for the whole family. Qualitative research provides a process through which outsiders can come to understand the complex experiences of family members from multiple standpoints. As a result, the authors undertook a qualitative metasynthesis, whose aim was to describe key themes relevant to families going through the deployment cycle.

Methods

Qualitative metasynthesis as defined by Sandelowski and Barroso (2007) is a method of systematically evaluating, integrating, and explaining the findings of qualitative reports on "a target event or experience (p.152)." A research synthesis study gathers in one place all of the information uncovered about a topic, from which determinations can be made about practice implementation strategies, and/or ideas about future research can be generated. The authors followed the methods outlined by Sandelowski and Barroso for this metasynthesis study.

Search Strategy and Retrieval

A search of OVID Medline was conducted using the following terms: war, combat disorders, combat, military personnel, veterans, reintegration, deployment. This resulted in 66,285 articles retrieved between 2012 and 2014. Another search in the same database used the following terms: mother-child relations, father-child relations, single-parent family, mothers, fathers, parents, parent-child relations, family, marriage, and child rearing. This search resulted

in 220,154 articles found. Using the "AND" command to combine these two searches resulted in 1,523 articles retrieved. Using limits to the English language, and articles published after 2004, the field was again narrowed to 571 citations. Exclusion criteria included parents unaffiliated with the military in any way, subject matter unrelated to family, parenting, or relationship issues, and subject matter unrelated to separation of families or deployment. After examining article titles, as well as abstracts, a total of 169 articles were kept for general relevance to the topic of interest. Of these 169, twenty-four used a qualitative methodology. Similar searches were also run in the following databases: PsycInfo, Social Services Abstracts, Sociological Abstracts, ERIC, ASSIA, and PILOTS: Published International Literature on Traumatic Stress, resulting in five further qualitative studies which were added to the analysis.

Evaluating Reports & Extracting Findings

Using the framework suggested by Sandelowski and Barroso (2007), each of the 29 articles was evaluated for inclusion in the metasynthesis by the researchers. The researchers met periodically to review and discuss findings. Each article was outlined in tabular format, to be better able to determine eligibility for inclusion. At this stage, four articles were excluded because of a lack of findings (e.g. narrative style with no specific analysis of data) or because the findings were not consistent with inclusion within a metasynthesis (e.g. a topical survey where data is quantitatively inventoried). This resulted in a total of 25 reports in the final sample.

The researchers extracted the findings verbatim from the original reports, and collated them into one document, resulting in 2,923 sentences. More specifically, pertinent quotes to the topic of interest were then separated out into another document, resulting in 1,205 edited sentences. A process of open coding was then initiated where sentences were classified into one of 115 edited meaning statements. Of the 25 total reports, 25 contributed to 115 edited statements on the topic of families' response to various stages of deployment.

With this topic, there can be many confounding variables, most notably the experience of serious physical injury for the active duty (AD) member on deployment. This experience can markedly increase stressors for both the AD member, and the family. Of the reports in this metasynthesis, two studies (with overlapping samples) specifically mentioned exclusion criteria for those with serious injuries (Hinojosa & Hinojosa, 2011; Hinojosa, Hinojosa & Hognas, 2012), and two others noted that AD participants had sustained no more than minor injuries (Lapp et al., 2010; Marnocha, 2012). At least two studies looked at those with PTSD (Hayes et al., 2010; Ray & Vanstone, 2009), but most did not address serious physical injury as an exclusion criteria. Many of the studies were face-to-face interviews or focus groups, and if serious physical injury was encountered, the researchers did not remark upon this within their reports.

Profile of the Reports

All of the reports but one were published in peer-reviewed journals; the one exception was a book chapter. The majority of articles (28%) were found in the nursing research literature. Just under twenty-five percent of the articles were found within mental health journals; 20% were in journals focused on communication both within and outside of families; journals looking at general health issues across the lifespan contributed just over fifteen percent of publications to the metasynthesis. Publications that focused exclusively on military populations contributed three reports to the metasynthesis.

The research questions posed within all of the reports were diverse, but the majority (56%) focused on two areas in equal measure: the experience of deployment and reunion for the AD service member, and the experience of deployment and reunion for the spouse of the deployed AD member. Sixteen percent of reports looked at the impact of deployment on both partners of the marital dyad, and an equal number of reports looked at the impact of deployment on the family system. Three reports investigated the impact of deployment as it affected children.

A theoretical framework in relation to the topic of study was discussed in 56% of the literature. Theoretical frameworks were mostly based on family theories (e.g. family systems theory, paternal involvement framework), or theories related to stress, loss, and trauma (e.g. stress and coping model, ambiguous loss theory, adaptation to traumatic stress model). The majority of

reports were based on interviews (n=16), and of those which reported a theoretical framework for their methodology, most used phenomenology (n=6), followed by grounded theory (n=2), and action research (n=1).

The reported sample sizes ranged from 4 to 259 participants, with a mean sample size of 41.5 (±56.3). The total reported sample across all reports (excluding participants from duplicate or overlapping samples) was 913. Across all reports that gave basic demographic information (n=24), the number of military service members was 336 (81.3% male), and the number of spouses of service members was 347 (95.4% female). There were 146 participants who were children of military service members, there were at least 51 participants who were school personnel, and 33 participants were military parents, otherwise unspecified.

Of those studies looking at military service members, only four gave information regarding specific military affiliation: of these, 85% were Army or Army National Guard, 9% were Air Force, 3% were Marines, and 2% were Navy. Of those studies involving spouses of military service members, only seven gave information regarding specific military affiliation: of these, 74% were Army or Army National Guard, 12% were Air Force, 10% were Navy, and 4% were Marines. Within reports which gave detailed demographic information (n=13), out of a total of 706 participants, 71% were White/Caucasian, 12% were Black/African American, 10% were Hispanic/Latino, and 7% were of other ethnicities.

Abstracting Findings

The 115 edited statements related to the topic of interest were distilled further, collapsing commonalities and redundancies. This resulted in nineteen abstracted statements related to the families' responses to the deployment experience. The nineteen statements with frequency effect sizes are shown in Table II.1.

Table II.1

Abstracted Findings of Military Families' Experience of the Deployment Cycle

Finding	Reports[1]	Effect Size[2]
1. Transitions were experienced by all family members across pre-deployment, deployment, and post-deployment time periods.	23	1.00
2. Adapting to the process of role relinquishment and reacquisition was difficult for all family members - the returning deployer, the home front spouse, and any children. Homecoming could be just as stressful as the initial separation of deployment, and this could be unexpected for everyone in the family.	16	0.70
3. Both spouses and children had to take on the family roles of the deployer during their absence, and this often led to additional stress and burden, and feelings of overwhelming responsibility. Despite this, and whether or not they had time for self-nurturing activities, those left behind began to identify as independent competent individuals.	16	0.70
4. Anxiety was high for families and service members because there were so many unknowns and so little information available related to the deployment; worry about the deployers' safety was always a concern for the family during deployment.	14	0.61
5. The returning deployer often felt isolated from family and others upon return for various reasons: difficulty communicating, difficulty fitting back into the family, and/or experiences of PTSD. On return, the deployer could feel like a different person to the family, and to him- or herself, and sometimes felt that family members had changed too.	13	0.57
6. There were multiple avenues for communication during deployment, and families made a concerted effort to find ways to connect with the deployer during this time. Even so, communication was decreased for various reasons: time zone differences, technical difficulties, limited AD off-duty time, misunderstandings, operational security, and AD attempt to protect the family from worry.	13	0.57
7. It took time and was difficult for the returning deployer to communicate openly during reintegration, which sometimes caused concerns within the marital relationship. This time period was often characterized by heightened interpersonal conflict in the partner relationship, sometimes related to increased irritability on the part of the returning deployer.	12	0.52

8. Parenting relationships changed after reintegration, and all family members expressed worry about the deployer resuming his or her parental role. Parents who had returned were sometimes more protective of children after deployment experiences, parents sometimes disagreed on household rules and parenting decisions, and children were sometimes confused by the changes in family dynamics and/or chose not to accept parental guidance from the returning deployer.	12	0.52
9. Both AD deployers and their families used spiritual connection (e.g. prayer, meditation) to enhance their relationship and/or cope with stress during deployment where communication was limited; in the post-deployment period, open communication between partners was helpful in re-establishing connection and in providing support for the returning deployer.	11	0.48
10. Because of the deployment, there were missed opportunities for family life and family memories that could include the deployed individual, and this created a sense of sadness and loss - AD, home front and children all vocalized this.	10	0.43
11. Both partners described multiple additional stressors on reintegration, such as difficulty establishing and re-negotiating sexual intimacy, financial concerns, and increased alcohol consumption and firearm use by the returning deployer.	10	0.43
12. There is an element of social isolation for families going through transposement - a feeling that no one understands, with some families experiencing depressive symptoms; support from those who had been through, or were currently going through, the deployment experience was highly valued.	10	0.43
13. Home front parents and/or older siblings would avoid showing sadness or worry in front of young children in order to protect them; children of all ages struggled with understanding why their parent was going or gone on deployment.	9	0.39
14. The family could feel resentful that the returning deployer did not appreciate the personal growth and sacrifices made during the deployment separation, and vice versa.	7	0.30
15. AD found comfort in friendships with deployment colleagues during and after deployment - sharing experiences with others who had been through a similar experience facilitated feelings of support - but this could be difficult for family if the returning deployer was not also communicating with them.	7	0.30

16. Conflict between duty to military and duty to family could create feelings of guilt for the service member and confusion for the family - guilt affected AD parenting, in that some were less or more willing to discipline, and less or more willing to withdraw from their children's lives.	6	0.26
17. AD thought about their family and children at home while on deployment, and this was a source of joy, a source of worry, and a source of frustration (desire to be with them, but could not be); alternately during deployment, the AD member needed to focus on the changes in their new environment, and how best to adapt - sometimes the AD member put aside thoughts of family to concentrate on the mission.	5	0.22
18. Deploying parents described a need to emotionally detach and shut down before leaving - the service member was frequently away from home getting ready for deployment-related work duties, and this placed a strain on family relationships; at the same time the family also had many tasks to complete to prepare for the deployment, and some families described a need to detach and emotionally protect themselves as well.	5	0.22
19. There was some relief when the deploying person "finally" left - the anxieties about starting the deployment separation were gone, and the family could move on to the next phase.	4	0.17

[1] The number of reports that contributed to the finding, minus those with common or overlapping samples.

[2] The number of reports that contributed to the finding, minus those with common or overlapping samples, divided by the number of total reports that contributed to the findings, minus those with common or overlapping samples.

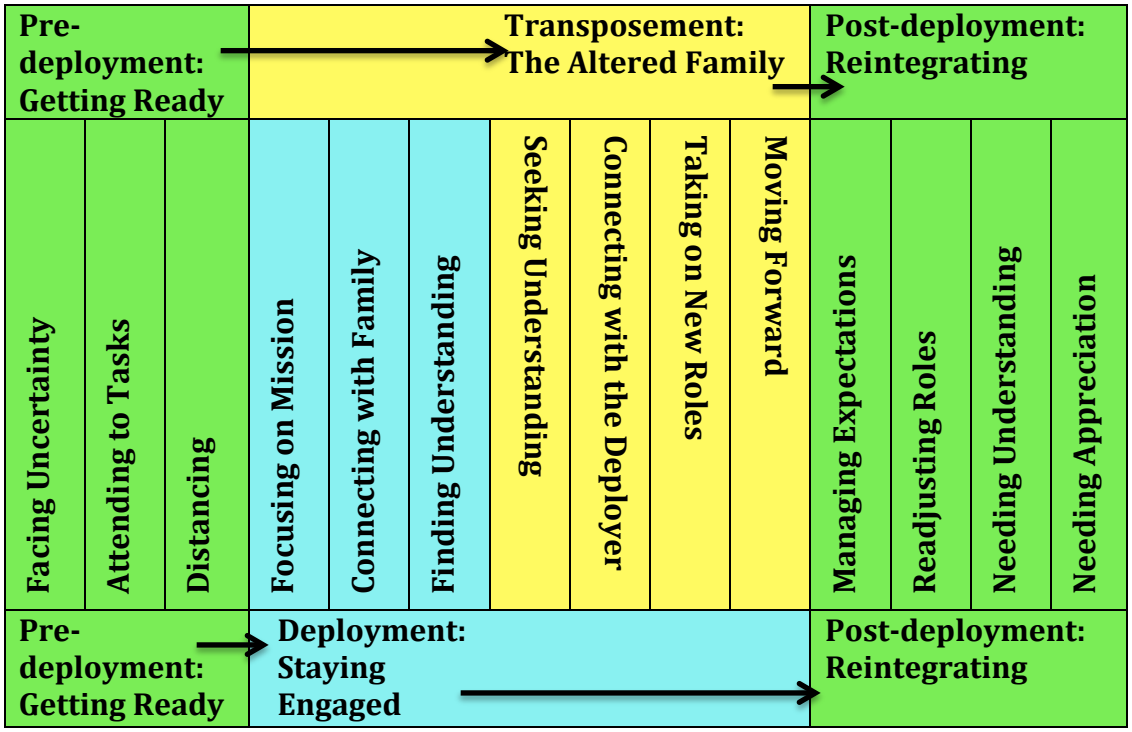
Guiding Frameworks

Spradley's (1980) framework for taxonomic analysis informed the semantic categorizations of themes emerging from the articles (see Table II.2). From this analytic process, four main domains were delineated: 1) Predeployment: Getting Ready, 2) Deployment: Staying Engaged, 3) Transposement: The Altered Family, and 4) Post-Deployment: Reintegrating. Transposement is a term coined by the authors to describe the changed state and form of the family at home while the AD member is away on deployment.

Because deployment is sequential, and the data pointed to the transitional nature of deployment, Schumacher and Meleis' (1994) work on *transitions* was incorporated and used as a complementary framework. Situational transitions, which "involve the addition or the subtraction of persons in a pretexting constellation of roles and complements" (Meleis, 2010, p. 15), were used as a way of conceptualizing the deployment cycle. Within this framework *transition conditions* were described that could be *inhibitors* or *facilitators* of the transition process. Inhibitors could lead to *role insufficiency*, defined as "…any difficulty in the cognizance and/or performance of a role ... as perceived by the self or by significant others" (Meleis, 2010, p. 16). Facilitators could aid in achieving the outcome indicators of *mastery* "of the knowledge and skills needed to deal with the new situation" and a new *identity* "that is fluid and in concert with the changes associated with the transition" (Geary & Schumacher, 2012, p. 238).

Table II.2

Taxonomy of Military Families' Deployment Cycle Transitions



Note. Green = all family members. Yellow = all family members except the deployed family member. Blue = deployed family member only.

Using these frameworks, the relevant experiences at each phase were examined, while also looking at how they fit within the larger context of the deployment cycle. While the transitions occurred sequentially, the activities within them could occur simultaneously, sometimes impacting subsequent transitions.

Findings

The four domains of transitions for families within the deployment cycle, and their descriptive taxonomies, can be seen in the schematic in Table II.2. The AD member and the family share the pre-deployment and post-deployment transitions but go through their respective deployment/transposement transitions independently.

Pre-deployment: Getting Ready

Facing uncertainty. When the military family received the notification that the service member would be deploying, the family members knew they needed to prepare for the upcoming absence of the AD member. Often the precise start date was not known, so the family was always uncertain how long they would be together before the call came. As one spouse shared, "They said, 'We're leaving tomorrow.' 'No, we're [leaving] in three days.' 'No, we're leaving in two days.' I'm like 'Can [the Army] make up [its] mind?'" (Sahlstein, Maguire, & Timmerman, 2009, p. 428). And many times the family did not know how long the deployment would last.

Attending to tasks. In order to successfully make this transition, both the AD member and the home-front family had to complete certain tasks before the

deployment occurred. The AD member was required to spend increased training time away from the family to prepare for the deployment. Simultaneously, much needed to be done to assure that the household would remain viable after deployment (for example, arranging for childcare, ensuring access to bank accounts, securing powers of attorney to pay bills). Some tasks highlighted the dangerous, if not potentially fatal, consequences of the deployment: as one spouse noted, "All of a sudden my husband and I are talking about funeral arrangements, and custody, the will, where all of the money is kept. There's a lot that impacts [you] when you get those orders" (Lapp et al., 2010, p.51). These were tasks that could elicit strong emotions and difficult conversations, and all of the tasks underscored that the family was going to be altered.

Distancing. Many families interacted less often prior to deployment, some by choice, and some not. The military training and home front preparations eroded family time that could be used to process the different emotions brought up by the impending separation. Many home front families emotionally prepared for the separation by beginning to detach. One participant said, "… it's innate to try to protect yourself a little bit when you know it's going to hurt'' (Sahlstein, et al., 2009, p. 429). For AD participants, there was often conflict between work and family responsibilities, where work demands limited family time. On the one hand participants were living as an intact family, while on the other they were trying to get used to the idea that a member would be missing very soon.

Parents in particular seemed to report intensified emotion as the inevitable separation loomed nearer, and despite feelings of wanting to distance themselves and pre-deployment time constraints, many AD parents tried to spend more time with their children before leaving. Some of the most difficult emotions surfaced at the time of separation. As one father said about leaving his 1-year-old daughter behind at the airport, "there's nothing ... tougher that I've ever had to do" (Hinojosa & Hinojosa, 2011, p. 1150).

Deployment: Staying Engaged

Focusing on the mission. Staying engaged with both family and the mission was a challenge. Once AD members deployed, they had an awareness of being in a different environment with different routines, and oftentimes safety concerns. Those deployed to combat settings were aware of constant threat, requiring a heightened sense of awareness in order to stay safe. There were times when it was important for these individuals not to think too much about their families at home, in order to stay focused on the work at hand, for their own protection, and for the safety of their colleagues. The increased emotional and physical distance from their families allowed them to better handle the imminent danger and the gravity of their work. Some fathers talked about the month or two preceding homecoming as "the scariest part of deployment" (Willerton, Schwarz, Wadsworth, & Oglesby, 2011, p.527), because it was during this time that they began to think more about family and returning home; as this

happened, they were at risk of becoming less attentive to their deployed environment, and more at risk for injury.

Connecting with family. Service members felt connected to family through communication, and by thinking about them. Actual communication offered opportunity for engagement, but it was not without difficulties. There were logistical, safety and personal reasons for inadequate or absent communication. Such things as dealing with different time zones, inadequate equipment, the secrecy of the operation, and wanting to spare the family from the details of dangerous situations, all impacted how families communicated. The usual day-to-day depth and breadth of communication that the family used to have shifted with deployment to an intermittent and sometimes superficial, if not frustrating pattern, which could lead to misunderstandings, and hurt feelings. Communication, however, could enhance connection with the family. For new parents, even limited communication was pivotal to bolstering their feelings of attachment, and often led to reassurance and empowerment as their partners at home included them in the process of caring for a newborn: "It was nice to know what was going on over there - it made me feel a little less like an outsider" (Schachman, 2010, p.15). For some military fathers, the connection with their young children lifted their spirits: "My daughter was my biggest pickup. She really helped me through the dark times" (Willerton et al., p.526).

Thinking about families could be comforting or could become a source of angst, whereby AD members felt that deployment kept them from fully

participating in the family. They knew that their families would be experiencing milestones and creating memories that would not include them. The separation exacerbated worries about their children, with some deployed parents summoning disturbing thoughts. One reported, "I'd conjure up all types of terrible things in my mind that could happen while I was gone, like my daughter getting pregnant or raped, or car accidents" (Scannell-Desch & Doherty, 2013, p.31).

Finding understanding while deployed. While the family was physically distant, and communication with them could be problematic, the service members were able to develop support from their comrades. One soldier said, "We were able to talk about how our day went and what we saw ... we were able to get the gore out of our life ... it was the friendship of the unit and being able to talk about it that got me through it" (Hinojosa & Hinojosa, 2011, p.1151). Another said, "There is a bond you form with those people, . . . because you've been through the same experience, that never goes away" (Burnell, Coleman, & Hunt, 2006, p.285). These strong connections formed naturally and were the basis of a surrogate family during the deployment experience.

Transposement: The Altered Family

Moving forward. For a successful transition, families at home had to focus on moving forward as an intact family, even though the deployed person would not be physically present. Successfully meeting this challenge was complicated by an array of feelings related to the loss. Loneliness, isolation, grief

and a constant fear of not knowing if the deployed person was safe were common emotions. Children worried about the deployed parent, asking questions such as, "Is my Mother/Father going to die?" and "When is she/he coming home?" (Hayes et al., 2010, p.834). Some older children tried not to exhibit distress in front of their younger siblings. This facade could be difficult to maintain, resulting in angry outbursts at home, and school. To maintain a normal life while moving forward, families utilized multiple coping modalities including: staying busy, continuing children's previous activities, journaling and relying on spiritual beliefs, to name a few. Many families felt relief that the predeployment uncertainty was over: as one mother said, "[My daughters and I] woke up the next morning [after my husband left for Iraq] and I said, "Okay, time to get on with our lives" (Sahlstein et al., 2009, p.430).

Taking on new roles. Even though families moved forward, a significant consequence at home was the burden of additional roles. For both spouses and children, this could lead to overload. Family members found it particularly stressful when they had to take on roles that heretofore they had not mastered, such as managing the finances. Older children for instance, were asked to take care of their younger siblings, and to take on more responsibility at home. One young participant said: ". . . when my dad's not there, I'm not, you know, the child anymore... " (Huebner, Mancini, Wilcox, Grass, & Grass, 2007, p.117). Some children noted that even though they had extra responsibilities during the deployment, it was a source of pride, and indicated their increased maturity.

Many spouses also experienced feelings of pride and increased self-confidence from meeting the challenges of the prolonged separation.

Connecting with the deployed member. The participants on the home front had multiple ways of connecting with the deployed members, such as letters, e-mails, webcams, etc., in addition to thinking about them. Those at home were often not sure when they would receive news, so they felt the need to be ready at a moment's notice for any communication that might come through. When they did have the opportunity to communicate, failures in the technology could inhibit a meaningful exchange. Also, family members voiced that they rarely got the information they really wanted about the deployed members' situation and safety, and would sometimes turn to military liaisons or the news outlets. Almost any type of communication that let the families know the deployed person was alive and safe provided temporary respite from worry: "We've spoken under all kinds of conditions, where things have beeped and honked and cut off, but ... just to hear he's all right and safe and sound, that's all we care about" (Merolla, 2010, p. 18). Thoughts of the deployed person could bring both comfort and anxiety. Another source of anxiety for families was the worry that the deployed person might return a different person after deployment, and that the family as a whole would be changed too. As the homecoming date approached, all family members started to think about the reunion, and how they would fit back together. These thoughts helped prepare the families for the next transition period.

Seeking understanding at home. Like the deployed family member, spouses and children also needed to be understood. They needed support for their deployment related losses and the additional role burdens they incurred. Many spouses and children expressed feeling isolated because they believed that others would not understand their experience. Although those at home might have had support from family and friends, they desired it from those who were going through the same experience. Often, spouses and children sought emotional support from other families in the same unit, or military families from a different detachment: "it's like people know exactly what I'm going through, and [it] ... really helped" (Faber et al., 2008, p.226). Families felt that their life with a deployed service member was unique, and that real support was not easily found. The new relationships they built with others in similar situations helped facilitate coping during this transition.

Post-deployment: Reintegrating

Managing expectations. On the surface, reuniting would seem like an easy transition, and initially for most participants, the family reunion was joyful. But many families noted that the reintegration transition was harder than any of the other transition phases. One AD father was surprised: “I thought, it’s [reunion] not that big a deal. But, you don’t realize ... how hard it is ... I figured ... a week ... everything’s back to normal. But it took a real long time to get back to normal . . . probably almost a year" (Willerton et al., 2011, p. 526). Relationships within the family had changed during the deployment; some children developed

greater attachment to the home front parent, and felt resentment towards the parent who was gone. All family members described the path to reintegration as work, and a process that occurred over time requiring patience, persistence, and realistic expectations. Everyone had to adjust to living together again as a family. As one adolescent noted, "There were responsibilities taken up by each of us and then when dad came home, we didn't have the responsibilities anymore… We can't go back to being who we were because we're not that anymore. We have to move forward, but it's also something you have to do as a whole family" (Huebner et al., 2007, p.117).

Readjusting roles. When the service member returned, the whole family needed to adjust to the new delineation of roles and responsibilities. There were problems of role acquisition as well as of role relinquishment. One spouse noted, "Now that she's home, it's almost as bad as right before she left. The kids and I had our system all worked out; now she's trying to reorganize everything. She still thinks she's telling her soldiers what to do. … We are really excited to have her home, but it's not all roses" (Wiens & Boss, 2006, p.33). Additionally, older children who had gained independence during the previous transition phase were resentful when the returning parent did not recognize their increased maturity. Acknowledging the changes that had occurred over the deployment time period, and being open to discussing shifts for all family members in roles and responsibilities after return, facilitated healthy transition.

Needing understanding. While the family was reintegrating, all members needed to feel understood. In order to do this the family had to have open, supportive communication. Some service members, however, were reticent to talk about their deployment experiences. Some wanted to spare their loved ones the details of combat, while others simply wanted to let go of that time in their lives, and still others felt that their families would not fully understand. One returning service member said: "I wonder if I'll ever be who I was before I went to Iraq. I actually mourn the loss of the person I was before. I guess after an experience like war, you are never quite the same, and I must accept that" (Scannell-Desch & Doherty, 2010, p.10). Some found they were most comfortable sharing their deployment experiences with other veterans. If the deployed family member relied primarily on other veterans as a surrogate family for support after returning from deployment, family conflict could arise at home. It was difficult for anyone to feel understood when family communication was impaired. Families that were able to communicate openly during this transition expressed greater satisfaction within their relationships. As one AD participant expressed, "We can't shut each other out" (Knobloch & Theiss, 2012, p. 430).

Needing appreciation. Family members also needed appreciation for their sacrifices and accomplishments, and if this did not happen, resentments could arise. The veterans sometimes felt underappreciated as they tried to resume duties at home that had been taken on by other members of the family. Meanwhile, the family felt that the sacrifices on the home front deserved

recognition. One adolescent described his father yelling at the family - ""you don't know what I have been through." And half of me wants to just go up there and say, "you don't know what we have been through; we have done so much for you" ..." (Mmari, Roche, Sudhinaraset, & Blum, 2009, p.465). For some marital relationships, there was heightened interpersonal conflict, and risk for dissolution of the marriage, during this transition period. A healthy transition to a reunited family was facilitated when all members of the family felt supported and appreciated. The expression of appreciation was especially important from within the family, but was also valued when it came from friends and community members, as well as society at large.

Discussion

Deployment is a normal event in military family life, but even in the context of a strong and connected family core, the deployment cycle is hard, and it affects everyone in the family. The use of transitions as a framework was helpful because those involved in the process did indeed feel like they were constantly in a transition, either worrying about potential for deployment, getting ready for deployment, being in the deployment period, or adjusting to the post-deployment period. For those who experienced multiple deployments, it could feel like stability was ephemeral. During the pre-deployment phase, families lived in a state of concerned or worried anticipation, readying themselves for the multiple losses that that would be incurred: loss (through separation) of an intact family, loss of usual roles, and possible future losses due

to injury or death. These feelings are not unlike those seen in anticipatory grief. In her qualitative study examining caregiver responses to the terminal illness of a spouse, Duke (1998) found uncertainty was a major factor within anticipatory grief.

Familial intimacy is built upon day-to-day communication transactions about all manner of daily family living, big and small, which then become the basis for a certain type of emotional shorthand used within each family to convey and receive messages more effectively. When this day-to-day communication is interrupted by the demands of deployment, miscommunication is very likely to happen. This miscommunication can become a wedge within the family when the family members do not realize that they need to work even harder to communicate effectively because their emotional shorthand can no longer be used. Walsh (1996, 2002) believes that open emotional sharing and clear communication are essential to family resiliency. The authors of this metasynthesis found that communication during deployment was cherished, but both service members and their families identified problematic communication as a source of frustration and potential misunderstanding.

And oftentimes in order to protect the other, the deployer and the home front family would sometimes censor what was being said, thus restricting authentic exchanges about their lives and exacerbating an already complicated communication situation. Beneficent secrets did not help alleviate the worrisome uncertainty that is endemic in military families, who deal with multiple instances

of limited information flow. As noted above, guarded communication happened during the actual deployment, and sometimes continued when some returning deployers maintained reliance on their military comrades as their primary confidants rather than sharing with the family. Bok (1983) in writing about the ethics of secrets, delineates insiders, and outsiders, to secrets. She states that "experience with secrecy tests human relationships as little else does…" (p. 44). The use of discretion with secrets is something she espouses. For military families, there seems to be a delicate balance between employing discretion and creating the feelings of being an outsider.

Another key factor pertaining to deployment and post-deployment that is closely linked to open communication was the need to be understood. In deployment and transposement, the service member and the family member(s) felt understood by others who were in similar situations. During post-deployment reintegration, it was important for the service member to be understood by the family at home, and vice versa, though in neither case did they share the same experiences. Also, there was a need for mutual respect, where each family member wanted to be appreciated and valued for his or her own individual contributions during the separation. However, without open communication and understanding, appreciation for the other's sacrifices would be difficult. The authors believe that all aspects of communication that assist families better understand each other during the deployment cycle are worth

further study and could possibly lead to the refinement of interventions to enhance mutual appreciation of the experience.

Though the results of this qualitative metasynthesis cannot be generalized, they can guide further research. Different factors within the domains could be explored in more depth. For example, how might technology foster healthy communication within families during deployment? There is some evidence to suggest that disruption of roles can be repaired through active, engaged communication using technology while the service member is deployed (Schachman, 2010). But is this type of communication during deployment related to better post-deployment family reintegration outcomes?

Also while using a timeline approach is useful for organizing data, and compatible with much research about deployment, it did not lend itself to delving deeply into any one factor of the deployment cycle. Almost all of the studies done were of male AD members, and female civilian spouses. What are the perspectives of female soldiers, and male civilian spouses, and of families where both parents are in the military? One recent study (Agazio et al., 2013) looked at the experience of deployed military mothers, and how health care practitioners could best support these mothers and families before, during and after the deployment experience - given our findings, looking at multiple family structures is an important direction for future research. What are the perspectives of same sex couples and parents? How do children handle the impact of deployment - do they build resilience in the face of frequent

deployments, or are negative emotional and behavioral outcomes compounded over time and over multiple deployments?

"Children who grow up in military families are more likely than those raised in nonmilitary families to enlist in the armed services" (Hayes et al., 2010, p. 835), and this means that the care given to families now will lead to wide-ranging effects on the military of the future. It is vital to understand "how trauma effects manifest within the couple and family system" (Goff et al., 2006, p. 459) in order to understand where there might be openings for positive intervention.

References

References marked with an asterisk indicate studies included in the metasynthesis.

Agazio, J., Hillier, S. L., Throop, M., Goodman, P., Padden, D., Greiner, S., & Turner, A. (2013). Mothers going to war: The role of nurse practitioners in the care of military mothers and families during deployment. *Journal of the American Association of Nurse Practitioners*, *25*(5), 253-262. doi:10.1111/j.1745-7599.2012.00811.x

Allen, E. S., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2010). Hitting home: Relationships between recent deployment, posttraumatic stress symptoms, and marital functioning for Army couples. *Journal of Family Psychology*, *24*(3), 280-288. doi:10.1037/a0019405

Armistead-Jehle, P., Johnston, S. L., Wade, N. G., & Ecklund, C. J. (2011). Posttraumatic stress in U.S. Marines: The role of unit cohesion and combat exposure. *Journal of Counseling & Development*, *89*(1), 81-88.

Barker, L.H., & Berry, K.D. (2009). Developmental issues impacting military families with young children during single and multiple deployments. *Military Medicine*, *174*(10), 1033-1040.

Bok, S. (1983). *Secrets: On ethics of concealment and revelation*. Vintage. NY.

Booth-Kewley, S., Highfill-McRoy, R., Larson, G., Garland, C., & Gaskin, T. (2012). Anxiety and depression in Marines sent to war in Iraq and Afghanistan. *Journal of Nervous Mental Disease*, *200*(9), 749-757. doi:10.1097/NMD.0b013e318266b7e7

*Burnell, K. J., Coleman, P. G., & Hunt, N. (2006). Falklands War veterans' perceptions of social support and the reconciliation of traumatic memories. *Aging & Mental Health*, *10*(3), 282-289. doi:10.1080/13607860500409385

*Chandra, A., Martin, L. T., Hawkins, S. A., & Richardson, A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. *Journal of Adolescent Health*, *46*(3), 218-223. doi:10.1016/j.jadohealth.2009.10.009

Chartrand, M. M., Frank, D. A., White, L. F., & Shope, T. R. (2008). Effect of parents' wartime deployment on the behavior of young children in military families. *Archives of Pediatrics & Adolescent Medicine*, *162*(11), 1009-1014.

*Davis, J., Ward, D. B., & Storm, C. (2011). The unsilencing of military wives: Wartime deployment experiences and citizen responsibility. *Journal of Marital and Family Therapy*, *37*(1), 51-63. doi:10.1111/j.1752-0606.2009.00154.x

Defense Manpower Data Center. (2012). *DoD personnel and military casualty statistics: December 31, 2011*. Retrieved June 1, 2013 from http://siadapp.dmdc.osd.mil/personnel/MILITARY/miltop.htm

Department of the Navy. (2013). *Status of the Navy.* Retrieved 01 June, 2013 from http://www.navy.mil/navydata/nav_legacy.asp?id=146

Duke, S (1998). An exploration of anticipatory grief: The lived experience of

people during their spouses' terminal illness and in bereavement. *Journal of Advanced Nursing, 28(4),* 829-839.

Eskin, V. (2011). Ladies in waiting: A group intervention for families coping with deployed soldiers. *International Journal of Group Psychotherapy*, *61*(3), 414-437.

*Faber, A. J., Willerton, E., Clymer, S. R., MacDermid, S. M., & Weiss, H. M. (2008). Ambiguous absence, ambiguous presence: A qualitative study of military reserve families in wartime. *Journal of Family Psychology*, *22*(2), 222-230. doi:10.1037/0893-3200.22.2.222

*Gambardella, L. C. (2008). Role-exit theory and marital discord following extended military deployment. *Perspectives in Psychiatric Care*, *44*(3), 169-174.

Geary, C. R., & Schumacher, K. L. (2012). Care transitions: Integrating transition theory and complexity science concepts. *Advances in Nursing Science*, *35*(3), 236-248. doi:10.1097/ANS.0b013e31826260a5

*Giles, S. (2005). Army dependents: Childhood illness and health provision. *Community Practitioner: The Journal of the Community Practitioners' & Health Visitors' Association*, *78*(6), 213-217.

*Goff, B. S. N., Reisbig, A. M. J., Bole, A., Scheer, T., Hayes, E., Archuleta, K. L., … Smith, D. B. (2006). The effects of trauma on intimate relationships: A qualitative study with clinical couples. *The American Journal of Orthopsychiatry*, *76*(4), 451-460. doi:10.1037/0002-9432.76.4.451

Gorman, G. H., Eide, M., & Hisle-Gorman, E. (2010). Wartime military deployment and increased pediatric mental and behavioral health complaints. *Pediatrics*, *126*(6), 1058-1066. doi:10.1542/peds.2009-2856

*Hannold, E.M., Freytes, I.M., & Uphold, C.R. (2011). Unmet health services needs experienced by Puerto Rican OEF/OIF veterans and families post deployment. *Military Medicine*, *176*(4), 381-388.

*Hayes, J., Wakefield, B., Andresen, E.M., Scherrer, J., Traylor, L., Wiegmann, P., Demark, T., & Desouza, C. (2010). Identification of domains and measures for assessment battery to examine well-being of spouses of OIF/OEF veterans with PTSD. *Journal of Rehabilitation Research and Development*, *47*(9), 825-840. doi:10.1682/JRRD.2009.04.0049

*Hinojosa, R., & Hinojosa, M. S. (2011). Using military friendships to optimize postdeployment reintegration for male Operation Iraqi Freedom/Operation Enduring Freedom veterans. *Journal of Rehabilitation Research and Development*, *48*(10), 1145-1158. doi:10.1682/JRRD.2010.08.0151

*Hinojosa, R., Hinojosa, M.S., & Hognas, R.S. (2012). Problems with veteran-family communication during Operation Enduring Freedom/Operation Iraqi Freedom military deployment. *Military Medicine*, *177*(2), 191-197.

Hosek J. (2011). *How is deployment to Iraq and Afghanistan affecting U.S. service members and their families? An overview of early RAND research on the topic*. RAND: National Defense Research Institute. Retrieved from

http://www.rand.org/content/dam/rand/pubs/occasional_papers/2011/RAND_OP316.pdf

*Huebner, A. J., Mancini, J. A., Wilcox, R. M., Grass, S. R., & Grass, G. A. (2007). Parental deployment and youth in military families: Exploring uncertainty and ambiguous loss. *Family Relations*, *56*(2), 112-122.

*Knobloch, L. K., & Theiss, J. A. (2012). Experiences of U.S. military couples during the post-deployment transition: Applying the relational turbulence model. *Journal of Social and Personal Relationships*, *29*(4), 423-450. doi:10.1177/0265407511431186

*Lapp, C. A., Taft, L. B., Tollefson, T., Hoepner, A., Moore, K., & Divyak, K. (2010). Stress and coping on the home front: Guard and Reserve spouses searching for a new normal. *Journal of Family Nursing*, *16*(1), 45-67. doi:10.1177/1074840709357347

*Lara-Cinisomo, S., Chandra, A., Burns, R. M., Jaycox, L. H., Tanielian, T., Ruder, T., & Han, B. (2012). A mixed-method approach to understanding the experiences of non-deployed military caregivers. *Maternal and Child Health Journal*, *16*(2), 374-384. doi:10.1007/s10995-011-0772-2

Mansfield, A. J., Kaufman, J. S., Engel, C. C., & Gaynes, B. N. (2011). Deployment and mental health diagnoses among children of US Army personnel. *Archives of Pediatrics & Adolescent Medicine*, *165*(11), 999-1005. doi:10.1001/archpediatrics.2011.123

Mansfield, A. J., Kaufman, J. S., Marshall, S. W., Gaynes, B. N., Morrissey, J. P., &

Engel, C. C. (2010). Deployment and the use of mental health services among U.S. Army wives. *New England Journal of Medicine*, *362*(2), 101-109.

*Marnocha, S. (2012). Military wives' transition and coping: Deployment and the return home. *International Scholarly Research Network: Nursing*. doi:10.5402/2012/798342

Meleis, A. I. (2010). *Transitions theory: Middle range and situation specific theories in nursing research and practice*. New York: Springer Publishing Company.

*Merolla, A. J. (2010). Relational maintenance during military deployment: Perspectives of wives of deployed US soldiers. *Journal of Applied Communication Research*, *38*(1), 4-26. doi:10.1080/00909880903483557

*Mmari, K., Roche, K. M., Sudhinaraset, M., & Blum, R. (2009). When a parent goes off to war: Exploring the issues faced by adolescents and their families. *Youth & Society*, *40*(4), 455-475. doi:10.1177/0044118X08327873

Mulligan, K., Jones, N., Woodhead, C., Davies, M., Wessely, S., & Greenberg, N. (2010). Mental health of UK military personnel while on deployment in Iraq. *British Journal of Psychiatry*, *197*, 405-410. doi:10.1192/bjp.bp.110.077263

*Ray, S. L., & Vanstone, M. (2009). The impact of PTSD on veterans' family relationships: An interpretative phenomenological inquiry. *International Journal of Nursing Studies*, *46*(6), 838-847. doi:10.1016/j.ijnurstu.2009.01.002

*Sahlstein, E., Maguire, K. C., & Timmerman, L. (2009). Contradictions and praxis contextualized by wartime deployment: Wives' perspectives

revealed through relational dialectics. *Communication Monographs*, *76*(4), 421-442. doi:10.1080/03637750903300239

Sandelowski, M., & Barroso, J. (2007). *Handbook for synthesizing qualitative research*. New York: Springer Publishing Company.

Sayers, S. L., Farrow, V. A., Ross, J., & Oslin, D. W. (2009). Family problems among recently returned military veterans referred for a mental health evaluation. *Journal of Clinical Psychiatry*, *70*(2), 163-170.

*Scannell-Desch, E., & Doherty, M. E. (2010). Experiences of U.S. military nurses in the Iraq and Afghanistan wars, 2003-2009. *Journal of Nursing Scholarship*, *42*(1), 3-12. doi:10.1111/j.1547-5069.2009.01329.x

*Scannell-Desch, E., & Doherty, M. E. (2013). The lived experience of nurse-parents deployed to war. *MCN: The American Journal of Maternal Child Nursing*, *38*(1), 28-33. doi:10.1097/NMC.0b013e31826187b7

*Schachman, K. A. (2010). Online fathering: The experience of first-time fatherhood in combat-deployed troops. *Nursing Research*, *59*(1), 11-17.

Schumacher, K. L., & Meleis, A. I. (1994). Transitions: A central concept in nursing. *Image: The Journal of Nursing Scholarship*, *26*(2), 119-127.

Spradley, J. P. (1980). *Participant observation*. New York: Holt, Rinehart, and Winston.

Tsai, J., Harpaz-Rotem, I., Pietrzak, R. H., & Southwick, S. M. (2012). The role of coping, resilience, and social support in mediating the relation between

PTSD and social functioning in veterans returning from Iraq and Afghanistan. *Psychiatry*, *75*(2), 135-149.

U.S. Department of Defense. (2010a). *Deployment-limiting medical conditions for service members and DoD civilian employees*. Retrieved from http://www.dtic.mil/whs/directives/corres/pdf/649007p.pdf

U.S. Department of Defense. (2010b). *Report on the impact of deployment of members of the armed forces on their dependent children*. Retrieved from http://www.militaryonesource.mil/12038/MOS/Reports/Report_to_Congress_on_Impact_of_Deployment_on_Military_Children.pdf

U.S. Department of Defense. (2013). *2012 demographics profile of the military community*. Retrieved from http://www.militaryonesource.mil/12038/MOS/Reports/2012_Demographics_Report.pdf

U.S. Military Personnel Manual. (2003). *Temporary Additional Duty (TEMADD) orders*. Retrieved from http://www.public.navy.mil/bupers-npc/reference/milpersman/1000/1300Assignment/Documents/1320-314.pdf

Walsh, F. (1996). The concept of family resilience: Crisis and challenge. *Family Process, 3,* 261-281.

Walsh, F. (2002). A family resilience framework: Innovative practice applications. *Family Relations, 51*, 130-137.

*Wiens, T. W., & Boss, P. (2006). Maintaining Family Resiliency Before, During, and After Military Separation. In C. A. Castro, A. B. Adler, & T. W. Britt (Eds.), *Military life: The psychology of serving in peace and combat (Vol. 3): The military family* (pp. 13-38). Westport, CT: Praeger Security International.

*Willerton, E., Schwarz, R. L., Wadsworth, S. M. M., & Oglesby, M. S. (2011). Military fathers' perspectives on involvement. *Journal of Family Psychology*, *25*(4), 521-530. doi:10.1037/a0024511

Wool, Z. H., & Messinger, S. D. (2012). Labors of love: The transformation of care in the Non-Medical Attendant program at Walter Reed Army Medical Center. *Medical Anthropology Quarterly*, *26*(1), 26-48. doi:10.1111/j.1548-1387.2011.01195.x

Chapter III

Link Between Deployment Factors and Parenting Stress in Navy Families

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A. Specific Aims

Problem statement. When a military service member is deployed, there is a significant effect on families, including negative mental health outcomes in the service member's spouse [1, 2] and increases in child psychosocial symptoms [3, 4]. There is very little existing data on whether parenting stress is affected by various deployment factors. The family is affected by deployment in terms of potential for parenting dysfunction in both returning active duty parents [5] and their civilian spouses [6] which could then lead to increased child distress and problem behaviors [7, 8]. These negative outcomes have the potential to affect a sizeable portion of the military force; over one third of the United States military is married with children under six years of age [9].

Key concepts. Deployment is defined as a military member being sent away from their stateside home to a location outside of the United States for an extended period of duty [10, 11]. Deployment factors are characterized by 1) perceived threat, 2) warfare exposure, 3) length of time away from home, and 4) number of times deployed. Parenting stress is defined as an increased feeling of load on the parent, and increased difficulty accepting the child's behaviors or managing the child's misbehaviors; increased life stressors can increase parenting stress [12]. Increased parenting stress can lead to family dysfunction [12, 13]. Early childhood is defined in this proposal as the period from one month through five years of age. Social support, through relationships with others who

can provide physical and/or emotional assistance to the parents and/or children within the military family, may be a moderating factor [14]. Spirituality is defined as the individual's feeling of daily connection with the divine; this may affect how military families adapt to deployment separation and reintegration [15]. Post-traumatic stress disorder (PTSD) is a psychiatric condition prefaced by exposure to a traumatic event; after this exposure symptoms include re-experiencing of the event, avoidance of memories of the event, emotional distancing, and hyperarousal [99]. Depression is a mood disorder characterized by feelings of sadness, reduced pleasure in activities that were enjoyable in the past, and functional limitations related to depressive symptoms [99]. PTSD and depression may be stressors for both service members [44,158] and their spouses [125,151].

Long-term goal. The long-term goal of this program of research is to be able to develop innovative behavioral interventions to promote healthy parenting in military families dealing with the unique stressors of deployment. As active duty members return to their families, it is imperative to assist not just the active duty member, but their families as well.

Major objective of the study. This feasibility study will begin to determine if recently returned military fathers and their female civilian spouses experience higher than normal early childhood parenting stress within twelve months after returning from deployment; the study will also investigate how spirituality and social support impact early childhood parenting stress. As part

of a feasibility objective, this study will also determine if participants are willing to give information on these sensitive topics.

Specific aims. The primary aim is to explore the relationship between deployment factors and parenting stress, controlling for demographic variables and concurrent stressors: a) in recently returned male active duty parents, and b) in female civilian spouses of the recently returned active duty parents. The secondary aim is to examine whether and to what extent social support and spirituality impact parenting stress while controlling for demographic variables and concurrent stressors: a) in recently returned male active duty parents, and b) in female civilian spouses of the recently returned active duty parents. The tertiary aim is to examine the possible moderating effect of social support and spirituality on the relationship between deployment factors and parenting stress.

B. Background and Significance

Scope of the problem. The recent wars in Iraq and Afghanistan have been very stressful for military members. A report on health promotion efforts to combat suicide in the U.S. Army states,

> Our units, Soldiers and Families are feeling the strain and stress of nine years of conflict. The cumulative effect of transitions borne of institutional requirements (professional military education, PCS moves, promotions) coupled with family expectations/obligations (marriage, child birth, aging parents) and compounded by deployments is, on one hand, building a

> resilient force while on the other, pushing some units, Soldiers and Families to the brink (U.S. Army, 2010, p.1) [16].

These same stresses are felt across all service branches - a Navy Personnel Command poll showed a 24% increase in sailor-reported stress from 2005 to 2012, with more stress reported for sea-based vs. shore-based sailors[126]. Stress in the context of deployment encompasses stressors "on the ship, shore, airframes, or in combat zones;"[127] these can include involuntary enlistment extension, increased lengths of deployment, and decreased time with the family [17]. Navy sea-based deployments have traditionally lasted six months, but within the recent past due to higher operational requirements, they have increased in length to upwards of ten months at sea [128-130]. The war in Afghanistan is now accepted as the longest war in which the U.S. military has ever been engaged [18]. A 2008 report showed that 50% of troops in Iraq and Afghanistan reported having a friend seriously injured or killed [19]. These types of intense stress exposures can affect the emotional and mental outlook of the military service member; in a survey of 2,000 personnel from all branches who had served in Iraq and Afghanistan, almost 20% met criteria for possible PTSD or depression [20].

Deployment is also hard on families. A sizeable body of research demonstrates emotional or mental problems in the spouse [6, 7, 19, 21-23], an overwhelming feeling of responsibility for the running of the household [19, 24-26], and increased concerns about the children's health and well-being [19, 27, 28] while their spouses are away. In addition, families in different military branches may

respond differently to deployment: a recent study looking at spouses of deployed active duty members (n=1,337) found that Navy spouses "reported poorer well-being" ($p < 0.05$) than spouses of Marine, Army, or Air Force personnel [26]. Research has also examined the impact of parental deployments on children. There is evidence that children have increased behavioral and mental health visits while their parent is deployed [4, 29, 30], and rates of child maltreatment are increased during parental deployment [31]. In a study by Chandra et al. (2010)[32], school staff reported children becoming co-parents to siblings during the parental deployment, while their civilian parents struggled with depressive symptoms. Negative sequelae persisted following the return of the deployed parent [32], suggesting that the effects, and the after-effects, of deployment may have long-term consequences on families in terms of parenting, and subsequent child outcomes.

Theoretical Framework. The research theoretical framework stems from the work of Nash et al. (2010) [33] to develop an Operational Stress Model, which is shown here. As the authors state: "Operational stress encompasses more than just combat; it occurs everywhere service members and their families live and work" (Nash, p. 1673). Stressor exposures can range from exposure to high-intensity stressor events, such as the death of a close friend during combat, to the accumulation of lower-intensity stressors that can lead to decreased adaptive capability over time. These exposures can lead to stress outcomes that are reflected in physical, psychological, social and spiritual domains of experience, ranging from depression to early-onset of physiologic disease. Risk and resilience factors can be moderators or mediators of the relationship between stressor exposures and stress outcomes, operating at multiple levels (e.g., genetic, immunologic, cognitive, social, spiritual).

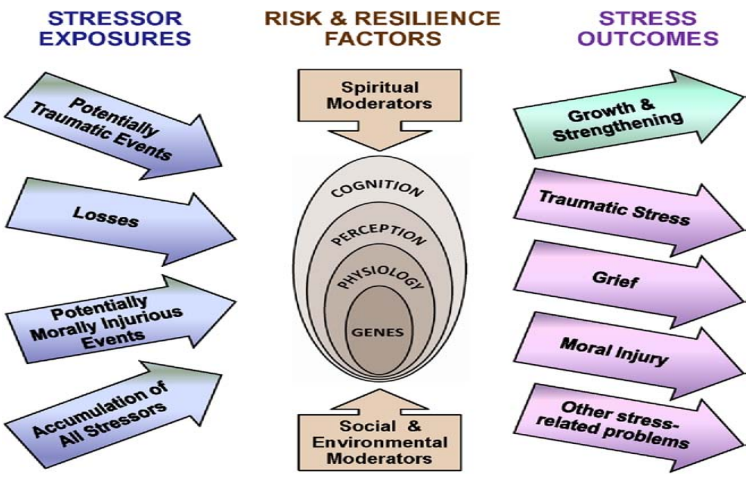

Figure III.1. Operational Stress Model

The research conceptual model is presented below. It represents the essential elements of the present study. The stressor exposures of deployment factors are postulated to have an effect on the outcome of parenting stress, such that higher levels of deployment factors may be associated with higher levels of

parenting stress. Spirituality and social support are in the model as potential moderators of this effect. For example, those individuals with higher levels of spirituality may show a weaker relationship between increased deployment factors and increases in parenting stress. There are three sets of covariates in the model. Individual demographic variables are included which can impact parenting stress, such as age, years of education, and employment status. Family demographic variables that might affect parenting stress are also included, such as number of children, years of marriage, child developmental or physical disability, and military rank. Concurrent stressors are included that can have an effect on parenting stress, such as PTSD, depression, and other life stressors. Each aspect presented in the conceptual model is discussed below.

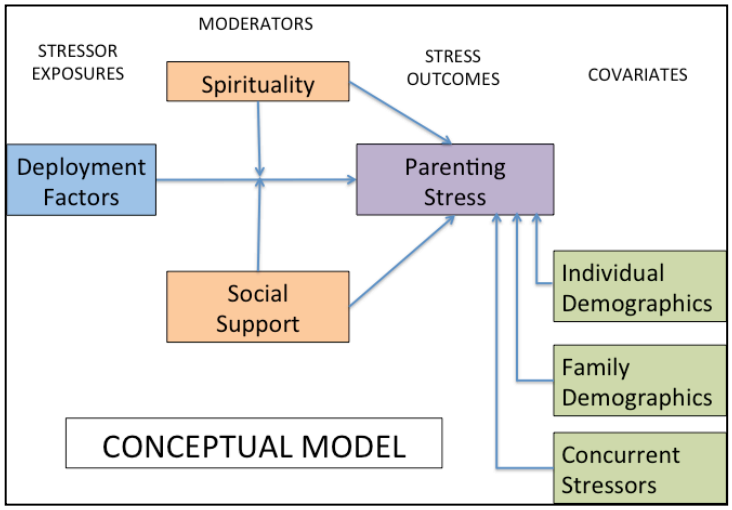

Figure III.2. Study Conceptual Model

Parenting Stress. All individuals within humankind struggle with the management of sometimes competing demands that can cause stress in many areas of life: things such as meeting personal needs for food and shelter, finding one's place as a member of a community, and deciding whether or not to follow societal dictates and norms. But once an individual becomes a parent, he or she

adds the weighty responsibility of caring for, and nurturing, another human being from infancy through to adulthood. Someone who is not in a parenting role cannot experience 'parenting stress'; the term is partly defined by the concept of two individuals in very different roles - a parent and a child. However all parents, regardless of the paucity or abundance of their resources and physical and mental reserves, experience parenting stress in some degree [34].

Parenting stress has been defined by Abidin [12]. There is the stress that comes from within the parent and their personal characteristics: how does the parent function? As a parent, does the individual feel depressed, isolated, competent, healthy? Second, the stress that comes from the parent's perception of the characteristics and behavior of their child. As a parent, does the individual see their child as demanding, hyperactive, flexible, loving? Third, the stress that comes out of the interaction between the parent and the child. How much conflict does the parent feel exists within the relationship with their child? Additionally, parenting stress can vary over time; as a child grows, a parent is constantly adapting to the changes within their child's body and psyche.

> Although this parenting stress mechanism unfolds over time and involves both the parent and the child, the adult's stress reaction to the demands of parenting is a key causal factor that propels the process forward. Accordingly, as parenting stress increases, the quality of parenting will deteriorate and the child's emotional and behavioral problems will increase. As parenting stress decreases, parenting will improve and so

will the child's social-emotional well being. (Deater-Deckard, 2004, p.8)

Successfully adapting to the role of 'parent' requires the ability to cope with ongoing, sometimes daily, doses of parenting stress. High levels of parenting stress may lead to decreased positive parenting behaviors [13, 35, 36], as well as increased child distress resulting in more child problem behaviors [4, 7, 8, 14, 37-39].

Deployment Factors. For the active duty military population, there are additional unique life stressors encompassed by deployment factors. But as articulated by Nash et al (2010), "Spouses, children, and extended close family members of those deployed may also be exposed, directly or vicariously, to both high-intensity and cumulative operational stressors (p.1674)." This study aims to look at the following four deployment factors: 1) perceived threat of most recent deployment, 2) warfare exposure of most recent deployment, 3) length of time away from home related to deployments in the past five years, and 4) number of times deployed in the past five years. These four factors represent recommended core and supplemental data elements for operational stress research [33].

Perceived Threat. In a large sample of British combat-deployed troops, perceived threat and higher combat exposure were related to self-report of PTSD symptoms [40]. Another study of over 4,000 troops showed that deployment perceived threat to life was the strongest predictor for post-traumatic stress symptoms [41]. In a validation study done with the Deployment Risk and Resiliency Inventory [164], combat/combat-support personnel experienced an almost 30% increase in warfare exposure during deployment than their service-

support counterparts. However, perceived threat scores during deployment were almost identical for combat/combat-support personnel and service-support personnel, showing the importance of measuring both warfare exposure and perceived threat, as these are two separate and distinct concepts. These two concepts have not been investigated in the context of parenting stress.

Warfare Exposure. There is evidence that experience of higher warfare exposure during deployment leads to increased risk for PTSD and other mental disorders [43, 44]. Warfare exposure and PTSD have been shown to lead to decreased parenting satisfaction [45-47], decreased family adaptability and cohesion [48], decreased positive parental-child interactions [49, 50], and increased child behavior problems [51]. Existing research in civilian samples suggests that exposure to trauma and increased life stressors increases levels of parenting stress, and leads to decreased parental role satisfaction, and increased child neglect and problem behaviors [52, 53].

Time away from home. Research shows that increased deployment duration leads to greater negative mental health symptoms in the non-deployed parent [7], as well as in the children of deployed parents [30]. The longer a deployed parent is away, the more child behavior problems arise [4, 7]. In a study of over 1500 families who participated in a summer camp for military children, increased length of deployments led to parental report of increased child difficulties during deployment, and during reintegration [54]. In a small study of Army National Guard soldier parents who had been deployed (n=36), over half of the active

duty parents felt that parenting was more stressful after deployment, and over two-thirds had concerns about child rearing and getting along with their children [55]. The separation from family necessitated by deployment, regardless of the hazards of the deployment location, can cause stress in and of itself [149].

Number of deployments. Several studies have measured number of deployments [4, 7, 56]. One study showed that as number of deployments increased, child behavior problems increased from predeployment to deployment [4]. This variable may be highly correlated with length of time away from home during data analysis. If so, this variable would be dropped, and length of time away from home would be kept in the analysis.

Spirituality. It can be difficult to separate spirituality from religiosity, but this is an important distinction to make. Religiosity is related to religious beliefs (e.g. doctrinal teachings), concrete religious actions (e.g. prayer, reading of devotional literature), and relationship with a community of faith (e.g. frequency of religious institutional attendance) [57]. Spirituality reflects an individual's relational awareness of the transcendent, divine, or holy through feelings and sensations, distinct from religious beliefs [58].

There is little literature to date on the effect of spirituality on deployment factors, or on parenting stress. A recent qualitative study demonstrated that a majority of military couples utilize spirituality to help them cope during and after deployment [15]. Out of the seven couples interviewed, only three had children living in the home with them. All three couples identified parenting

stress within the interviews, and all three identified spiritual beliefs as important to their resilient behaviors. In all cases, the separation of deployment was considered as a crisis event, which then exacerbated parenting stress for the nondeployed spouse.

In another qualitative study of 12 parents, all but one described the supportive and comforting role of spirituality in helping them to cope with the stress of caring for a child with cancer [59]. Many parents talked about their faith and spiritual beliefs as being deeply personal and indescribable in words. Some parents, whether religious or not, discussed spirituality outside of religion in the connection they felt when communing with or contemplating nature. Another study (n=69) showed that spiritual beliefs could predict the use of spirituality (p<0.001) as a psychosocial resource for parents with a child in the hospital [60].

In interviews with immigrant parents (n=51), a significant theme that emerged was the importance of spirituality and religion as a source of "strength in fulfilling their parental roles (p.145)" [61]. In a study of 189 homeless mothers, lower spiritual well-being was associated with more punitive parenting practices and child behavioral problems in African-Americans (p<0.05); higher spiritual well-being was associated with improvement in positive parenting practices over time in other ethnic groups (p<0.05) [62].

In a large scale Israeli study (n=1632), religious community integration was significantly associated with lower parenting stress scores (p<0.01) [63]. In a longitudinal study of 136 teenage mothers over a ten year span, those with high

religiosity showed decreased potential for child abuse ($p<0.01$), and had children with significantly less depression-related symptoms ($p<0.01$), and less aggression and delinquency ($p<0.05$) [64]. The more private construct of spirituality may in fact have a significant effect on parenting stress levels vs. the religiosity construct, which reflects more of a social support framework. Religious involvement has been positively related to social support in past research ($p<0.05$) [65], and because of this potential collinearity is not considered a good fit for the conceptual model in this study.

Social Support. Increased levels of social support have consistently been shown in the literature to be associated with decreased levels of parenting stress. In a sample of civilian parents separated from their active duty spouse by deployment (n=101), parental report of overall social support was a significant predictor of lower parenting stress scores, and improved child psychosocial functioning [14]. In a national sample of parents with PTSD, higher social support was predictive of better parent-child relationships [66], and was found to be a buffer for veterans with PTSD in a qualitative study [67]. In a large Palestinian sample (n= 585), social support moderated the relationship between adulthood military violence exposure and negative mental health concerns; increased social support reduced mental health concerns in those exposed to military violence ($p<0.05$) [68].

In a small study of drug-exposed and drug-naive infants (n=40), parents of both sets of children showed decreased parenting stress with increased social

support (r = -0.32, p = 0.05; r = -0.55, p = 0.007)[69]. In a large study of Canadian parents (n=923), social support and financial hardship significantly predicted 24% of the variance in parenting stress scores, and social support was significantly correlated with parenting stress (r= -0.478, p<0.001) [70]. Another large-scale Australian study (n=1276) found that coping strategies, social support measures and physical health together uniquely explained 37% of the variance in parenting stress scores (p< 0.005) [71]. For sixty-three mothers of children with developmental delays, social support explained between 22% and 35% of the variance in their parenting stress scores (p<0.001) [72].

Demographics. Studies examining similar concepts have controlled for age, education, employment status, years of marriage, number of children, and military rank in statistical analysis [5-7, 14, 28, 44, 54, 70-72]. The demographics are divided into individual and family characteristics, and discussed below.

Individual Characteristics. Studies have shown that young parents are more likely to have higher parenting stress scores [12, 14]. More educated parents have lower parenting stress scores [12], and less negative relationships with their children [73]. Several small studies indicate that maternal employment may be correlated with lower parenting stress [14, 74].

Family Characteristics. Parents married for less than five years were more likely to have increased parenting stress (p=0.07) [14]; in a study of 192 families, increased parental relationship length predicted more positivity in both maternal and paternal relationships with children (p<0.05) [73]. Several studies have shown

a significant relationship between number of children and increased parenting stress [38, 71, 75], and other research has shown increased parenting stress scores for parents of children with a developmental delay [76-78]. According to the Developmental Disabilities Assistance and Bill of Rights Act of 2000, a developmental disability is characterized by a mental or physical impairment manifested before the age of 22, which is likely to continue indefinitely, and requires individualized services for an extended or lifelong period, resulting in substantial functional limitations [155]. Another factor that seems to be consistently related to reports of increased parental stress is increased financial hardship [38, 66, 70, 73, 79, 80]. Military rank will be used as a proxy for socioeconomic status, consistent with prior research [94,100,154,163].

Concurrent Stressors. In addition to deployment factors, there may be other concurrent stressors that could impact parenting stress. In the context of the family, increased life stressors can increase parenting stress [12, 131]. A diagnosis of PTSD has been associated with decreased parenting satisfaction [45-47], decreased parenting alliance between partners [132], as well as harsher and less effective parenting practices [46,49,83]. Depression has been associated with increased parenting stress scores in many studies [36,101,133,134], including in those with military populations [135].

Timing of Assessment. The initial welcoming back of the service member from deployment is a joyful time, but difficulties can surface over time. In one

study, there was a four-fold increase in active duty member self-reported concerns about interpersonal conflict between the time an active duty member finished deployment and three to six months later, when a Post-Deployment Health Re-Assessment was completed [81]. Reintegration, or return from deployment, can increase stress within the family context, as family members adjust to the return of the deployed service member, and the service member adjusts to being back in the family [24, 25, 82]. These readjustment difficulties can be compounded by PTSD in the service member [67], with reports that returning fathers with symptoms of PTSD can have less patience with their children, and may be harsher on their children than they were before deployment [83].

There is limited data on how exposure to combat and prolonged separation from the family may affect parenting stress in the active duty parent [84], as well as the effects these deployment factors may have on the civilian parent [85]. The majority of Navy active duty service members are male (84%); and over 90% of the spouses of Navy service members are female [9]. And the majority of military children (over 42%) are under the age of six. The research questions generated by these dimensions are as follows: what is the relationship between deployment factors (e.g. fear for personal safety, length of time away from home) and early childhood parenting stress? Is this relationship different for the recently returned male active duty member, versus the female civilian spouse? Can social support and spirituality impact early childhood parenting stress? Can

spirituality and social support moderate the relationship between deployment factors and parenting stress?

Impact. There are currently over 200,000 military members deployed either on land or afloat[136, 137]. At least one third of the U.S. military is married with children under the age of six [9]. The period of early childhood is a time of rapid growth, and a time of heightened parenting intensity as young children start to move from total dependence in infancy, to understanding of themselves as separate beings with individual roles within the family [86]. If parenting stress is significantly increased after a parental deployment, this could lead to poor child outcomes ranging from delays in preschool language [35, 87], up to and including maltreatment [36], as parents become less patient, less nurturing, and may feel more isolated.

The military currently uses a computerized screening tool for military members returning from deployment to assess for negative mental health outcomes post-deployment. But deployments affect the family members as well. It is estimated that there are over 1.4 million active duty members within the military, associated with more than 1.9 million family members [9]. The military health care system is charged with caring for both active duty members and their family members [88]. It is known that the mental health of the parent affects the mental health of the child [7, 89], and that increases in parenting stress are associated with increases in child behavioral problems [14, 39, 90]. An earlier identification of parenting stress may provide the requisite healthy environments

for optimal early childhood growth and development. This can also help to decrease the costs of military health care, which are currently estimated at $50 billion per year [91, 92].

C. Research Design and Methods

The specific aims, methods and measures for this study have been delineated (see Table A1 in Appendix A, p.258). The study schemas for measures to be used by each study participant have also been tabulated (see Table A2 in Appendix A, p.259).

Research Design. This study will use a cross-sectional correlational research design examining military parent dyads. This design is appropriate as there is no precedent for this investigation, and there is little data extant on whether parenting stress is affected by various deployment factors.

The major independent variables are deployment factors (which consist of perceived threat of most recent deployment, warfare exposure of most recent deployment, length of time away from home related to deployments in the past five years, number of times deployed in the past 5 years), spirituality, and social support. The covariates will be age, years of education, employment status, number of children, length of marriage, child developmental disability, and military rank. Concurrent stressor covariates will be current PTSD, current depression, and other life stressors. Employment status is included because there may be different parenting stress outcomes for mothers who work full or

part time vs. mothers who do not work for monetary compensation [14,74]. Child developmental disability is included as a control variable because just this one factor alone could increase parenting stress [12, 76-78]. Perceived threat is included as a variable because the perception of harm to oneself can be large, while actual warfare exposure may be low. This variable has also been moderately correlated with scores on PTSD and depression in military veterans [93]. Length of time deployed and time away from home related to deployment are measured in a 5 year window to align with questions on post-deployment assessments, which ask the number of times a service member has been deployed in the past 5 years. This will increase the saliency of the questions as the active duty members may have recently answered very similar questions in their Post Deployment Health Assessment and Post Deployment Health Re-Assessment forms. Military rank has been used as a proxy for socioeconomic status in past research [94, 100, 154, 163]. The dependent variable will be parenting stress.

Setting. The setting will be a large outpatient clinic (Branch Health Clinic Norfolk Naval Station/Sewells Point, BHCSP) within the purview of Naval Medical Center Portsmouth, as well as military family homes, or other places of comfort for the female civilian parent. BHCSP has over 15,000 enrolled patients who are seen within the primary care clinic, and approximately 3,000 operational forces that are seen through the acute care branch of the facility. Additionally, BHCSP houses a medical records department, and offers gynecology and obstetrics specialty care, mental health specialty care, immunizations, pharmacy,

optometry, radiology, laboratory, occupational medicine, aviation medicine, and health promotion services. Active duty members who are enrolled to the clinic use BHCSP for their primary care needs. Deployment health activities are administered through the primary care clinic; if a service member has returned from a land-based deployment he or she is screened by the use of a Post-Deployment Health Re-Assessment questionnaire within three to six months of returning from deployment. Additionally, active duty members who are part of a ship platform utilize the ancillary services within the BHCSP when the ship's medical officer requires a radiology, laboratory, or optometry exam. Besides the opportunity to recruit military parents at the point of entry to health and deployment health services, BHCSP as a recruitment site has other advantages. The clinic is staffed with trained medical personnel such as physicians, nurse practitioners, and medics, who are available for in-person consultation as needed. BHCSP also houses a mental health department, which is staffed with two psychiatric nurse practitioners, one psychiatrist, three psychologists, two social workers, and two psychiatric technicians.

For interviews with the civilian mothers, family homes or other participant-chosen places of comfort will be utilized. This is appropriate to allow questionnaires to be done in a timely manner with the least amount of inconvenience and discomfort to the participant. If the spouse cannot meet in person, the questionnaires can be sent to her to complete via an email link to a securely encrypted Internet site, or may be completed over the telephone.

Sample/Sampling Plan. The sample will consist of active duty military fathers who have recently returned from a deployment who are accessing services at a large Navy health care clinic, and their female civilian spouses. Active duty service members will be stratified from the clinic patient population on the basis of gender, recruiting for male participants only. The female civilian spouses will be contacted after the initial visit with their active duty husband to set up a time for review of study information and questionnaire completion. If the spouse elects not to participate, data from her husband will be retained to answer aims related to the active duty member. The PI will be enrolling from a large Navy health care clinic in an area of dense military population. This geographic location is a hub for Navy personnel, and many military members live and work in this area.

The eligibility criteria for these parent dyads will be as follows:

(a) Return from deployment of a male Navy parent within the past 3 to 12 months (dating from contact with PI),

(b) Active duty Navy parent married to, and living with, a female civilian parent,

(c) At least one child more than one month old and less than six years of age in their home,

(d) Access to medical services at SPMC.

The rationale for these inclusion criteria is as follows.

(a) Since this is a cross-sectional study, data will be collected at one point in time over a specified time period [150]. A peacetime model developed to explain the emotional cycle of deployment [138] refers to a 3 to 6 month window for the post-deployment phase. Within this window the authors describe an initial honeymoon portion of this phase that is variable for each family. Some researchers[139] have noted that it takes the passage of time post-deployment for relationships to normalize: "During the first few weeks home, the relationship is in a honeymoon stage" (p.431). Knobloch and colleagues (2012) conducted a cross-sectional study of post-deployment factors within six months after deployment, and found that relationship concerns and heightened conflict were more likely to surface at the 3-6 month window in their data collection versus the 1-2 month window. Researchers in the VA system have noted a lack of studies focusing on family issues of veterans in the year following return from deployment [5]. In a large-scale longitudinal study (n=88,235) there was a four-fold increase in active duty member self-reported concerns about interpersonal conflict between the time an active duty member finished deployment and four to ten months later, when a PDHRA was completed [81].

(b) Most male military parents are married to female civilians [9]. This allows for a representation of the current majority military demographic, as well as controlling for gender of the military parent.

(c) Stress in the parenting system during the critical time period of early childhood can have significant effects on children's health and functioning, as

well as on their emotional and behavioral development [12, 34]. The PSI can be used in parents of children who are at least one month old [12].

(d) The completion of the survey for the military member within the SPMC allows for access to in-person physical and mental health services if needed.

The exclusion criteria for the military member will include the following:

(a) Endorsement of suicidal ideation on the day of clinic visit.

(b) Enrollment in the Wounded Warrior program, or ongoing evaluation by a Medical or Physical Evaluation Board.

The rationale for these exclusion criteria is as follows.

(a) The identification of suicidal ideation is a clinical emergency requiring immediate intervention and care of the patient [95]. For the safety of such a patient, immediate in-person consultation with a health care provider is warranted.

(b) According to DOD Instruction 1300.24 [140], those who qualify for the Wounded Warrior program have sustained "a serious injury or illness and/or a severe or catastrophic injury or illness" (p.12). These individuals would be receiving a whole array of services to help with their reintegration, and are dealing with a large number of issues related to physical functioning which would most likely increase their stress load, and confound the potential relationship between deployment factors and parenting stress. These individuals

would most likely require long-term care that may necessitate a Medical Evaluation Board (MEB) or Physical Evaluation Board (PEB) to determine subsequent fitness for duty. Other service members not enrolled in the Wounded Warrior program who are being evaluated by a MEB or PEB have other medical concerns that may confound a potential relationship between deployment factors and parenting stress in the post-deployment period.

Another concern may be that this sampling will result in a very heterogenous sample of military fathers, and perhaps it is advisable to restrict the sample to those younger and junior in rank that will likely have higher parenting stress. After conversation with Dr. Abidin, the developer of the PSI (February, 2012), he recommended including a wide sample as this will reflect increased variance - the Navy sample is already restricted in variance because all enlisted Navy personnel have to have a high school diploma or GED, and must not be abusing alcohol or drugs before entering the service [96].

The sampling plan lacks randomization. There is risk of systematic error due to bias in using one sample at only one deployment health clinic, but the preferred clinic sees a wide variety of Navy personnel returning from deployment, so this concern should be minimized.

Power Analysis. Power analysis was calculated using prior research to estimate effects. There is little available research on deployment factors and parenting stress in active duty populations, and this is a pilot study by the PI. A low to medium effect size (.10 - .15) was used for estimation within a multiple

regression analysis [97, 98]. The use of a large effect size was not supported in the literature, and a very small effect size would not be clinically relevant, and would require an exhaustive sample in terms of time, cost, and resources. The power used was the conventional standard of .80 with a significance level of o.05.

Sample size was calculated by using prior research to estimate the effect of social support within a hierarchical multiple regression analysis using parenting stress scores as the dependent variable. In a longitudinal study of sixty-three mothers of children with mild developmental delays, the R^2 change of social support uniquely explained 22% of the variance in PSI Child Domain score ($p<0.05$), and using the PSI Parent Domain as the dependent variable, uniquely explained 35% of the variance ($p<0.001$). In a study of over one thousand parents in Australia with children under age five, the variables of social support, physical health and coping strategies together uniquely explained 37% of the variance in total parenting stress scores ($p<0.005$) [71]. In a sample of over 900 Canadian parents, financial hardship and social support together uniquely explained 24% of the variance in total parenting stress scores ($p<0.001$) [70]. Using G*Power 3.1 [141, 142] and nQuery Advisor 7.0, several sample size calculations were run using R^2 values of 0.12, 0.22, and 0.35. Using a power of 0.80 with a significance level of 0.05, including nineteen parameters, sample sizes ranged from 146 to 85 to 59. With an expected attrition rate of 10%, 6 to 15 contingency cases will be needed. The total number of evaluable cases ranges from 65 to 161 cases. This reflects a minimum of 65 military fathers, and a minimum of 65

civilian mothers.

The Navy health care clinic where recruitment will take place has an enrolled patient population of 15,000, which does not include shipboard patients who utilize the clinic's ancillary services (e.g. radiology, optometry). Assuming that there are 75 active duty members who walk through the clinic on a daily basis, and of those only 10 are eligible for the study, and of those, only 1 wants to enroll in the study, it would take 13 weeks to recruit 65 service members. Spousal recruitment would be contingent on active duty recruitment, and because some spouses might refuse participation, eight months is a reasonable recruitment time period for a minimum accrual of 65 military fathers and 65 civilian mothers. The expected refusal rate is 23% based on a cross-sectional study of U.S. Army couples [100]: this might mean that 80 active duty fathers would need to be recruited in order to enroll 65 civilian spouses. In a case such as this, data on all 80 fathers, and data on all 65 mothers, would be analyzed as per the specific aims.

Instruments. A copy of each instrument discussed below can be found in Appendix A (p.267-277). The constructs, variables of interest, level of measurement, instruments to measure each, and methods to capture each construct have been delineated (see Table A3 in Appendix A, p.260-263). Also included is a table of each instrument with its associated Cronbach's alpha coefficient and test-retest reliability (see Table A4 in Appendix A, p.264). The entire battery of instruments is expected to take no more than one hour to

complete (see Table A2 in Appendix A, p.259). These instruments will be uploaded into a password-protected iPad, with online survey encryption. No patient identifiers will be entered into the online surveys - numerical study codes will be used throughout.

Parent Profile Form. The PI developed the two-page, 19-item form to be completed by each member of the parent dyad for sociodemographic data (such as the parent's gender, marital status, age, educational level, etc.). Additionally, the form has specific questions for the military member (such as military rank, location of most recent deployment, etc.). The form is a mix of multiple choice and closed-ended questions. Nominal data will be treated as interval by dummy coding.

Parenting Stress Index (PSI). The purpose for developing the PSI was to provide a screening tool for clinicians to identify children in high-risk situations who might benefit from early prevention and intervention programs. The developer of this instrument is Dr. Abidin, professor emeritus at the Curry School at the University of Virginia. Understanding stressors as additive and multidimensional forms the conceptual basis of the instrument. Dr. Abidin uses the assumption that a parent's perception of his or her child can increase that parent's stress, even if an outside observer does not perceive the child's behavior as being a cause for stress.

The Total Stress raw score can range from 101 to 505, with a child age-

normed percentile score ranging from 1 to 100. Scores in the 85th to 89th percentile are considered high, and scores in the 90th percentile and above indicate clinically significant parent-child systems under stress. If scores are in the high or clinically significant range, the developer recommends offering the individual parent referral for professional consultation. Also in the 4th edition, all parenting stress scores are normed for each age of a child from infancy through age 12. There are also norms for parents of children with developmental disabilities. This instrument has been used for parents across a wide cultural continuum [101-103], and has also been used in military families [14, 84, 85, 104, 105].

Deployment Risk & Resiliency Index-2: Combat Experiences, Post-Battle Experiences, and Deployment Concerns. The Deployment Risk and Resiliency Index-2 (DRRI-2) has 14 subscales that can be used independently of each other, and independently of the full index [159]. The index was developed by Drs. King & King [106] to gauge military deployment stress-related reactions, and was the product of a four-year Department of Defense/Department of Veterans Affairs-sponsored grant; the DRRI-2 and its individual subscales have excellent psychometrics [42,108]. The original DRRI and the DRRI-2 instrument have been used in recent active-duty samples with success [42, 93, 107, 108].

The Deployment Concerns scale measures a construct of perceived threat, which reflects fear for personal safety during deployment. Higher scores are indicative of greater perceived threat to one's own safety and well being (range: 12 - 60). The Combat Experiences Scale and the Post-Battle Experiences Scale

refer to objective events experienced, and will be combined for a summative measure of Warfare Exposure [93]. The higher the reported score, the greater is the subject's exposure to combat or to the consequences of combat (range: 28 - 168).

Primary Care PTSD Screen (PC-PTSD). This instrument was developed by mental health practitioners at the Department of Veterans Affairs (VA) [143]. It is now in use throughout VA facilities, and is also part of both the mandatory Post-Deployment Health Assessment (PDHA) and the Post-Deployment Health Re-Assessment (PDHRA) questionnaires administered to all personnel returning from land-based deployments [144]. The four questions are statements to be answered either "yes" or "no." If a person answers "yes" to three out of the four questions, the result is considered positive for PTSD. Previous research has shown that this instrument yields a sensitivity of .78 and a specificity of .87 [143]. A more recent study looking at veterans who have served since 2001, shows a sensitivity of .83, with a specificity of .85 [145]. This instrument has the benefit of having been used frequently in military settings, and thus service members will be familiar with the questions. In addition, because the questions are not specific to a military event, it is applicable for use in civilian spouses as well; in one recent study with military families (n=488), almost 33.7% of non-military parents were above the cutoff for post-traumatic stress symptoms, in comparison to 23.3% of active duty parents [151].

Patient Health Questionnaire-8 (PHQ-8). This instrument was developed by Drs. Robert L. Spitzer, Janet B. W. Williams and Kurt Kroenke with an educational grant from Pfizer Inc.[146] This questionnaire specifically screens for depression, as well as providing information on depression severity. There are a total of 8 questions; scores can range from 0 to 24, and a score of 10 or above has 88% sensitivity and 88% specificity for major depression[147]. A Cronbach's alpha of .86 is reported, with test-retest reliability at .84 [148]. This instrument has been used widely in research with clinical populations since its introduction over ten years ago [148]. It has also been used widely in research within military populations [152,153], and has been incorporated by the Navy into the post-deployment PDHRA questionnaire.

Parenting Stress Index: Life Stress Scale (PSI-LSS). There are 19 items that assess family situational concerns within the past 12 months, such as financial difficulties, geographic relocation, and household changes. Each response is weighted differently for scoring purposes; scores can range from 0 to 79, and can be converted into normed percentiles based on child age grouping [12]. At least three of these items are stressors associated with deployment, specifically "separation," "moved to new location," and "began new job," which would give all active duty respondents an initial score of at least 14, which converts to between the 65th to 75th percentile for children in age groups from infancy through age five. However, there are 16 other responses that are not as closely linked to the deployment experience. The PSI-LSS score is completely

separate from the PSI score, so that there is no comingling of increased stressors from deployment within the past 12 months and the Total Stress PSI score [12].

Medical Outcomes Study: Social Support Survey (MOS: SSS). Drs. Sherbourne and Stewart developed this instrument for use in the Medical Outcomes Study, which was supported by numerous grantors, including the National Institute on Aging, and the RAND Corporation [109]. The authors wished to measure functional support (how interpersonal relationships contribute to specific functions of emotional and tangible support) as opposed to structural support (what type of relationships a person has, and how interconnected these relationships are). A higher summative score indicates more social support. This instrument has been used successfully across age groups [110, 111], income levels [112], and cultures [113-115]. It is most commonly used in health care research with clinical populations, but has also been used with nonclinical samples [116], and in military populations [156, 157].

Daily Spiritual Experience Scale (DSES). The purpose for developing the scale was to measure day-to-day experiences that reflect an "awareness of the divine or transcendent ... 'more than' what we can see or touch or hear" [117]. The developer of the scale is Dr. L. G. Underwood, and it was developed as one part of a larger assessment of religiousness and spirituality, supported by the National Institute on Aging. There are no subscales within the instrument, but questions capture various aspects of the construct such as connection, divine

help, perceptions of divine love, awe, thankfulness, and compassionate love [120]. Higher numbers indicate less spiritual experience. For purposes of ease of interpretation within the study, the scoring direction will be changed, as suggested by the author [117]. Questions from the scale have been used within Navy populations [160], across wide segments of the U.S. population [118], in different cultures [119], and the scale been translated into over twenty languages [58].

Procedures. Institutional Review Board (IRB) approval will be requested for this study from two sites: the Naval Medical Center Portsmouth IRB (which has oversight over all military research in the geographic region), and the University of Virginia IRB. The Naval Medical Center Portsmouth IRB will be the IRB of record. Additionally, the Uniformed Services University of Health Sciences IRB will also conduct an administrative review as part of TriService Nursing Research Program grant funding requirements. No procedures will be conducted until IRB approval has been obtained from all locations. Once IRB approval has been obtained, several orientations to the study on different days will be conducted in the primary care health clinic of the selected site. These orientations will be brief 15-minute overviews during lunchtime, with at least 15 minutes allotted for questions. The purpose of these meetings will be to introduce the investigator (the PI) to the clinic staff, discuss the research study, and answer any questions that the staff may have about the study. The steps of the procedure are listed below.

1. At the start of the study, the PI will place study recruitment posters in the following waiting areas at the health care clinic site: primary care, acute care, immunizations, pharmacy, laboratory, aviation medicine, and occupational medicine (see Appendix B, p.278). All items that need to be secured (e.g. iPads, laptops) will be secured in a locked cabinet behind a locked door within the clinic.

2. The clinic staff will be provided with study wallet cards and study brochures to display as patients check-in for appointments throughout the clinic (see Appendix B, p.279-280).

3. The PI will be stationed in the pharmacy waiting area at a kiosk with two chairs, with the same study wallet cards and study brochures prominently displayed on the table. During clinic hours the PI, a Commander in the United States Navy, will be in the clinic in "business casual" civilian attire to avoid the perception of coercion.

4. As patients come through the pharmacy area, the PI will hand out study wallet cards to male service members wearing the uniform of the day. The PI will invite them to listen to information about the study, and ask any questions they may have.

5. If the service member is interested, the PI will invite them to answer the questions on the study screening instrument (see Appendix B, p.282).

6. If the service member does not meet the eligibility criteria, the PI will follow the script on the screening instrument. If the individual endorses suicidal

ideation (an exclusion criteria), the PI will escort him to the acute care area for consultation and evaluation.

7. If the patient meets the eligibility criteria, the study investigator will briefly discuss the study with them. The active duty member will be asked to complete the survey in the clinic. If the current time is not convenient, the active duty member can return to the clinic at a later date and time to participate in the study. If the active duty member decides against enrolling in the study, the PI will thank him for his time and say goodbye.

8. If the active duty member is interested in participating in the study, then the PI will show him to a private room in the clinic. Here the PI will review with him how to use the iPad, and the participant will read the survey information sheet for fathers on the iPad (see Appendix B, p.283). If the active duty member decides against enrolling in the study, the PI will thank him for his time and say goodbye.

9. If the service member wants to continue with the survey, the PI will ask the participant to fill out the Parent Profile Form with the PI present in case of questions, and make available snack items and water. The PI will also collect his phone number for entry into a password-protected computerized logbook, which will include his code number, the first name of his youngest child, and a letter code to signify that he is the father. The participant will give the PI his military ID card to keep while he is answering the questions on the iPad, as a security measure to ensure that the device is not lost.

10. The participant will be automatically directed to the remainder of the survey on the iPad (Parenting Stress Index, Deployment Concerns Scale, Combat Experiences Scale, Post-Battle Experiences Scale, PC-PTSD, PHQ-8, Social Support Survey Instrument, and the Daily Spiritual Experience Scale). The survey data will be kept within a securely encrypted assessment website.

11. The PI will leave the room to go back to the waiting room, but will leave her study phone number in case he has questions or experiences problems during the assessment. He will be asked to call the PI if he becomes emotionally upset while answering the questionnaires, at which time the PI will escort him to the Mental Health Clinic. When the service member is finished with the survey, he will return the iPad to the PI, and she will return the ID card to him, as well as a mental health contact card (see Appendix B, p.289).

12. The PI will ask the active duty member if he would be willing to contact his spouse so that the PI could ask her if she would be willing to complete similar questionnaires also. If he is willing, he will call his spouse on an available phone, and speak briefly to her, and then hand the phone to the PI, who will follow the phone contact script outlined in Appendix B (p.288).

13. If the spouse is not at home when the active duty member calls her, the PI will ask him for permission to call their home at a later time as delineated in the permission to call spouse script (see Appendix B, p.286). The PI will also ask him if he would be willing to take home a study postcard to give to his wife (see Appendix B, p.284).

14. If he agrees, the PI will give him the study postcard, collect the contact phone number, and leave a message as per the phone message script (see Appendix B, p.287). If the PI is able to reach her, the PI will follow the phone contact script delineated in Appendix B (p.288).

15. The PI will ask the spouse if she is willing to meet with the PI, and if so, will set up a time to meet with the spouse at her home, or another location that is convenient for the spouse. The PI will collect the meeting address for entry into the password-protected computerized logbook, including the husband's code number, phone number, and first name of their youngest child.

16. At the appointment with the spouse, the PI will discuss the study with her, discuss how to use the iPad, and ask her to read the survey information sheet for mothers on the iPad (see Appendix B, p.285). If the spouse decides against enrolling in the study, the PI will thank her for her time and say goodbye. The active duty military member will be retained in the study and his data will be analyzed separately as per aims 1, 2, and 3. Recruitment, however, will continue until at least the minimum required number of dyads (65) is obtained, or until the eight month recruitment window is complete.

17. If the spouse agrees to participate in the study, then the PI will ask her to fill out the Parent Profile Form with the PI present in case of questions, and make available snack items and water. The PI will also collect a contact phone number for the spouse, and enter this into the password-protected computerized logbook, which will include her code number (the same as her husband's), the

first name of their youngest child, and a letter code to signify that she is the mother.

18. The participant will be automatically directed to the securely encrypted assessment website for the remainder of the questionnaires (Parenting Stress Index, PC-PTSD, PHQ-8, Social Support Survey Instrument, and the Daily Spiritual Experience Scale).

19. If in the home of the spouse, the PI will ask if she can watch the children while the participant is answering the questions. If the children are not home, the PI will ask if there is another room that she can go to during the assessment so that the spouse can answer privately, or if this is not possible, the PI will sit out of the way and engage in another silent activity (e.g. reading).

20. When the spouse has completed the survey, she will be presented with a $25 honorarium, and a mental health contact card (Appendix B, p.289). She will be thanked for her time, and the PI will say goodbye and leave.

21. If either the active duty member or the spouse would like to have a copy of the general results from the study, they will put their name and address on an envelope, and this will be placed in a locked cabinet. The electronic logbook with the list of the participant codes (study number, first name of youngest child, and (D)ad or (M)om signifier) and contact telephone numbers will be password protected, and will be within the PI's purview at all times, or will be locked in a cabinet behind a locked door at the recruitment site.

22. The contact telephone numbers will be kept during the study in the

event that a parent scores above the 85th percentile on total parenting stress, and/or screens positive for PTSD or depression. In any of these scenarios, the parent will be contacted within 72 hours, and informed of their high score or their positive screen. They will be informed that it is a recommendation of the instrument developer that they receive follow-up. They will be asked if they would like the PI to initiate a referral, or if they would like to self-refer by making an appointment using the mental health contact card (see Appendix B, p.289). After all data has been analyzed, the contact telephone numbers will be destroyed.

23. To enhance recruitment and broaden the population that is exposed to information about the study, the PI will give several brief study informational sessions at the Hampton Roads Area-Wide Chaplain Training, which is conducted monthly. The PI will have informational business cards available, as well as study brochures, and study posters, for the attendees to peruse. These materials can be taken and passed along to service members who might be eligible for the study (see Appendix B, p.278-280).

24. Additionally, the local Fleet and Family Support Center will assist the research study by sending several email notifications about the study to its distribution list, which includes all ombudsmen and family readiness groups (see Appendix B, p.281). In all scenarios, individual service members would contact the study PI directly to determine eligibility, and if eligible and willing, these participants would meet the PI at the health care clinic recruitment site.

Data Analysis. Strategies for analysis of the data have been tabulated in Appendix A under Table A5 (p.265). Level of significance for all analyses will be set at 0.05. Preliminary analysis of the data will include descriptive statistics of demographic and study variables, to include means and standard deviations for continuous level variables, and frequencies with percentages for categorical variables. Assumption testing will include univariate and multivariate normality, homoscedasticity, and exploration of correlations and linear relationships between the independent and dependent variables. The internal consistency of instruments for the study sample will be analyzed using Cronbach's alpha reliability coefficients. Pearson correlational analysis, and t-test analysis will be used to evaluate univariate relationships among the concepts of deployment factors, parenting stress, spirituality, and social support. As this is a feasibility study, multiple hierarchical regression will be used in the statistical analysis for all aims in order to develop models to be used in future studies with an adequately powered sample.

For aim 1, which is to explore the relationship between deployment factors and parenting stress, controlling for demographic variables: a) in recently returned male active duty parents, and b) in female civilian spouses of the recently returned active duty parents, several analyses will be performed. A bivariate regression of each of the four deployment factors on the parenting stress score will determine if any one deployment factor can explain the variance in parenting stress scores. The four factors are 1) perceived threat of most recent

deployment, 2) warfare exposure of most recent deployment, 3) number of times deployed in the past five years, and 4) length of time away from home related to deployments in the past five years.

Then a hierarchical multiple regression will be analyzed. The major independent variables for each parent in the first block will be individual factors (age, years of education, employment status), in the second block will be family factors (number of children, length of marriage, child developmental disability, military rank), in the third block will be concurrent stressors (PC-PTSD, PHQ-8, PSI-LSS), and in block four the four deployment factors listed above will be included. The total number of parameters for this analysis will be fourteen. Military rank serves as a proxy for socioeconomic status, as these two indicators are highly correlated [94, 121, 122, 163], and military rank has been used as a proxy for socioeconomic status in a recent study looking at military dyads [100]. Childcare hours will likely not be included in the model because it will probably be highly correlated with employment status. Number of years in the military will likely not be included in the model because it is often highly correlated with military rank [122]. Ages of children (coded categorically) will not be used because the PSI is measuring the parenting stress of raising one particular child [12], which in this study is the child under the age of six about whom the parent is most concerned; the parenting stress score is not a composite value across all children. The dependent variable will be the parenting stress score for the parent whose individual factors were entered in the first block.

For aim 2, which is to examine whether and to what extent social support and spirituality impact parenting stress while controlling for demographic variables: a) in recently returned male active duty parents, and b) in female civilian spouses of the recently returned active duty parents, two hierarchical multiple regressions will be analyzed. Controlling for demographic and stressor variables as delineated in blocks 1, 2, and 3 above, block 4 will include spirituality, resulting in a total of ten parameters. The second hierarchical multiple regression will substitute social support for spirituality in block 4. The dependent variable will be the parenting stress score for each parent. Deployment factors will not be included in this analysis.

For aim 3, which is to examine the possible moderating effect of social support and spirituality on the relationship between deployment factors and parenting stress, multiple hierarchical regression will again be utilized. Demographic and stressor factors will be entered in blocks 1, 2, and 3, all four deployment factors and spirituality will be entered in block 3, and in block 4 the interaction terms between spirituality and each deployment factor variable will be included. The dependent variable will again be the parenting stress score of the parent whose individual factors were entered in block 1. The same multiple regression will then be run again, substituting social support for spirituality. The total number of parameters within the hierarchical regression analysis would be nineteen.

The data will be collected via computerized surveys, and will be analyzed and interpreted using SPSS Version 20 (IBM Statistics). Data from participants who withdraw from the study will be destroyed, and will not be included in the analysis.

Timeline. The research study timetable is presented schematically over a 24-month period, with estimated start/stop dates for each phase (see Table A6 in Appendix A, p.266). A five to eight month data collection plan is estimated, and project tasks overlap to keep within a reasonable timeline.

Potential Limitations and Strategies to Overcome. There are five to consider.

(1) Sample bias. Systematic error due to sampling will be addressed by recruiting from a large deployment health clinic with a wide range of Navy personnel.

(2) Lack of participant disclosure. Active duty participants may not feel that they want to respond honestly to questions regarding warfare exposure, or parenting stress, especially if the survey is not anonymous [161, 162]. With a large sample there is greater variation in responses, but with a small sample, it is difficult to capture the population variability. An important strategy is the creation of rapport with the participants, by honest discussion of the study during informed consent, and allowing privacy during the answering of these questions. For the parenting stress index in particular, there is a defensive

responding score that could help to highlight those participants whose answers may have been misleading.

(3) Another potential limitation reflects the nature of volunteer enrollment – volunteers who enroll may reflect a certain type of individual who is not generalizable to the population. However, health care clinics see the whole spectrum of active duty service members, from junior enlisted up through senior officer ranks. Based on prior studies in military populations, the rate of refusal is less than 25%, indicating that a very large majority of military members are of a volunteering spirit [100].

(4) Potential difficulty enrolling both members of a parent dyad. The strategy to address this involves having the active duty member complete his part of the study first. Immediately after he is finished with his questionnaires, he will call his spouse in the clinic with the PI there, so that the PI can answer any questions the spouse may have over the phone, and can make a follow-up appointment at that time. Dyad enrollment is difficult, and military dyad studies often target couples' counseling for enrollment [123, 124]. However, this type of dyad is already under acknowledged stress, which would be a confounding variable, and this type of enrollment would make it difficult to extrapolate results to a generalizable population.

Dissemination: Research findings will be written and submitted for publication to a peer-reviewed journal. A poster and/or oral presentation of preliminary findings will be given at the Phyllis J. Verhonick Research Nursing

Course in 2014, and a poster and/or oral presentation of final analyses will be given at the Southern Nursing Research Society in 2015.

References

1. Burton T, Farley D, Rhea A. (2009). Stress-induced somatization in spouses of deployed and nondeployed servicemen. *Journal of the American Academy of Nurse Practitioners*, *21*(6), 332-339.

2. Caska CM, Renshaw KD. (2011). Perceived burden in spouses of National Guard/Reserve service members deployed during Operations Enduring and Iraqi Freedom. *Journal of Anxiety Disorders*, *25*(3), 346-351.

3. Aranda MC, Middleton LS, Flake E, Davis BE. (2011). Psychosocial screening in children with wartime-deployed parents. *Military Medicine*, *176*(4), 402-407.

4. Barker LH, Berry KD. (2009). Developmental issues impacting military families with young children during single and multiple deployments. *Military Medicine*, *174*(10), 1033-1040.

5. Sayers SL, Farrow VA, Ross J, Oslin DW. (2009). Family problems among recently returned military veterans referred for a mental health evaluation. *Journal of Clinical Psychiatry*, *70*(2), 163-170.

6. Jensen PS, Martin D, Watanabe H. (1996). Children's response to parental separation during operation desert storm. *Journal of the American Academy of Child & Adolescent Psychiatry*, *35*(4), 433-441.

7. Lester P, Peterson K, Reeves J et al. (2010). The long war and parental combat deployment: Effects on military children and at-home spouses. *Journal of the American Academy of Child & Adolescent Psychiatry*, *49*(4), 310-320.

8. Palmer C. (2008). A theory of risk and resilience factors in military families. *Military Psychology*, *20*(3), 205-217. doi:10.1080/08995600802118858

9. U.S. Department of Defense. (2012). *2011 demographics profile of the military community.* Retrieved from http://www.militaryonesource.mil/12038/Project%20Documents/MilitaryHOMEFRONT/Reports/2011_Demographics_Report.pdf

10. U.S. Department of Defense. (2010). *Deployment-limiting medical conditions for service members and DoD civilian employees*. Retrieved from http://www.dtic.mil/whs/directives/corres/pdf/649007p.pdf

11. U.S. Military Personnel Manual. (2003). *Temporary Additional Duty (TEMADD) orders*. Retrieved from http://www.public.navy.mil/bupers-npc/reference/milpersman/1000/1300Assignment/Documents/1320-314.pdf

12. Abidin RR. (2012). *Parenting Stress Index, fourth edition: Professional manual.* Odessa, FL: Psychological Assessment Resources.

13. Murphy DA, Marelich WD, Armistead L, Herbeck DM, Payne DL. (2010). Anxiety/stress among mothers living with HIV: Effects on parenting skills and child outcomes. *AIDS Care*, *22*(12), 1449-1458. doi:10.1080/09540121.2010.487085

14. Flake EM, Davis BE, Johnson PL, Middleton LS. (2009). The psychosocial effects of deployment on military children. *Journal of Developmental & Behavioral Pediatrics*, *30*(4), 271-278.

15. Hamlin-Glover DL. (2009). *Spirituality, religion, and resilience among military families* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Order No. 3442121)

16. U.S. Army. (2010). Health promotion, risk reduction, suicide prevention. Retrieved Nov 12, 2012 from http://csf.army.mil/downloads/HP-RR-SPReport2010.pdf

17. Wool ZH, Messinger SD. (2012). Labors of love: The transformation of care in the Non-Medical Attendant program at Walter Reed Army Medical Center. *Medical Anthropology Quarterly*, *26*(1), 26-48. doi:10.1111/j.1548-1387.2011.01195.x

18. Brown J. (2012, October 22). 12 Years Later: Reassessing the War in Afghanistan. *OpEd News*. Retrieved from http://www.opednews.com

19. Hosek J. (2011). *How is deployment to Iraq and Afghanistan affecting U.S. service members and their families? An overview of early RAND research on the topic.* RAND: National Defense Research Institute. Retrieved from http://www.rand.org/content/dam/rand/pubs/occasional_papers/2011/RAND_OP316.pdf20

20. Tanielian T, Jaycox LH. (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery*. RAND: Center for Military Health Policy Research. Retrieved from http://www.rand.org/pubs/monographs/MG720.html

21. Giles S. (2005). Army dependents: Childhood illness and health provision. *Community Practitioner: The Journal of the Community Practitioners' & Health Visitors' Association*, *78*(6), 213-217.

22. Davis J, Ward DB, Storm C. (2011). The unsilencing of military wives: Wartime deployment experiences and citizen responsibility. *Journal of Marital and Family Therapy*, *37*(1), 51-63.

23. Mansfield AJ, Kaufman JS, Marshall SW, Gaynes BN, Morrissey JP, Engel CC. (2010). Deployment and the use of mental health services among U.S. Army wives. *The New England Journal of Medicine*, *362*(2), 101-109.

24. Faber AJ, Willerton E, Clymer SR, MacDermid SM, Weiss HM. (2008). Ambiguous absence, ambiguous presence: A qualitative study of military reserve families in wartime. *Journal of Family Psychology*, *22*(2), 222-230.

25. Lapp CA, Taft LB, Tollefson T, Hoepner A, Moore K, Divyak K. (2010). Stress and coping on the home front: Guard and reserve spouses searching for a new normal. *Journal of Family Nursing*, *16*(1), 45-67.

26. Lara-Cinisomo S, Chandra A, Burns RM et al. (2012). A mixed-method approach to understanding the experiences of non-deployed military caregivers. *Maternal and Child Health Journal*, *16*(2), 374-384.

27. Eskin V. (2011). Ladies in waiting: A group intervention for families coping with deployed soldiers. *International Journal of Group Psychotherapy*, *61*(3), 414-437.

28. Chartrand MM, Frank DA, White LF, Shope TR. (2008). Effect of parents' wartime deployment on the behavior of young children in military families. *Archives of Pediatrics & Adolescent Medicine*, *162*(11), 1009-1014.

29. Gorman GH, Eide M, Hisle-Gorman E. (2010). Wartime military deployment and increased pediatric mental and behavioral health complaints. *Pediatrics*, *126*(6), 1058-1066.

30. Mansfield AJ, Kaufman JS, Engel CC, Gaynes BN. (2011). Deployment and mental health diagnoses among children of US Army personnel. *Archives of Pediatrics & Adolescent Medicine*, *165*(11), 999-1005.

31. Gibbs DA, Martin SL, Kupper LL, Johnson RE. (2007). Child maltreatment in enlisted soldiers' families during combat-related deployments. *Journal of the American Medical Association*, *298*(5), 528-535.

32. Chandra A, Martin LT, Hawkins SA, Richardson A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. *Journal of Adolescent Health*, *46*(3), 218-223.

33. Nash WP, Vasterling J, Ewing-Cobbs L et al. (2010). Consensus recommendations for common data elements for operational stress research and surveillance: Report of a federal interagency working group. *Archives of Physical Medicine & Rehabilitation*, *91*(11), 1673-1683.

34. Deater-Deckard K. (2004). *Parenting stress.* New Haven, CT, US: Yale University Press.

35. Oxford ML, Lee JO. (2011). The effect of family processes on school achievement as moderated by socioeconomic context. *Journal of School Psychology*, *49*(5), 597-612. doi:10.1037/a0012954

36. Taylor CA, Guterman NB, Lee SJ, Rathouz PJ. (2009). Intimate partner violence, maternal stress, nativity, and risk for maternal maltreatment of young children. *American Journal of Public Health*, *99*(1), 175-183. doi:10.2105/AJPH.2007.126722

37. Cozza SJ, Guimond JM, McKibben JB. et al. (2010). Combat-injured service members and their families: The relationship of child distress and spouse-perceived family distress and disruption. *Journal of Traumatic Stress*, *23*(1), 112-115.

38. Danseco ER, Holden EW. (1998). Are there different types of homeless families? A typology of homeless families based on cluster analysis. *Family Relations, 47*(2), 159-165. doi:10.2307/585620

39. Fite PJ, Greening L, Stoppelbein L. (2008). Relation between parenting stress and psychopathic traits among children. *Behavioral Sciences & the Law*, *26*(2), 239-248.

40. Mulligan K, Jones N, Woodhead C, Davies M, Wessely S, Greenberg N. (2010). Mental health of UK military personnel while on deployment in Iraq. *British Journal of Psychiatry*, *197*405-410.

41. Iversen AC, Fear NT, Ehlers A et al. (2008). Risk factors for post-traumatic stress disorder among UK Armed Forces personnel. *Psychological Medicine*, *38*(4), 511-522.

42. Vogt DS, Smith BN, King DW, King LA, Vasterling J. (2012). *Manual for the Deployment Risk and Resilience Inventory-2 (DRRI-2): A collection of measures for studying deployment-related experiences of military veterans*. Boston, MA: National Center for PTSD.

43. Hoge CW, Auchterlonie JL, Milliken CS. (2006). Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *Journal of the American Medical Association*, *295*(9), 1023-1032.

44. Sareen J, Cox BJ, Afifi TO. et al. (2007). Combat and peacekeeping operations in relation to prevalence of mental disorders and perceived need for mental health care: Findings from a large representative sample of military personnel. *Archives of General Psychiatry*, *64*(7), 843-852.

45. Berz JB, Taft CT, Watkins LE, Monson CM. (2008). Associations between PTSD symptoms and parenting satisfaction in a female veteran sample. *Journal of Psychological Trauma*, *7*(1), 37-45. doi:10.1080/19322880802125969

46. Cohen E, Zerach G, Solomon Z. (2011). The implication of combat-induced stress reaction, PTSD, and attachment in parenting among war veterans. *Journal of Family Psychology*, *25*(5), 688-698.

47. Samper RE, Taft CT, King DW, King LA. (2004). Posttraumatic stress disorder symptoms and parenting satisfaction among a national sample of male Vietnam veterans. *Journal of Traumatic Stress*, *17*(4), 311-315.

48. Taft CT, Schumm JA, Panuzio J, Proctor SP. (2008). An examination of family adjustment among Operation Desert Storm veterans. *Journal of Consulting & Clinical Psychology*, *76*(4), 648-656.

49. Gewirtz AH, Polusny MA, DeGarmo DS, Khaylis A, Erbes CR. (2010). Posttraumatic stress symptoms among National Guard soldiers deployed to Iraq: Associations with parenting behaviors and couple adjustment. *Journal of Consulting and Clinical Psychology*, *78*(5), 599-610.

50. Ruscio AM, Weathers FW, King LA, King DW. (2002). Male war-zone veterans' perceived relationships with their children: The importance of emotional numbing. *Journal of Traumatic Stress*, *15*(5), 351-357. doi:10.1023/A:1020125006371

51. Rosenheck R, Fontana A. (1998). Transgenerational effects of abusive violence on the children of Vietnam combat veterans. *Journal of Traumatic Stress*, *11*(4), 731-742.

52. Banyard VL, Williams LM, Siegel JA. (2003). The impact of complex trauma and depression on parenting: An exploration of mediating risk and protective factors. *Child Maltreatment*, *8*(4), 334-349.

53. Owen AE, Thompson MP, Kaslow NJ. (2006). The mediating role of parenting stress in the relation between intimate partner violence and child

adjustment. *Journal of Family Psychology*, *20*(3), 505-513. doi:10.1037/0893-3200.20.3.505

54. Chandra A, Lara-Cinisomo S, Jaycox LH et al. (2010). Children on the home front: The experience of children from military families. *Pediatrics*, *125*(1), 16-25.

55. Khaylis A, Polusny MA, Erbes CR, Gewirtz A, Rath M. (2011). Posttraumatic stress, family adjustment, and treatment preferences among National Guard soldiers deployed to OEF/OIF. *Military Medicine*, *176*(2), 126-131.

56. Crow JR, Seybold AK. (2012). Discrepancies in military middle-school adolescents' and parents' perceptions of family functioning, social support, anger frequency, and concerns. *Journal of Adolescence*, *36*(1), 1-9. doi:10.1016/j.adolescence.2012.08.004

57. Cain DS. (2007). The effects of religiousness on parenting stress and practices in the African American family. *Families in Society*, *88*(2), 263-272.

58. Underwood LG. (2011). The Daily Spiritual Experience Scale: Overview and results. *Religions*, *2*(1), 29-50. doi:10.3390/rel2010029

59. Schneider MA, Mannell RC. (2006). Beacon in the storm: An exploration of the spirituality and faith of parents whose children have cancer. *Issues in Comprehensive Pediatric Nursing*, *29*(1), 3-24.

60. Kloosterhouse V, Ames BD. (2002). Families' use of religion/spirituality as a psychosocial resource. *Holistic Nursing Practice*, *17*(1), 61-76.

61. McEvoy M, Lee C, O'Neill A et al. (2005). Are there universal parenting concepts among culturally diverse families in an inner-city pediatric clinic? *Journal of Pediatric Health Care*, *19*(3), 142-150.

62. Douglas AN, Jimenez S, Lin H-J, Frisman LK. (2008). Ethnic differences in the effects of spiritual well-being on long-term psychological and behavioral outcomes within a sample of homeless women. *Cultural Diversity and Ethnic Minority Psychology*, *14*(4), 344-352. doi:10.1037/1099-9809.14.4.344

63. Kor A, Mikulincer M, Pirutinsky S. (2012). Family functioning among returnees to Orthodox Judaism in Israel. *Journal of Family Psychology*, *26*(1), 149-158. doi:10.1037/a0025936

64. Carothers SS, Borkowski JG, Lefever JB, Whitman TL. (2005). Religiosity and the socioemotional adjustment of adolescent mothers and their children. *Journal of Family Psychology, 19*(2), 263-275.

65. Prado G, Feaster DJ, Schwartz SJ, Pratt IA, Smith L, Szapocznik J. (2004). Religious involvement, coping, social support, and psychological distress in HIV-seropositive African American mothers. *AIDS and Behavior*, *8*(3), 221-235.

66. Lauterbach D, Bak C, Reiland S, Mason S, Lute MR, Earls L. (2007). Quality of parental relationships among persons with a lifetime history of posttraumatic stress disorder. *Journal of Traumatic Stress*, *20*(2), 161-172.

67. Ray SL, Vanstone M. (2009). The impact of PTSD on veterans' family relationships: An interpretative phenomenological inquiry. *International Journal of Nursing Studies*, *46*(6), 838-847.

68. Punamaki R-L, Komproe I, Qouta S, El-Masri M, de Jong JTVM. (2005). The deterioration and mobilization effects of trauma on social support: Childhood maltreatment and adulthood military violence in a Palestinian community sample. *Child Abuse & Neglect*, *29*(4), 351-373.

69. Black M, Schuler M, Nair P. (1993). Prenatal drug exposure: Neurodevelopmental outcome and parenting environment. *Journal of Pediatric Psychology*, *18*(5), 605-620.

70. McConnell D, Breitkreuz R, Savage A. (2011). From financial hardship to child difficulties: Main and moderating effects of perceived social support. *Child: Care, Health and Development*, *37*(5), 679-691. doi:10.1111/j.1365-2214.2010.01185.x

71. Cooklin AR, Giallo R, Rose N. (2012). Parental fatigue and parenting practices during early childhood: An Australian community survey. *Child: Care Health & Development*, *38*(5), 654-664. doi:10.1111/j.1365-2214.2011.01333.x

72. Guralnick MJ, Hammond MA, Neville B, Connor RT. (2008). The relationship between sources and functions of social support and dimensions of child- and parent-related stress. *Journal of Intellectual Disability Research*, *52*(12), 1138-1154. doi:10.1111/j.1365-2788.2008.01073.x

73. Dunn J, Davies LC, O'Connor TG, Sturgess W. (2000). Parents' and partners' life course and family experiences: Links with parent-child relationships in different family settings. *Journal of Child Psychology and Psychiatry*, *41*(8), 955-968. doi:10.1111/1469-7610.00684

74. Baor L, Soskolne V. (2012). Mothers of IFV twins: The mediating role of employment and social coping resources in maternal stress. *Women & Health*, *52*(3), 252-264. doi:10.1080/03630242.2012.662934

75. Ostberg M, Hagekull B. (2000). A structural modeling approach to the understanding of parenting stress. *Journal of Clinical Child Psychology*, *29*(4), 615-625.

76. Esdaile SA, Greenwood KM. (2003). A comparison of mothers' and fathers' experience of parenting stress and attributions for parent child interaction outcomes. *Occupational Therapy International*, *10*(2), 115-126.

77. Smith TB, Oliver MNI, Innocenti MS. (2001). Parenting stress in families of children with disabilities. *American Journal of Orthopsychiatry*, *71*(2), 257-261. doi:10.1037/0002-9432.71.2.257

78. Trute B, Hiebert-Murphy D. (2002). Family adjustment to childhood developmental disability: A measure of parent appraisal of family impacts. *Journal of Pediatric Psychology*, *27*(3), 271-280. doi:10.1093/jpepsy/27.3.271

79. Sturge-Apple ML, Skibo MA, Rogosch FA, Ignjatovic Z, Heinzelman W. (2011). The impact of allostatic load on maternal sympathovagal functioning in stressful child contexts: Implications for problematic parenting. *Development & Psychopathology*, *23*(3), 831-844. doi:10.1017/S0954579411000332

80. Wilson MH. (2009). *The associations between social support, economic strain, and parenting stress among at-risk families* (Master's thesis). Retrieved from Clinical Psychology.

81. Milliken CS, Auchterlonie JL, Hoge CW. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *Journal of the American Medical Association*, *298*(18), 2141-2148.

82. Willerton E, Schwarz RL, Wadsworth SMM, Oglesby MS. (2011). Military fathers' perspectives on involvement. *Journal of Family Psychology*, *25*(4), 521-530.

83. Hayes J, Wakefield B, Andresen EM et al. (2010). Identification of domains and measures for assessment battery to examine well-being of spouses of OIF/OEF veterans with PTSD. *Journal of Rehabilitation Research and Development*, *47*(9), 825-840.

84. Kelley ML, Herzog-Simmer PA, Harris MA. (1994). Effects of military-induced separation on the parenting stress and family functioning of deploying mothers. *Military Psychology*, *6*(2), 125-138.

85. Todd BL. (2011). *Associations between co-parenting, parenting stress, and military deployment* (Master's thesis). Retrieved from ProQuest Dissertations and Theses. (Order No. 1504927)

86. Feigelman S. (2011). Growth, development, and behavior: Overview and assessment of variability. In: Kliegman R, Stanton B, Geme JS, Schor N, Behrman R (Eds.), *Nelson Textbook of Pediatrics* (pp. 26-40). Philadelphia: Elsevier Saunders.

87. Noel M, Peterson C, Jesso B. (2008). The relationship of parenting stress and child temperament to language development among economically disadvantaged preschoolers. *Journal of Child Language*, *35*(4), 823-843.

88. U.S. Navy Medicine. (2012). *Military treatment facility*. Retrieved from http://www.med.navy.mil/bumed/CaseManagement/Pages/Lesson3.aspx#facility

89. Lovejoy MC, Graczyk PA, O'Hare E, Neuman G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, *20*(5), 561-592.

90. Cozza SJ, Chun RS, Polo JA. (2005). Military families and children during Operation Iraqi Freedom. *Psychiatric Quarterly*, *76*(4), 371-378.

91. Dempsey ME. (2012, February 20). Military health care system: Chairman's corner [Online newsgroup post].

92. Korb L (2011, March 10). The Pentagon's Achilles' heel. *Los Angeles Times*. Retrieved from http://articles.latimes.com

93. Vogt D, Smith B, Elwy R et al. (2011). Predeployment, deployment, and postdeployment risk factors for posttraumatic stress symptomatology in female and male OEF/OIF veterans. *Journal of Abnormal Psychology*, *120*(4), 819-831.

94. Raiha NK, Soma DJ. (1997). Victims of child abuse and neglect in the U.S. Army. *Child Abuse & Neglect*, *21*(8), 759-768.

95. American Psychological Association. *Suicide*. Retrieved 01 January, 2013 from http://www.apa.org/topics/suicide/index.aspx

96. U.S. Navy. *Joining the Navy: Qualifications & commitment*. Retrieved 20 December, 2012 from http://www.navy.com/joining/qualifications.html

97. Cohen J, Cohen P, West SG, Aiken LS. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Earlbaum Associates.

98. Soper DS. (2012). A-priori sample size calculator for multiple regression (online software). Retrieved from http://www.danielsoper.com/statcalc3

99. American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: Text revision* (4th ed.). Arlington, VA: American Psychiatric Association.

100. Melvin KC, Gross D, Hayat MJ, Jennings BM, Campbell JC. (2012). Couple functioning and post-traumatic stress symptoms in US Army couples: The role of resilience. *Research in Nursing and Health*, *35*(2), 164-177. doi:10.1002/nur.21459

101. Huhtala M, Korja R, Lehtonen L et al. (2011). Parental psychological well-being and cognitive development of very low birth weight infants at 2 years. *Acta Paediatrica*, *100*(12), 1555-1560.

102. Pimentel MJ, Vieira-Santos S, Santos V, Vale MC. (2011). Mothers of children with attention deficit/hyperactivity disorder: Relationship among

parenting stress, parental practices and child behaviour. *Attention Deficit and Hyperactivity Disorders*, *3*(1), 61-68.

103. Potterton J, Stewart A, Cooper P. (2007). Parenting stress of caregivers of young children who are HIV Positive. *African Journal of Psychiatry*, *10*(4), 210-214.

104. Budash DM. (2009). *Military-induced separation: The influence of social support, parental stress, and child social-emotional functioning on parent-child interaction quality* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Order No. 3366259)

105. Fuls SJ. (1994). *Parenting attitudes and behaviors in Vietnam veterans* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Order No. 9434677)

106. King DW, King LA, Vogt DS. (2003). *Manual for the Deployment Risk and Resilience Inventory (DRRI): A collection of measures for studying deployment-related experiences of military veterans.* Boston, MA: National Center for PTSD.

107. King DW, Taft C, King LA, Hammond C, Stone ER. (2006). Directionality of the association between social support and posttraumatic stress disorder: A longitudinal investigation. *Journal of Applied Social Psychology*, *36*(12), 2980-2992. doi:10.1111/j.0021-9029.2006.00138.x

108. Vogt DS, Smith BN, King LA, King DW, Knight J, Vasterling JJ. (2013). Deployment Risk and Resilience Inventory-2 (DRRI-2): An updated tool

for assessing psychosocial risk and resilience factors among service members and veterans. *Journal of Traumatic Stress*, *26*(6), 710-717. doi:10.1002/jts.2013.26.issue-6

109. Sherbourne CD, Stewart AL. (1991). The MOS Social Support Survey. *Social Science & Medicine*, *32*(6), 705-714.

110. Mouton CP, Rodabough RJ, Rovi SLD, Brzyski RG, Katerndahl DA. (2010). Psychosocial effects on physical and verbal abuse in postmenopausal women. *Annals of Family Medicine*, *8*(3), 206-213. doi:10.1370/afm.1095

111. Ngai F-W, Ngu S-F. (2012). Psychometric properties of a Chinese version of the Medical Outcomes Study family and marital functioning measures in Hong Kong Chinese childbearing families. *Community Mental Health Journal*, *48*(5), 634-642. doi:10.1007/s10597-011-9450-5

112. Gjesfjeld CD, Greeno CG, Kim KH. (2008). A confirmatory factor analysis of an abbreviated social support instrument: The MOS-SSS. *Research on Social Work Practice*, *18*(3), 231-237. doi:10.1177/1049731507309830

113. Costa-Requena G, Ballester Arnal R, Gil F. (2013). Perceived social support in Spanish cancer outpatients with psychiatric disorder. *Stress and Health*, *29*(5), 421-426. doi:10.1002/smi.2488114.

114. Southivong B, Ichikawa M, Nakahara S, Southivong C. (2013). A cross-sectional community study of post-traumatic stress disorder and social support in Lao People's Democratic Republic. *Bulletin of the World Health Organization*, *91*(10), 765-772. doi:10.2471/BLT.12.115311115.

115. Shyu Y-IL, Tang W-R, Liang J, Weng L-J. (2006). Psychometric testing of the Social Support Survey on a Taiwanese sample. *Nursing Research*, *55*(6), 411-417. doi:10.1097/00006199-200611000-00005

116. Gjesfjeld CD, Greeno CG, Kim KH. (2008). A confirmatory factor analysis of an abbreviated social support instrument: The MOS-SSS. *Research on Social Work Practice*, *18*(3), 231-237.

117. Underwood LG. (2006). Ordinary spiritual experience: Qualitative research, interpretive guidelines, and population distribution for the Daily Spiritual Experience Scale. *Archive for the Psychology of Religion/Archiv fur Religionspsychologie*, *Volume 28*(1), 181-218.

118. Idler EL, Musick MA, Ellison CG et al. (2003). Measuring multiple dimensions of religion and spirituality for health research: Conceptual background and findings from the 1998 General Social Survey. *Research on Aging*, *25*(4), 327-365. doi: 10.1177/0164027503252749

119. Mokuau N, Hishinuma E, Nishimura S. (2001). Validating a measure of religiousness/spirituality for Native Hawaiians. *Pacific Health Dialogues*, *8*(2), 407-416.

120. Underwood LG, Teresi JA. (2002). The Daily Spiritual Experience Scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health-related data. *Annals of Behavioral Medicine*, *24*(1), 22-33.

121. Florida Office of Insurance Regulation. (1992). The use of occupation and education as underwriting/rating factors for private passenger automobile insurance. Retrieved 22 December, 2012 from http://www.floir.com/sitedocuments/occraterpt.pdf

122. Carrell S, Zinman J. (2008). The use of occupation and education as underwriting/rating factors for private passenger automobile insurance. FRB of Philadelphia Working Paper.

123. Allen ES, Rhoades GK, Stanley SM, Loew B, Markman HJ. (2012). The effects of marriage education for Army couples with a history of infidelity. *Journal of Family Psychology*, *26*(1), 26-35.

124. Rowe LS, Doss BD, Hsueh AC, Libet J, Mitchell AE. (2011). Coexisting difficulties and couple therapy outcomes: Psychopathology and intimate partner violence. *Journal of Family Psychology*, *25*(3), 455-458. doi:10.1037/a0023696

125. Verdeli H, Baily C, Vousoura E, Belser A, Singla D, Manos G. (2011). The case for treating depression in military spouses. *Journal of Family Psychology*, *25*(4), 488-496.

126. Department of the Navy. (2012). *Navy leader's guide for managing sailors in distress: Operational stress control*. Retrieved 1 June, 2013 from http://www.med.navy.mil/sites/nmcphc/documents/lguide/op_stress.aspx#intro

127. Department of the Navy. (2012). *Navy leader's guide for managing sailors in distress: Deployment Concerns.* Retrieved 1 June, 2013 from http://www.med.navy.mil/sites/nmcphc/Documents/LGuide/deployment.aspx

128. Cavas CP. (2012). U.S. amphib skirts major deployments for 8 years. *Defense News*. Retrieved from http://www.defensenews.com

129. Freedberg Jr SJ. (2013). Navy will cancel maintenance on 23 ships on Feb. 15; Small shipyards, readiness at risk. *Breaking Defense*. Retrieved from http://breakingdefense.com

130. Wong K. (2013). Navy to stretch deployments; Aircraft carrier fleet down to 9. *The Washington Times*. Retrieved from http://www.washingtontimes.com

131. Candelaria MA, O'Connell MA, Teti DM. (2006). Cumulative psychosocial and medical risk as predictors of early infant development and parenting stress in an African-American preterm sample. *Journal of Applied Developmental Psychology*, *27*(6), 588-597. doi:10.1016/j.appdev.2006.08.006

132. Allen ES, Rhoades GK, Stanley SM, Markman HJ. (2010). Hitting home: Relationships between recent deployment, posttraumatic stress symptoms, and marital functioning for Army couples. *Journal of Family Psychology*, *24*(3), 280-288.

133. Malik NM, Boris NW, Heller SS et al. (2007). Risk for maternal depression and child aggression in early Head Start families: A test of ecological models. *Infant Mental Health Journal*, *28*(2), 171-191. doi:10.1002/(ISSN)1097-0355

134. Saisto T, Salmela-Aro K, Nurmi JE, Halmesmaki E. (2008). Longitudinal study on the predictors of parental stress in mothers and fathers of toddlers. *Journal of Psychosomatic Obstetrics and Gynecology*, *29*(3), 213-222. doi:10.1080/01674820802000467

135. Schaeffer CM, Alexander PC, Bethke K, Kretz LS. (2005). Predictors of child abuse potential among military parents: Comparing mothers and fathers. *Journal of Family Violence*, *20*(2), 123-129.

136. Defense Manpower Data Center. (2012). *DoD personnel and military casualty statistics: December 31, 2011.* Retrieved June 1, 2013 from http://siadapp.dmdc.osd.mil/personnel/MILITARY/miltop.htm

137. Department of the Navy. (2013). *Status of the Navy.* Retrieved 01 June, 2013 from http://www.navy.mil/navydata/nav_legacy.asp?id=146

138. Pincus SH, House R, Christenson J, Adler LE. (2001). The emotional cycle of deployment: A military family perspective. *Army Medical Department Journal*, *8*, 15-23.

139. Knobloch LK, Theiss JA. (2012). Experiences of U.S. military couples during the post-deployment transition: Applying the relational turbulence model. *Journal of Social and Personal Relationships*, *29*(4), 423-450.

140. Department of Defense. (2009). *Instruction 1300.24 - Subject: Recovery Coordination Program (RCP)*. Retrieved from http://www.dtic.mil/whs/directives/corres/pdf/130024p.pdf

141. Faul F, Erdfelder E, Buchner A, Lang A-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149-1160.

142. Faul F, Erdfelder E, Lang A-G, Buchner A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191

143. Prins A, Ouimette P, Kimerling R et al. (2003). The primary care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry*, *9*(1), 9-14.

144. Ouimette P, Wade M, Prins A, Schohn M. (2008). Identifying PTSD in primary care: Comparison of the Primary Care-PTSD screen (PC-PTSD) and the General Health Questionnaire-12 (GHQ). *Journal of Anxiety Disorders*, *22*(2), 337-343. doi:10.1016/j.janxdis.2007.02.010

145. Calhoun PS, McDonald SD, Guerra VS, Eggleston AM, Beckham JC, Straits-Troster K. (2010). Clinical utility of the Primary Care-PTSD Screen among U.S. veterans who served since September 11, 2001. *Psychiatry Research*, *178*(2), 330-335.

146. Pfizer. (2013). *Instruction manual: Patient Health Questionnaire.* Retrieved from http://www.phqscreeners.com/instructions/instructions.pdf

147. Kroenke K, Strine TW, Spitzer RL, Williams JB, Berry JT, Mokdad AH. (2009). The PHQ-8 as a measure of current depression in the general population. *Journal of Affective Disorders*, *114*, 163-173. doi:10.1016/j.jad.2008.06.026

148. Kroenke K, Spitzer RL, Williams JB, Lowe B. (2010). The Patient Health Questionnaire somatic, anxiety, and depressive symptom scales: A systematic review. *General Hospital Psychiatry*, *32*(4), 345-359. doi:10.1016/j.genhosppsych.2010.03.006

149. Andres M, Moelker R, Soeters J. (2012). A longitudinal study of partners of deployed personnel from the Netherlands' armed forces. *Military Psychology*, *24*(3), 270-288. doi:10.1080/08995605.2012.678237

150. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. (2007). *Designing Clinical Research* (3rd ed.). Philadelphia: Lippincott, Williams, & Wilkins.

151. Lester P, Saltzman WR, Woodward K et al. (2012). Evaluation of a family-centered prevention intervention for military children and families facing wartime deployments. *American Journal of Public Health*, *102 (Suppl. 1)*, S48-54.

152. Wells TS, Horton JL, LeardMann CA, Jacobson IG, Boyko EJ. (2013). A comparison of the PRIME-MD PHQ-9 and PHQ-8 in a large military prospective study, the Millennium Cohort Study. *Journal of Affective Disorders*, *148*(1), 77-83. doi:10.1016/j.jad.2012.11.052

153. Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *The New England Journal of Medicine*, *351*(1), 13-22.

154. SteelFisher GK, Zaslavsky AM, Blendon RJ. (2008). Health-related impact of deployment extensions on spouses of active duty Army personnel. *Military Medicine*, *173*(3), 221-229.

155. U.S. Department of Health and Human Services. (2000). *The Developmental Disabilities Assistance and Bill of Rights Act of 2000*. Retrieved from http://www.acf.hhs.gov/programs/aidd/resource/dd-act?page=2

156. Fleishman JA, Sherbourne CD, Crystal S et al. (2000). Coping, conflictual social interactions, social support, and mood among HIV-infected persons. *American Journal of Community Psychology*, *28*(4), 421-453.

157. King DW, Taft C, King LA, Hammond C, Stone ER. (2006). Directionality of the association between social support and posttraumatic stress disorder: A longitudinal investigation. *Journal of Applied Social Psychology*, *36*(12), 2980-2992.

158. Booth-Kewley S, Highfill-McRoy R, Larson G, Garland C, Gaskin T. (2012). Anxiety and depression in Marines sent to war in Iraq and Afghanistan. *Journal of Nervous Mental Disease*, *200*(9), 749-757.

159. Vogt D, Smith BN, King DW, King LA. (2012). *Manual for the Deployment Risk and Resilience Inventory-2 (DRRI-2): A collection of measures for*

studying deployment-related experiences of military veterans. Boston, MA: National Center for PTSD.

160. Mosholder E. (2007). *The influence of PTSD and spirituality on Navy personnel* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Order No. 3292114)

161. McLay RN, Deal WE, Murphy JA, Center KB, Kolkow TT, Grieger TA. (2008). On-the-record screenings versus anonymous surveys in reporting PTSD. *The American Journal of Psychiatry*, *165*(6), 775-776. doi:10.1176/appi.ajp.2008.07111710

162. Warner CH, Appenzeller GN, Grieger T et al. (2011). Importance of anonymity to encourage honest reporting in mental health screening after combat deployment. *Archives of General Psychiatry*, *68*(10), 1065-1071.

163. Maclean A, Edwards RD. (2010). The pervasive role of rank in the health of U.S. veterans. *Armed Forces and Society*, *36*(5), 765-785. doi:10.1177/0095327X09356166

164. Vogt DS, Proctor SP, King DW, King LA, Vasterling J. (2008). Validation of scales from the Deployment Risk and Resilience Inventory in a sample of operation Iraqi Freedom veterans. *Assessment*, *15*(4), 391-403. doi:10.1177/1073191108316030

Enrollment Targets. The military is currently made up of 68.3% Caucasian, 16.9% African-American, 3.8% Asian, and 11% other ethnicities [9]. Of the military population, 11.2% identify themselves as Hispanic [9]. The sample at BHCSP is likely to be representative of the demographic makeup of the military, and subject enrollment is highly likely to reflect these ratios. Table III.1 gives enrollment targets across race and ethnicity.

The targeted enrollment is higher for men than for women to account for an expected spousal refusal rate of 23% based on a cross-sectional study of U.S. Army couples [100]. Based on this statistic, 80 active duty fathers would need to be recruited in order to enroll 65 civilian spouses. In a case such as this, data on all 80 fathers would be analyzed as per the specific aims. Data for all 65 female civilian spouses would also be analyzed as per the specific aims.

Table III.1

Targeted Enrollment Table

Ethnic Category	Females	Males	Total
Hispanic or Latino	7	9	16
Not Hispanic or Latino	58	71	129
Ethnic Category: Total of all Subjects	65	80	145
Racial Categories			
American Indian/Alaska Native	1	1	2
Asian	2	3	5
Native Hawaiian or Other Pacific Islander	1	1	2
Black or African American	11	14	25
White	44	55	99
Other	6	6	12
Racial Categories: Total of All Subjects	65	80	145

Informed Consent Procedures. Participants will read the survey information sheet in lieu of signing an informed consent document (see Appendix B, p.283, 285). The PI will be present to answer any questions that participants may have as they read the survey information sheet. The PI will also apply for a Certificate of Confidentiality from the National Institutes of Health after IRB approval.

Justification of Subject Population. The study population will include adult parents of children younger than six years of age: men who are active duty military members, and women who are their civilian spouses. This population is needed in order to investigate the effects of deployment on parenting stress. Within this feasibility study, a minimum of 65 military couples will be recruited. These subjects will be between the ages of 18 and 65, and will be in good health and able to engage in normal activities of daily living.

Vulnerable Populations. No special vulnerable populations are to be included in this research. No children under the age of 18 will be included in this study because the focus is on parents. However, some parents of young children may be between the ages of 18 and 20 themselves, and these subjects will be included in the study. This age range of children is included because age 18 is the minimum age for enlistment in the military without parental consent. The sample includes women of childbearing age; pregnant women are a part of the general population, and will not be excluded.

Protection of Human Subjects

(1) List and document risks.

The risk to subjects is expected to be minimal. The protocol does not include experimental procedures, and participants will be asked questions that are similar to those that they are used to completing on the PDHA and PDHRA. There is a potential for minimal psychological risk to the participants as the questions for the active duty member involve revisiting deployment scenarios that might be upsetting. The Mental Health Clinic staff will be available for consultation during the research protocol. There is minimal psychological risk for the civilian spouse also, as she may re-experience some distressing emotions that she had put aside from deployment. The PI will offer a mental health contact card to all participants in the study, with several phone numbers to call if any participant would like to speak with a mental health professional.

(2) Justification of Risks.

This research will add new knowledge to assist parents taking care of their children under difficult circumstances. There is no direct benefit to the participants, but they may experience feelings of satisfaction from participation in this study. If there is an increase in parenting stress after deployment, the identification of potential moderating factors, such as social support and spirituality, can aid in developing appropriate interventions for families experiencing deployment, and may have potential for use in other families under stress. The psychological risk that is inherent in this study is worthwhile for the

knowledge to be gained relating to parenting experiences in this population. The most important benefit will be derived for young children, who are dependent on their parents for the environment of their childhood.

(3) Minimization of Risks

(a) Data will be handled in a confidential manner, and all identifying information will be kept on password-protected computer devices. Each participant will be given a numerical study code identifier. The first active duty enrollee will have study code 101, with a (D) designator for dad. Study identifiers will continue in ascending numerical order. If a female civilian spouse also enrolls in the study, she will have the same numerical study code identifier as her husband, but with an (M) for mom. These codes will be entered into a computerized password-protected Excel logbook with names of the youngest child, telephone numbers (and addresses as applicable for female civilian participants). The computer devices used for the study will all be password-protected, with passwords known only to the PI. The logbook will be destroyed at the end of the study.

(b) Informed consent will be performed in person, in a private room within the deployment health clinic. The participants will be given information to read on the purpose of the study, and other important details (see Appendix B, p.283, 285). Consent will be documented via a participant's answering the survey questions.

(c) Participants within BHCSP will answer survey questions in a private room away from the waiting area. Female civilian participants will answer survey questions in a comfortable, private location of their choice.

(d) All information gathered from the participants will be stored on password protected computer devices, and there will be no personal identifying information input into the online surveys. There will be no paper documentation collected from participants. Participants taking the online surveys will not be asked to enter any personal identifying information - they will just enter their study code number with the (D) or (M) signifier.

(e) Data will be collected at a clinic with mental health services available. The survey questionnaire format involves minimal risk. The survey questions themselves are similar to questions that would be asked on a PDHA or PDHRA, and similar to questions that friends and family might ask them. Participants do not have to answer questions that they do not want to.

(f) All identifying information will be destroyed at the end of the project. De-identified data will be saved on an encrypted, password-protected device for a minimum of three years.

(4) Costs to Subjects

The costs to subjects are reflected in the time spent on answering the survey questions: it may take up to an hour for a participant to complete the survey. For the active duty member there is no renumeration. For the female civilian spouse, she can be presented with a $25 gift card, as a token of appreciation for her time.

Chapter IV

Parenting Stress After Deployment in Navy Active Duty Fathers

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Introduction

Multiple threats to the security of the United States have emerged over the past fifteen years. The US military is tasked with defending the nation "against all enemies, foreign and domestic" (Oath of Office, 2014). This has necessitated an increased frequency of deployments for all military services (Hosek, 2011); in the US Navy, this includes deployments both on land and afloat. Deployment is broadly defined as an active duty service member being sent away from their home to a land-based or ship-based peacekeeping or combat operation for an extended period of time (Management of Deployments, 2014). The duration of deployments has increased over the past decade with the increase in global geopolitical instability (Fellman, 2013; Wong, 2013).

According to the U.S. Department of Defense (2013), there are 314,339 active duty members within the US Navy, associated with 401,728 family members; this means that Navy health care providers are responsible for the welfare of over 700,000 individuals. Over half of Navy service members are married, and of those families with children, more than 40% of the children are under the age of six; among Navy active duty personnel who are married, over 90% are married to female spouses (U.S. Department of Defense, 2013). This means that there are many fathers who are called upon to leave their families behind and go on deployment. When fathers return to their families, this can be a difficult time with multiple family adjustments.

The research literature has not focused exclusively on military fathers except in a few instances. Several quantitative studies on military fathers have shown that post-traumatic stress disorder (PTSD) has a negative effect on the quality of parent-child relationships, parenting satisfaction, and favorable parenting behaviors (Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010; Ruscio, Weathers, King, & King, 2002; Samper, Taft, King, & King, 2004). Fathers within an Army sample showed increased child abuse potential in association with increased depression, increased parental stress, increased family conflict, and decreased family expressiveness (Schaeffer, Alexander, Bethke, & Kretz, 2005). Out of 108 predominantly male veteran parents who had deployed to Iraq or Afghanistan, 14.8% reported that their children were not warm to them, or were afraid of them, upon reintegration; of the 86 veterans who were partnered or married, 77.9% reported some type of family issue or concern upon reintegration (Sayers, Farrow, Ross, & Oslin, 2009). Recent qualitative studies have shown that military fathers who have deployed have feelings of loss and sadness because of the missed opportunities for developing a close relationship with their children during the deployment separation (Lee et al., 2013; Schachman, 2010; Walsh et al., 2014; Willerton, Schwarz, Wadsworth, & Oglesby, 2011). The reunion period was often cited as the most difficult for recently returned fathers, in that it was hard to align the structure and discipline of deployment with the unpredictability of children (Walsh et al., 2014), sharing parenting responsibilities with a partner or other co-parent was difficult (Lee et

al., 2013; Walsh et al., 2014; Willerton et al., 2011), and these men felt that the separation had diluted their fatherhood role within the family (Schachman, 2010; Willerton et al., 2011).

Research has shed some light on more positive aspects of fatherhood in the military. Gewirtz et al. (2010) found that although PTSD has a negative overall effect on parenting, social support both decreased PTSD symptoms, and increased positive parenting behaviors, in fathers who had recently returned from a deployment to Iraq. Fatherhood has been shown to be a moderator and/or buffer between the strong relationship of hazardous alcohol use and intimate partner violence (Foran, Heyman, Smith Slep, & Snarr, 2012).

Fathers in any situation experience multiple levels of stress in regards to their children. A measure of parenting stress comes from the father's perception of his child - is the child more or less flexible, adaptable, hyperactive, moody? Parenting stress also comes from a father's perception of himself as a parent - is he competent, isolated, securely attached with his child, having difficulties with his spouse? For fathers who are also handling the multiple stressors of deployment, do these added forces contribute to increased parenting stress after return from deployment? The goal of this study is to examine the impact of military separations, as measured by several deployment factors, on the parenting stress in recently returned U.S. Navy active duty fathers. A secondary goal is to examine to what extent the associations between deployment factors

and parenting stress can be explained by potential mediators such as fathers' depression, PTSD and life stress.

Methods

Participants

The sample for this study consisted of active duty U.S. Navy fathers who had recently returned from a deployment within the past year, and had access to services at a Navy health care clinic on the eastern seaboard of the United States. To be eligible to participate, the fathers needed to be married to non-active duty (civilian) female spouses, and have at least one child in their home who was between one month of age and less than six years of age. The three exclusion criteria were: (1) endorsement of suicidal ideation on the day of the clinic visit, (2) enrollment in the Wounded Warrior program, or (3) ongoing evaluation to determine eligibility for separation from military service by a Navy Medical or Physical Evaluation Board.

Procedures

After institutional review board approval, recruitment occurred at a Navy health clinic. In addition to the study investigator being present in the clinic to actively recruit, several types of recruitment informational materials were available in waiting areas (for example posters and brochures). Additionally, recruitment informational materials were disseminated on ships, and recruitment emails were sent to ships via specific distribution lists. All eligible and interested participants who consented met with the investigator at the clinic

to complete an online questionnaire via computer tablet asking demographic and psychosocial questions. The psychosocial health measures included: the Parenting Stress Index, three subscales of the Deployment Risk and Resiliency Index-2, the Primary Care PTSD screen, the Patient Health Questionnaire-8, and the Life Stress Scale.

Study Variables

Outcome measure: Parenting stress. The Parenting Stress Index (PSI) is a 101-item questionnaire that assesses the parent-child system via questions on two specific domains (Abidin, 2012). The first domain is the child domain - subscales measure a parent's perception of his child's characteristics, such as distractibility/hyperactivity, adaptability, demandingness, mood, acceptability and a measure of reinforcing the parent. An example of a child domain question is as follows: "My child seems to fuss or cry more often than most children." The instrument uses the assumption that a parent's perception of his child can increase that parent's stress, even if an outside observer does not perceive the child's behavior as being a cause for stress. The second domain is the parent domain - subscales measure a parent's perception of his own parenting characteristics, such as competence, isolation, attachment, health, role restriction, depression, and spouse relationship. An example of a parent domain question is as follows: "Having a child has caused more problems than I expected in my relationship with my spouse/parenting partner." Each item is scored on a five point Likert scale, ranging from "strongly disagree" to "strongly agree."

The scores on these two domains are added for a total score that can range from 101 to 505, with a child age-normed percentile score ranging from 1 to 100. Scores in the 85th to 89th percentile are considered high, and scores in the 90th percentile and above indicate clinically significant parent-child systems under stress. A defensive responding raw score is also calculated, which "assesses the extent to which the participant approaches the questionnaire with a strong bias to ... minimize indications of problems or stress in the parent-child relationship" (Abidin, 2012, p. 59). The rate of defensive responding in the general population is between 5 and 8% (Parkes, Caravale, Marcelli, Franco, & Colver, 2011). The total PSI score showed a Cronbach's alpha reliability coefficient of 0.96 in a sample of 2,633 parents (Abidin, 2012), and in the present study was 0.96. In this study, if a father's score for the total PSI was above the 85th percentile, the father was contacted within 72 hours with this information. He was then asked if he wanted study personnel to initiate a referral, or if he wanted to self-refer using information on a mental health contact card provided to all study participants.

Primary predictors: Deployment factors.

1. Number of deployments. Fathers were asked how many deployments they had been on in the past five years.

2. Time away from home. Fathers were asked how many months they had been away from home related to deployments in the past five years.

3. Perceived threat. The Deployment Risk and Resiliency Index-2 (DRRI-2) has 14 subscales that can be used independently of each other, and

independently of the full index (Vogt et al., 2013). The Deployment Concerns scale measures a construct of perceived threat, which reflects fear for personal safety during deployment. Higher scores are indicative of greater perceived threat to one's own safety and well being (range: 12 - 60). An example question: "I was concerned that I might encounter an explosive device." Reliability coefficients for the subscale of Deployment Concerns in past studies have been 0.89 (Vogt, Proctor, King, King, & Vasterling, 2008). The Cronbach's alpha in this sample for the Deployment Concerns subscale was 0.90.

4. Warfare exposure. The DRRI-2 contains both the Combat Experiences Scale and the Post-Battle Experiences Scale (Vogt et al., 2013). For both of these scales, the higher the score is, the greater is the subject's exposure to combat or to the consequences of combat. The Combat Experiences Scale and the Post-Battle Experiences Scale were combined for a summative measure of Warfare Exposure, with a range of 28 to 168 (Vogt et al., 2011). An example question: "I was involved in handling human remains." Reliability coefficients for the subscales of Combat Experiences, and Post-battle Experiences in past studies have been 0.89, and 0.85 respectively (Vogt et al., 2008). The Cronbach's alpha in this sample for the combined Warfare Exposure variable was 0.90.

Other predictors.

Life stress. The Life Stress Scale is an optional included instrument in the PSI, and the life stress score is completely separate from the PSI score (Abidin, 2012). The scale contains 19 items that assess family situational concerns within

the past 12 months, such as financial difficulties, geographic relocation, and household changes. Each response is weighted differently for scoring purposes; total scores can range from 0 to 79.

PTSD. The Primary Care PTSD Screen instrument is part of both the mandatory Post-Deployment Health Assessment (PDHA) and the Post-Deployment Health Re-Assessment (PDHRA) questionnaires (Ouimette, Wade, Prins, & Schohn, 2008). The four questions are statements to be answered either "yes" or "no." If a person answers "yes" to three out of the four questions, the result is considered positive for PTSD (Prins et al., 2003). Previous research has shown that this instrument yields a sensitivity of .83 and a specificity of .85 (Calhoun et al., 2010). This instrument has the benefit of having been used frequently in military settings, and thus is familiar to service members. In this study, the Cronbach's alpha coefficient was 0.79. If a father screened positive for PTSD, he was contacted with this information, and the same protocol as for a high PSI score was followed.

Depression. The Patient Health Questionnaire-8 (PHQ-8) specifically screens for depression, as well as providing information on depression severity. There are a total of nine questions; scores can range from 0 to 24, and a score of 10 or above has 88% sensitivity and 88% specificity for major depression (Kroenke, Spitzer, & Williams, 2001). A Cronbach's alpha of .86 is reported, with test-retest reliability at .84 (Kroenke, Spitzer, Williams, & Lowe, 2010). In this study, the reliability coefficient was 0.86. If a father screened positive for

depression (a score of 10 or above), he was contacted with this information, and the same protocol as for a high PSI score was followed.

Data Analysis Plan

Descriptive analyses of the data included mean, standard deviation (SD) and percentiles for continuous variables, and frequency and percentage for categorical variables. The internal consistency of instruments for the study sample was analyzed using Cronbach's alpha reliability coefficients. All continuous variables were examined for skewness. The variable of warfare exposure was significantly positively skewed, and was categorized into low (29-34), medium (35-45) and high (≥46) warfare exposure.

Pearson and Spearman correlational analysis was used to evaluate univariate relationships between the study variables. Univariate relationships between individual factors and parenting stress scores were first examined and factors with a p value of less than 0.20 were included in all subsequent data analyses. In order to explore the relationship between deployment factors and parenting stress, several analyses were performed. A bivariate regression of each of the four deployment factors on the PSI score determined if any one deployment factor could explain the variance in parenting stress scores.

The association of deployment factors and parenting stress was examined separately for each deployment factor. For each of the four deployment factors, five linear regression models were constructed: Model 1 examined the association of the deployment factor and fathers' parenting stress scores without

adjustment for other variables; models 2-5 examined the association sequentially adjusted for years of education, weekly childcare arrangements, years in the military (model 2), life stress (model 3) PTSD symptoms (model 4), and depression symptoms (model 5). Additionally, all four deployment factors were examined together with and without adjustment for other variables using the same procedure as described above.

Then the data was analyzed again, this time setting aside the results for the group of fathers who scored 24 or below on the defensive responding scale of the PSI, and restricting the sample to only those fathers whose scores were above 24 (the responders). The two groups (defensive responders and responders) were compared across all study variables; categorical variables were analyzed using chi-squared testing, and continuous variables were analyzed using independent samples t-tests and Mann-Whitney U testing. All data was analyzed using SPSS Version 22 (IBM Statistics). The alpha value for statistical significance in all tests was 0.05 (two-tailed).

Results

Demographics

The sample comprised 113 fathers who had returned from a deployment within the past year. Two participants were excluded from the sample due to incomplete data, resulting in a final sample size of 111. Of the fathers, 36% had only one child under age six; the rest of the fathers had more than one child. The majority of fathers were biologically linked to their offspring (95.5%); others

were either stepfathers or adoptive fathers. When fathers answered the PSI, they had to think about one child that they were most concerned about under the age of six, and answer the questions based on that child. The mean age of this reported child was approximately 3 years of age (M (SD) = 39.85 months (±19.42)). None of the fathers reported any developmental disabilities in these children.

The average cumulative time away from home related to deployment in the past five years was about 1 year and 8 months (M (SD) = 19.95 months (±11.31)). At the time of enrollment, the majority of fathers had returned from a ship-based deployment (67.6%), a small number had returned from either Iraq or Afghanistan (6.3%), and the rest had been deployed in other land locations, mostly in the Middle East (26.1%). Of note, none of the participants reported zero warfare exposure. In the sample, 17.1% screened positive for PTSD, and 17.1% screened positive for depression. Of those with positive screens for PTSD and depression, only five participants screened positive for both. Table IV.1 shows the characteristics of variables within the study.

Table IV.1

Characteristics of Study Variables

n = 111	Fathers (M, SD)	Range in the Sample
Demographics		
Age	32.14 (±6.10)	21 - 47
Years of Education	14.23 (±2.29)	12 - 20
Years of Marriage	6.37 (±3.80)	0 - 17
Number of Children	2.06 (±1.13)	1 - 7
Years in the Military	10.03 (±5.33)	2 - 23
Predictors		
Number of Deployments	2.39 (±1.27)	1 - 7
Time Away from Home (months)	19.95 (±11.31)	3 - 58
Perceived Threat	24.06 (±10.30)	12 - 56
Life Stress	10.66 (±9.01)	0 - 47
PTSD	1.03 (±1.37)	0 - 4
Depression	4.70 (±4.73)	0 - 21
Outcome		
Parenting Stress	216.93 (±46.72)	129 - 326
		Fathers (n, %)
Demographics		
Race		
Caucasian		72 (64.86)
African-American		26 (23.42)
Other		13 (11.71)
Hispanic		19 (17.12)
Used weekly childcare		50 (45.05)
Rank		
Junior enlisted		49 (44.14)
Senior enlisted		46 (41.44)
Junior officer		10 (9.01)
Senior officer		6 (5.41)

Deployment location	
Iraq/Afghanistan	7 (6.31)
Ship-based	75 (67.57)
Other	29 (26.13)
PTSD positive screens	19 (17.12)
Depression positive screens	19 (17.12)
Top 6 Life Stressors	
1: Promotion at work	42 (37.84)
2: Moved to new location	41 (36.94)
3: Trouble with superiors at work	32 (28.83)
4: Pregnancy	23 (20.72)
5: Began new job	24 (21.62)
6: Death of close friend	21 (18.92)
Predictors	
Warfare Exposure	
Low	68 (61.26)
Medium	35 (31.53)
High	8 (7.21)

Bivariate correlations were examined between deployment factors, and other major variables of the study, and are shown in Table IV.2.

Table IV.2: *Correlations between Study Variables and Deployment Factors*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	1														
2. Years of Education	.348***	1													
3.Years of Marriage	.504***	.305***	1												
4.Number of Children	.381***	-.041	.271***	1											
5.Rank	.388***	.636***	.420***	.075	1										
6.Years in Military	.698***	.125	.465***	.289***	.442***	1									
7.Weekly Childcare	.213**	.307***	.144	-.032	.253***	.282***	1								
8. Life Stress	-.036	-.106	-.177*	-.071	-.191**	-.105	.007	1							
9. PTSD	-.230**	-.226**	-.254***	-.095	-.252***	-.160*	-.085	.236**	1						
10. Depression	-.111	-.097	.030	.024	-.208**	-.160*	-.031	.252***	.460***	1					
11.Number of Deployments	.074	-.002	.055	.002	-.035	.112	.017	-.146	.104	.045	1				
12.Time Away	-.025	-.045	.060	.032	-.116	.074	.171*	.108	.154	.182*	.610***	1			
13. Perceived Threat	-.129	.072	.009	-.124	-.096	-.158*	.027	.165*	.372***	.335***	.034	.188**	1		
14.Warfare Exposure	-.089	.120	.033	-.024	.043	.022	.109	.053	.232**	.252**	.179*	.333***	.351***	1	
15. Parenting Stress	-.099	.166*	.019	-.030	-.078	-.187**	.148	.223**	.209**	.501***	.065	.080	.213**	.248***	1

* $p < 0.10$ ** $p < 0.01$ *** $p < 0.001$

Regression Analysis

Bivariate regressions were run with each study variable as the independent predictor, and parenting stress scores as the dependent variable. Looking at the demographic variables, only years of education, years in the military, and the dichotomized weekly childcare variable, reached a significance of below .20. These variables (named Block 2) were included in all of the adjusted models.

The results of the linear regression models are shown in Table IV.3. Perceived threat and warfare exposure were both significant independent predictors of total parenting stress scores. Perceived threat had a regression coefficient of .97, with a *p* value of 0.025. Thus, for each unit change upwards in perceived threat, parenting stress increased by .97, and this was significant. For the medium vector of warfare exposure, the jump from low to medium exposure was associated with an increase of 16.96 points in parenting stress, which trended toward significance ($p = 0.077$). For the high vector of warfare exposure, the jump from low to high warfare exposure was associated with an increase of 38.44 points in parenting stress, which was significant ($p = 0.026$). But the magnitude of these effects decreased steadily with sequential adjustments for more factors. For both perceived threat and warfare exposure, the association was greatly attenuated after adjusting for PTSD (model 4), and depression

(model 5), and when the model was adjusted for these variables, the associations were no longer significant.

Table IV.3

Associations of Deployment Factors and Parenting Stress with and without Adjustment for other Factors in the Full Sample

n=111	Model 1 (Unadjusted)	Adjusted Model 2 (adjusted for Block 2 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress)	Adjusted Model 4 (additionally adjusted for PTSD)	Adjusted Model 5 (additionally adjusted for Depression)
Number of Deployments *b* (SE), *p* value	2.42 (±3.53), NS				2.82, (±3.03), NS
Time Away from Home related to Deployments *b* (SE), *p* value	.33 (±.39), NS				-.10 (±.35), NS
Perceived Threat of most recent Deployment *b* (SE), *p* value	.97 (±.42), 0.025**	.75 (±.42), 0.076*	.62 (±.42), NS	.34 (±.45), NS	-.03 (±.41), NS
Warfare Exposure of most recent Deployment *b* (SE), *p* value	M: 16.96 (±9.51), 0.077* H: 38.44 (±17.08), 0.026**	M: 15.19 (±9.23), NS H: 32.19 (±17.04), 0.062*	M: 13.67 (±9.07), NS H: 34.10 (±16.73), 0.044**	M: 9.24 (±9.33), NS H: 31.30 (±16.64), 0.063*	M: 6.91 (±8.51), NS H: 15.07 (±15.55), NS

Table IV.3 (continued)

n=111	Model 1 (Unadjusted)	Adjusted Model 2 (adjusted for Block 2 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress)	Adjusted Model 4 (additionally adjusted for PTSD)	Adjusted Model 5 (additionally adjusted for Depression)
Including all four Deployment Factors Together *b* (SE), *p* value	#: 1.32 (±4.39), NS TA:-.12 (±.51), NS PT: .70 (±.46), NS M: 12.11 (±10.52), NS H: 32.37 (±17.93), 0.074*	#: 2.90 (±4.32), NS TA:-.24 (±.51), NS PT: .53 (±.45), NS M: 11.46 (±10.21), NS H: 27.65 (±17.93), NS	#: 5.34 (±4.35), NS TA:-.48 (±.51), NS PT: .40 (±.45), NS M: 11.01 (±10.00), NS H: 31.16 (±17.60), 0.080*	#: 4.70 (±4.35), NS TA:-.46 (±.51), NS PT: .18 (±.47), NS M: 8.78 (±10.05), NS H: 30.84 (±17.50), 0.081*	#: 5.38 (±3.95), NS TA:-.61 (±.46), NS PT: .08 (±.43), NS M: 8.41 (±9.11), NS H: 17.14 (±16.12), NS

* p <0.10 ** p <0.05

Mediation Analysis

Previous literature has shown that there is a connection between warfare exposure and depression (Armistead-Jehle, Johnston, Wade, & Ecklund, 2011; Booth-Kewley, Highfill-McRoy, Larson, Garland, & Gaskin, 2012; Sareen et al., 2007). This raised the possibility that one or all of the concurrent stressors (life stress, PTSD, depression) might be mediating the relationship between the significant deployment factors and parenting stress. Using the mediation analysis method specified by Baron and Kenny (1986), three regression equations were conducted. Equation 1 regressed perceived threat onto depression symptoms. Equation 2 regressed perceived threat onto parenting stress scores, and equation 3 regressed both perceived threat and depression symptoms onto parenting stress scores. The procedure was then duplicated, this time substituting warfare exposure for perceived threat. Results of the mediation analyses are shown in Figure IV.1 and Figure IV.2. Depression symptoms completely mediated the effect of perceived threat on parenting stress scores, and completely mediated the effect of warfare exposure on parenting stress scores.

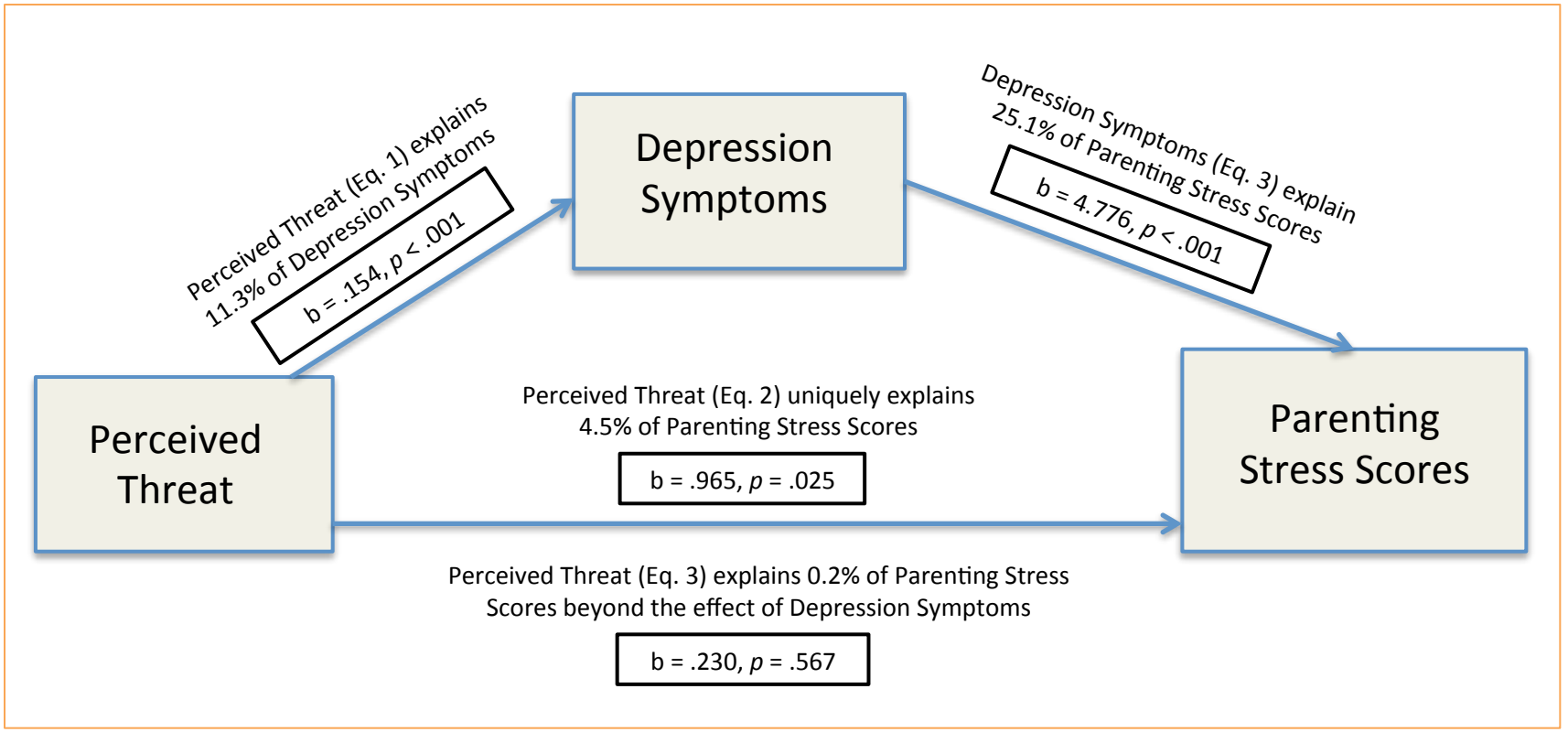

Figure IV.1. Analysis of Depression Symptoms as a Mediating Variable between Perceived Threat and Parenting Stress Scores in the Full Sample

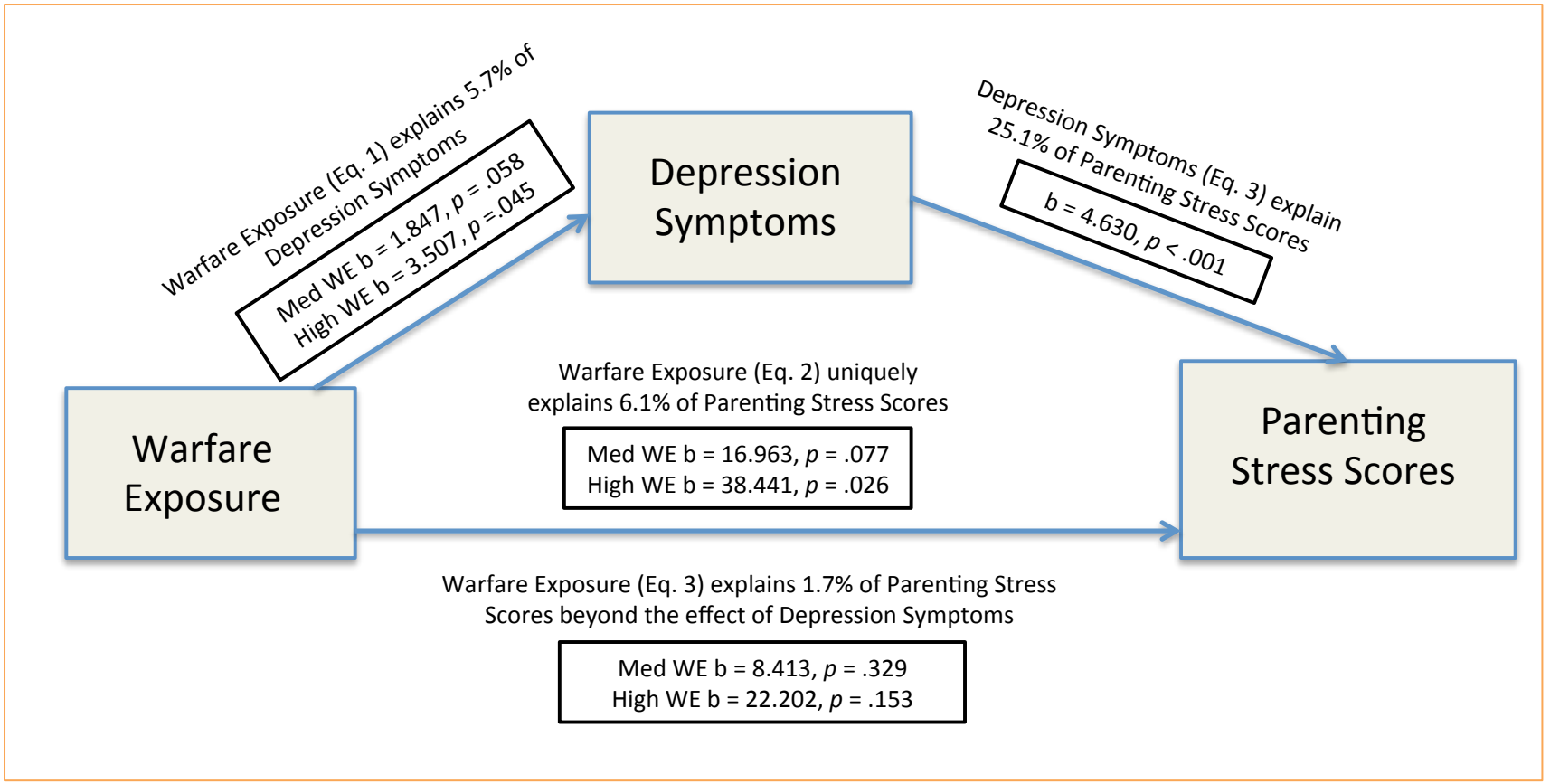

Figure IV.2. Analysis of Depression Symptoms as a Mediating Variable between Warfare Exposure and Parenting Stress Scores in the Full Sample

Restricted Sample

After the data was analyzed for the full sample of 111 fathers, the data from the 28 fathers (25.2%) who met the criteria for defensive responding was set aside. The only significant difference between the defensive responders and the responders ($p = 0.032$) was that there were more Hispanic fathers in the defensive responding group (28.6%) than in the group of responders (13.3%). As expected, defensive responders had significantly lower mean scores on parenting stress scores ($p < 0.001$). Additionally, defensive responders had lower mean scores on depression ($p = 0.001$), and had significantly more time away from home related to deployment in the past five years ($p = 0.013$).

When data for the restricted sample of 83 fathers in the responder group was analyzed, the correlations were very similar to the full sample, except that one significant correlation (between years in the military and parenting stress scores) was no longer significant in the restricted sample, and two previous non-significant correlations (between child care and parenting stress scores ($p < 0.05$), and time away and parenting stress scores ($p < 0.001$)) were significant. The significant univariate correlations were similar to the full sample, except that time away from home related to deployment was now a significant predictor of parenting stress scores.

The results for the various regressions according to model are shown in Table IV.4. Time away, perceived threat and warfare exposure were all significant independent predictors of total parenting stress scores, but the

magnitude of the effect decreased steadily as more factors were introduced into the model. When the model was finally adjusted for depression, the medium warfare exposure vector was still significant ($p < 0.05$), and time away from home showed a trend toward significance ($p < 0.10$). When all four deployment factors were added to the unadjusted model, they explained 22.4% of the variability in PSI scores, and when the other variables were added into the model, 40.0% of the variability in PSI scores was explained.

Table IV.4

Associations of Deployment Factors and Parenting Stress with and without Adjustment for other Factors in the Restricted Sample

n=83	Model 1 (Unadjusted)	Adjusted Model 2 (adjusted for Block 2 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress)	Adjusted Model 4 (additionally adjusted for PTSD)	Adjusted Model 5 (additionally adjusted for Depression)
Number of Deployments *b* (SE), *p* value	3.70 (±3.53), NS				4.49, (±3.11), NS
Time Away from Home related to Deployments *b* (SE), *p* value	1.14 (±.40), 0.005**	1.08 (±.39), 0.007**	1.03 (±.38), 0.008**	.94 (±.38), 0.015**	.66 (±.37), 0.077*
Perceived Threat of most recent Deployment *b* (SE), *p* value	1.62 (±.45), 0.001**	1.38 (±.45), 0.003**	1.17 (±.46), 0.013**	1.00 (±.48), 0.040**	.65 (±.47), NS
Warfare Exposure of most recent Deployment *b* (SE), *p* value	M: 28.69 (±9.37), 0.003** H: 40.35 (±15.64), 0.012**	M: 25.47 (±9.12), 0.007** H: 35.03 (±15.39), 0.026**	M: 23.12 (±8.93), 0.012** H: 35.78 (±14.97), 0.019**	M: 20.24 (±9.34), 0.033** H: 33.94 (±15.06), 0.027**	M: 20.38 (±8.75), 0.023** H: 22.20 (±14.54), NS

Table IV.4 (continued)

n=83	Model 1 (Unadjusted)	Adjusted Model 2 (adjusted for Block 2 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress)	Adjusted Model 4 (additionally adjusted for PTSD)	Adjusted Model 5 (additionally adjusted for Depression)
Including all four Deployment Factors Together *b* (SE), *p* value	#: -2.94 (±4.00), NS TA: .81 (±.50), NS PT: 1.07 (±.49), 0.031** M: 15.46 (±10.46), NS H: 22.16 (±16.86), NS	#: -2.18 (±3.95), NS TA: .76 (±.50), NS PT: .88 (±.48), 0.072* M: 14.32 (±10.19), NS H: 18.36 (±16.73), NS	#: -.15 (±4.06), NS TA: .61 (±.50), NS PT: .65 (±.49), NS M: 13.79 (±10.05), NS H: 21.14 (±16.57), NS	#: -.43 (±4.09), NS TA: .62 (±.50), NS PT: .57 (±.51), NS M: 12.48 (±10.25), NS H: 20.96 (±16.63), NS	#: 1.25 (±3.94), NS TA: .26 (±.49), NS PT: .30 (±.49), NS M: 15.82 (±9.82), NS H: 15.67 (±15.92), NS

* p <0.10 ** p <0.05

Mediation analyses were also done on this restricted sample, and these results are shown in Figure IV.3 and Figure IV.4. Depression symptoms partially mediated the effect of perceived threat on parenting stress scores, and completely mediated the effect of time away from home on parenting stress scores. Unlike the full sample, there was not a significant mediation effect of depression symptoms on the relationship between warfare exposure and parenting stress scores.

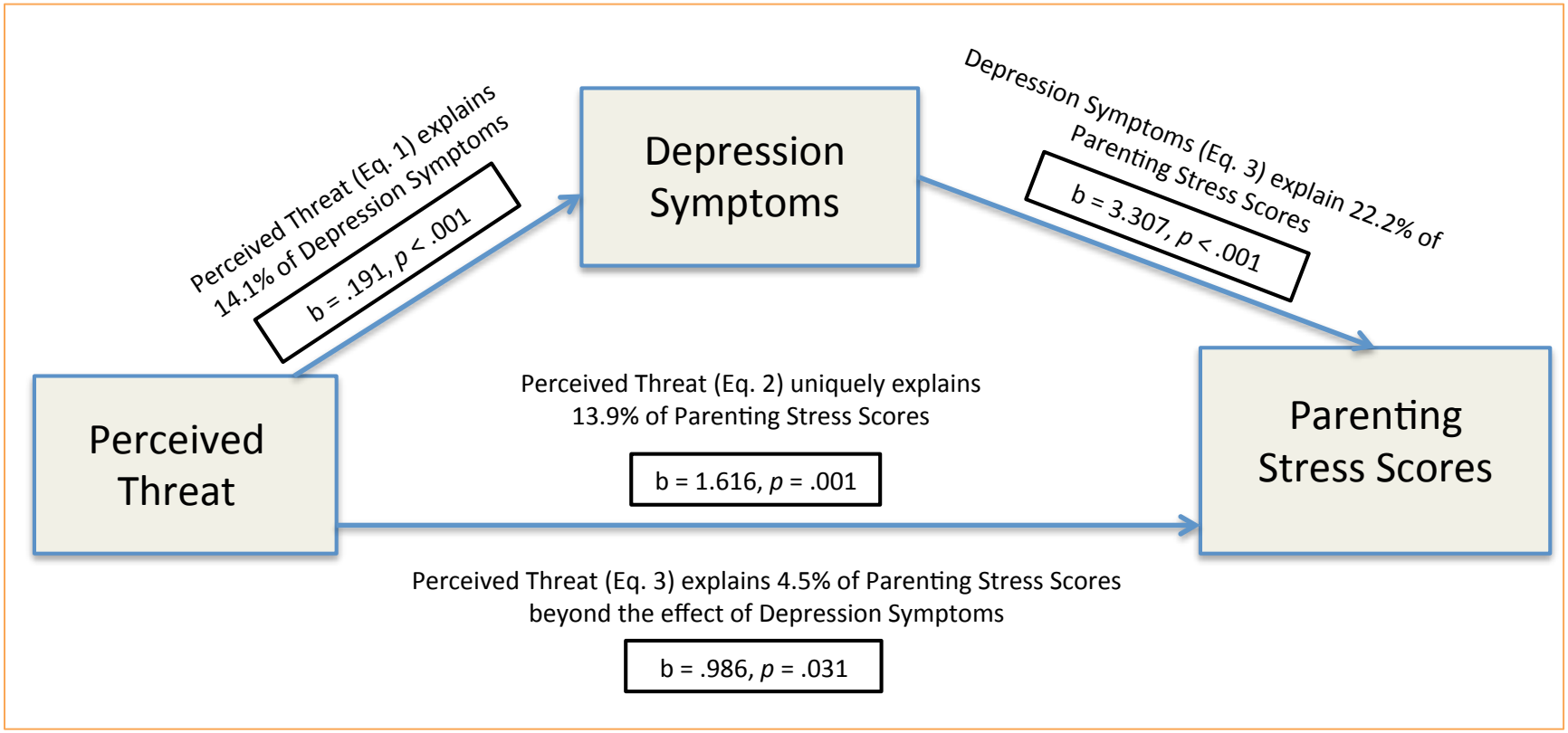

Figure IV.3. Analysis of Depression Symptoms as a Mediating Variable between Perceived Threat and Parenting Stress Scores in the Restricted Sample

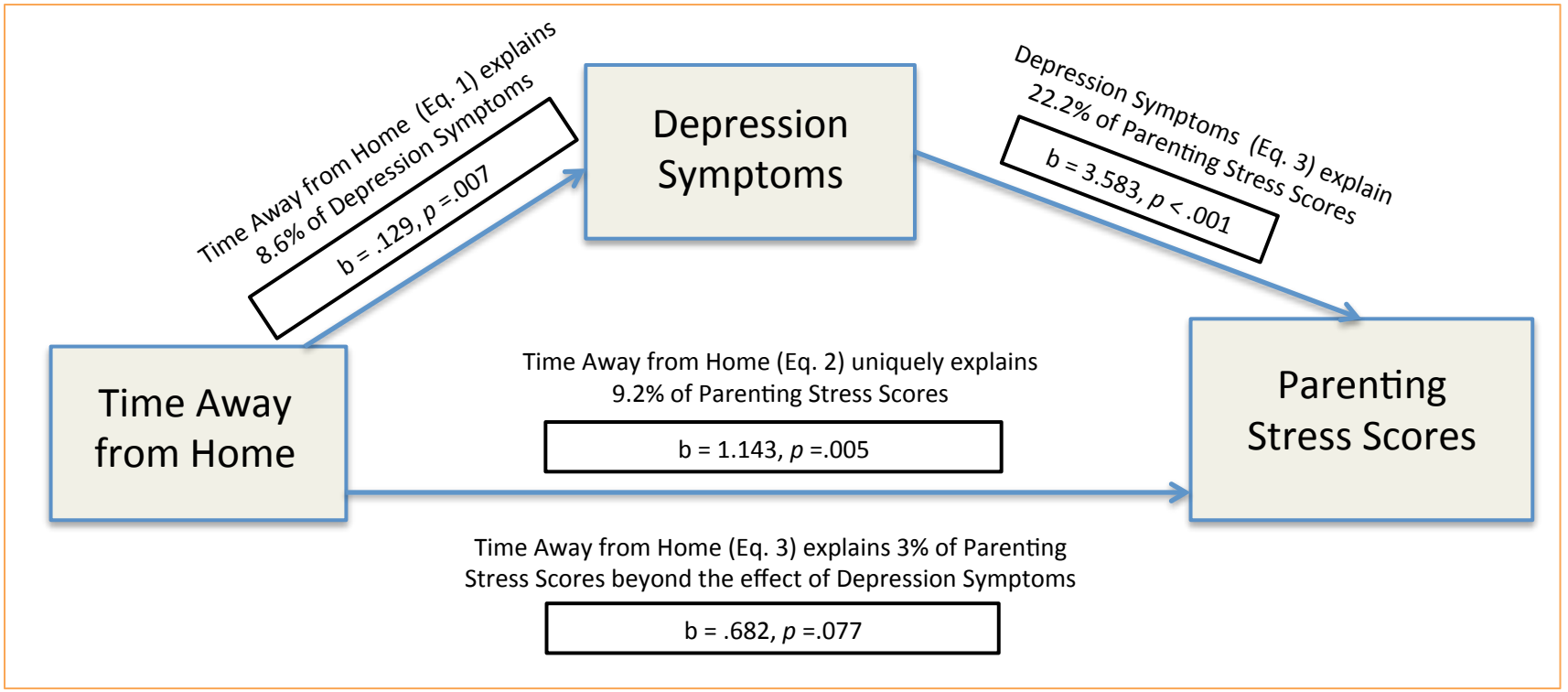

Figure IV.4. Analysis of Depression Symptoms as a Mediating Variable between Time Away from Home and Parenting Stress Scores in the Restricted Sample

Discussion

The aim of this study was to investigate the effect of deployment factors on parenting stress in Navy fathers who had returned from a deployment in the past year. The sample within this study was representative of the Navy as a whole in regards to the ratio of enlisted personnel to officer personnel; there were more African-Americans and Hispanics represented in this sample than in the U.S. Department of Defense (2013) demographics report of the larger Navy (23.4% vs. 17%, and 17.1% vs. 11.3% respectively).

Within this sample, increases in deployment factors were significantly associated with increases in parenting stress for Navy fathers. In particular, a father's perceived threat during his most recent deployment, and a father's warfare exposure on his most recent deployment, were significantly associated with increases in parenting stress in both the full and restricted samples. Time away from home related to deployment within the past five years was significantly associated with increases in parenting stress only within the restricted sample of responders. The combination of all four deployment factors explained 22.4% of fathers' parenting stress scores in the restricted sample.

This information is highly relevant for assessment of health, and provision of appropriate services for military service members. High PSI scores are associated with adverse outcomes, such as decreased positive parenting behaviors (Murphy, Marelich, Armistead, Herbeck, & Payne, 2010; Oxford & Lee, 2011; Rholes, Simpson, & Friedman, 2006), as well as increased child distress,

resulting in more child problem behaviors (Fite, Greening, & Stoppelbein, 2008; Flake, Davis, Johnson, & Middleton, 2009). Scores above the 85th percentile for the PSI are clinically significant, and referrals should be considered (Abidin, 2012).

Depression as a Potential Mediator

A relationship was found between several deployment factors and parenting stress, and depression symptoms were significant in explaining this relationship. As this was a cross-sectional study, there is no ability to extrapolate causal inferences: fathers may have had higher levels of parenting stress and depression prior to deployment. It is not possible to completely differentiate depression symptoms as either a mediating variable or a confounding variable in the relationship between deployment factors and parenting stress scores in fathers. Based on prior literature which shows a link between combat exposure/deployment and mental health concerns (Bray et al., 2010; Milliken, Auchterlongie, & Hoge, 2007; Sareen et al., 2007), depression symptoms are most likely to be a mediating variable; for example, perceived threat will influence depression symptoms, which will subsequently influence parenting stress.

It is interesting to note that PTSD and life stress did not mediate or explain the relationship between deployment factors and fathers' parenting stress scores, but the variable of depression symptoms was significant in the mediation analysis. Prior research has highlighted the importance of PTSD in negatively affecting military fathers' parenting satisfaction and the quality of parent-child

relationships (Gewirtz et al., 2010; Ray & Vanstone, 2009; Samper et al., 2004). However, within this sample, depression symptoms appear to be an even more significant factor affecting the parenting stress of military fathers. It is clear that this is an area that is currently understudied, and more data could significantly impact the health of military fathers and their families.

Defensive Responding within the Sample

Another striking finding of this study was the very high percentage of PSI defensive responders in this sample of Navy fathers (25.2%) in comparison to normative rates of between 5-8% within the general population (Parkes et al., 2011). There is no way to differentiate if these individuals were reporting much lower levels of parenting stress than they were actually experiencing, or if they were exceptionally competent parents with excellent support. The high level of PSI defensive responders suggests that participants were reluctant to answer without reservation, and may have preferred an anonymous, rather than a confidential, survey. Past rates of PTSD and depression reported anonymously versus confidentially were at least twice as high in military samples (McLay et al., 2008; Warner et al., 2011). Reasons for defensive responding within the population of male service members may include: concerns that the information will be seen by others, ultimately affecting career advancement and goals; distrust in the efficacy of support services and treatment programs; a desire to stop further perceived intrusion into service members' personal lives; and stigma associated with asking for help (Lee et al., 2013; Warner et al., 2011). Also,

defensive responding could be explained by the fact that the fathers were "not invested in the role of parent and, therefore, is [sic] not experiencing the usual stresses associated with caring for a child" because of their extended time commitments to the military organization (Abidin, 2012, p. 59).

Rates of PTSD and Depression within the Sample

Bearing in mind the high rates of defensive responding on the PSI within this sample, it is surprising that the rates of PTSD and depression were higher in this study than in previous studies of service members returning from deployment. If 25% of fathers were in the defensive responding category on the PSI, they may have also under-reported symptoms of PTSD and depression; if this were true, rates of depression and PTSD could actually be higher than those reported here. In this study, PTSD and depression occurred at the same rate of 17.1%, as compared to other studies where rates for PTSD were in the range of 2.1% to 9.8% using the same PTSD screening instrument (Hoge, Auchterlonie, & Milliken, 2006; Milliken et al., 2007; Warner et al., 2011), and rates for depression were in the 5.2% to 7.0% range using a similar PHQ screening instrument to the one used in our study (Hoge et al., 2008; Kolkow, Spira, Morse, & Grieger, 2007; Warner et al., 2011).

However, these prior studies have focused on data collection in Army and Marine service members, so it is surprising that a Navy sample, predominately composed of service members returning from ship-based deployments (67.6%) as opposed to ground combat operations, would have these elevated rates of PTSD

and depression. As Nash et al. (2010) theorized when they developed the operational stress model, service members are exposed to high intensity stressors during deployment, but the "relentless accumulation" of lower-intensity stressors over time may be more harmful to service members' resilience (p. 1674). Repeated and lengthier deployments, involving more time away from family and less time to recalibrate with loved ones, may have an adverse effect on the mental health of service members, even in the absence of direct combat operations. Also, many of these Navy fathers may have gone on land-based deployments to areas of high conflict prior to the most recent deployment that they reported within the study. This might be a variable to consider in future research.

Another possible explanation for the higher rates of PTSD and depression in this sample compared to other studies could be related to the fact that all respondents in this study were fathers with young children. Parents who are away from their young families may experience great concern about what is happening at home, as well as personal worries about returning home uninjured and alive (Schachman, 2010). For single service members without young children, they may have similar emotions, but may not experience them as intensely, or the emotions may be directed differently. A qualitative metasynthesis of the experience of deployment for families found that deployed parents experienced intensified emotions of guilt and sadness regarding the separation from family before, during, and after the deployment. Depression can be triggered by "trauma, loss of a loved one, a difficult relationship, or any

stressful situation"; risk factors for PTSD include "dealing with extra stress after the [precipitating] event" (National Institute of Mental Health, 2014).

Experiencing deployment as a father of young children may increase risk for depression and PTSD thereafter. The authors are unaware of other studies that examine the parenting stress of fathers (military or civilian), while also taking into account PTSD and depression. Studies of depression and PTSD in fathers are extremely rare. Previous studies have shown rates of depression in fathers ranging from 6.0% to 10.4% in pregnancy and postnatal periods (Paulson & Bazemore, 2010; Stramrood et al., 2013); a large national sample reported a rate of 6.2% in fathers, with independent predictors of depression including poor physical health, poverty, and depression in the spouse (Rosenthal, Learned, Liu, & Weitzman, 2013). Rates of PTSD in fathers of children who had either been recently diagnosed with Type I diabetes, or children who were at least one year out from treatment for cancer, were both 22.2% (Landolt et al., 2002; Ozono et al., 2007); fathers had PTSD rates of 30% when their child had been diagnosed with cancer within the previous 6 months (Dunn et al., 2012). More research needs to be done evaluating depression and PTSD in fathers under stress, as well as exploring modifiable and effective protective factors.

Limitations

It is important to note that restricting the sample based on an aspect of the outcome variable is not optimal for data analysis. However, as more than a quarter of the sample fell into the defensive responding category, it was felt to be

important to replicate the analysis within the restricted sample, and evaluate for any differences. Across both the full and the restricted samples, the results were consistent, and oftentimes of stronger magnitude, which might not be expected in a sample reduced by 25%.

Recruitment occurred at a large military outpatient clinic serving a wide range of Navy personnel, but if specific subsets of the Navy active duty population frequented this clinic more often, the sample would be biased. The sample is already biased based on the nature of volunteer enrollment – volunteers who enroll may reflect a certain type of individual who is not generalizable to the population. It was heartening to note, however, that over a seven month recruitment period within the clinic, the final sample was fairly representative of the larger Navy population.

Another limitation has already been alluded to in reference to the high rates of defensive responding on the PSI. Active duty participants may not have felt comfortable responding honestly to confidential questions regarding warfare exposure, mental health, or parenting stress. One potential study participant was very direct, and refused to participate unless the survey could be anonymous; he could not be enrolled (anon, personal communication, April 23, 2014). Several studies have shown that anonymous surveys elicit higher positive responses for mental health concerns versus surveys that can be linked with identifying data (McLay et al., 2008; Warner et al., 2011). When conducting research within a military sample, it is vitally important to communicate the

absolute confidentiality of the data, and its accessibility to the research team only.

Another limitation of this study was the low numbers of participants with high warfare exposure, which most likely underpowered the results on that variable. One participant noted that he did not answer the combat exposure questions transparently because he felt that if he did he would jeopardize operational secrets (anon, personal communication, November 18, 2013). The study itself took most participants approximately 30 minutes to complete on a handheld tablet. The survey was accessed via an online portal, and at times Internet connectivity was excessively slow. Participants may have had survey fatigue at certain points, and may have quickly answered questions in one way to get through the survey quicker. Participants were in a clinic setting, and had other things that they wanted to do once they completed the questionnaires. More than one respondent commented on the unexpected length of time it took to complete the survey, despite being informed of an average thirty minute duration by the investigator ahead of time (anon, personal communication, May 19, 2014).

Implications

It is important to acknowledge the role of deployment factors in influencing parenting stress scores in this population; from the data in this study, it is not possible to definitively say that depression symptoms are a mediating variable of this relationship. To be able to elucidate the exact mechanism of the

role of depression on influencing parenting stress, larger studies using a longitudinal design are needed. As this was a cross-sectional study, there is no ability to extract causal findings from the results, but the strong associations found can be useful in prompting clinicians to ask about deployment factors, and if indicated, to query their patients about family members, and to further explore family dynamics.

It may be difficult to find time in a busy clinical schedule to ask patients to answer a full Parenting Stress Index, which takes an average of 20 minutes to complete. And conducting screening questionnaires for PTSD and depression in Navy service members may not result in absolute transparency. However, in the context of a military setting, many more respondents may feel comfortable answering 3 or 4 general information questions relating to time away from home, and the perceived danger and warfare exposure of their most recent deployment. In a health care setting, higher values on these cues can signal to the clinician that a more in-depth assessment of family processes is needed. Depending on the outcome of this assessment, outreach to family members may be indicated. Delivering quality care to active duty members and their families is the goal of U.S. Navy medical programs such as Military Home Port, which "improve the partnership between the patient, his or her primary care provider and their primary care team, and, where appropriate, the patient's family" (Department of the Navy, 2010, p.2). The assessment of family health and subsequent delivery of care to the whole family would be a welcome trend in the care of active duty

members and veterans, who have been treated for far too long in isolation. The utilization of a more holistic model is needed, and appropriate, when looking at this population.

References

Abidin, R. R. (2012). *Parenting Stress Index, fourth edition: Professional manual*. Odessa, FL: Psychological Assessment Resources.

Armistead-Jehle, P., Johnston, S. L., Wade, N. G., & Ecklund, C. J. (2011). Posttraumatic stress in U.S. Marines: The role of unit cohesion and combat exposure. *Journal of Counseling & Development*, *89*(1), 81-88.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality & Social Psychology*, *51*, 1173-1182.

Booth-Kewley, S., Highfill-McRoy, R., Larson, G., Garland, C., & Gaskin, T. (2012). Anxiety and depression in Marines sent to war in Iraq and Afghanistan. *Journal of Nervous Mental Disease*, *200*(9), 749-757. doi:10.1097/NMD.0b013e318266b7e7

Bray, R., M., Pemberton, M., R., Lane, M., E., Hourani, L., L., Mattiko, M., J., & Babeu, L., A. (2010). Substance use and mental health trends among U.S. military active duty personnel: Key findings from the 2008 DoD Health Behavior Survey. *Military Medicine*, *175*(6), 390-399.

Calhoun, P. S., McDonald, S. D., Guerra, V. S., Eggleston, A. M., Beckham, J. C., & Straits-Troster, K. (2010). Clinical utility of the Primary Care-PTSD Screen among U.S. veterans who served since September 11, 2001. *Psychiatry Research*, *178*(2), 330-335. doi:10.1016/j.psychres.2009.11.009

Department of the Navy. (2010). BUMED Instruction 6300.19: Primary care

services in Navy medicine. Retrieved from http://www.med.navy.mil/directives/ExternalDirectives/6300.19.pdf

Dunn, M. J., Rodriguez, E. M., Barnwell, A. S., Grossenbacher, J. C., Vannatta, K., Gerhardt, C. A., & Compas, B. E. (2012). Posttraumatic stress symptoms in parents of children with cancer within six months of diagnosis. *[Erratum appears in Health Psychology, 2012, 31(6)] Health Psychology*, *31*(2), 176-185. doi:10.1037/a0025545

Fellman, S. (2013). 8-month deployments become the 'new norm'. *Navy Times*. Retrieved from http://archive.navytimes.com/article/20131202/NEWS/312020005

Fite, P. J., Greening, L., & Stoppelbein, L. (2008). Relation between parenting stress and psychopathic traits among children. *Behavioral Sciences & The Law*, *26*(2), 239-248. doi:10.1002/bsl.803

Flake, E. M., Davis, B. E., Johnson, P. L., & Middleton, L. S. (2009). The psychosocial effects of deployment on military children. *Journal of Developmental & Behavioral Pediatrics*, *30*(4), 271-278.

Foran, H. M., Heyman, R. E., Smith Slep, A. M., & Snarr, J. D. (2012). Hazardous alcohol use and intimate partner violence in the military: Understanding protective factors. *Psychology of Addictive Behavior*, *26*(3), 471-483. doi:10.1037/a0027688

Gewirtz, A. H., Polusny, M. A., DeGarmo, D. S., Khaylis, A., & Erbes, C. R. (2010). Posttraumatic stress symptoms among National Guard soldiers

deployed to Iraq: Associations with parenting behaviors and couple adjustment. *Journal of Consulting and Clinical Psychology*, *78*(5), 599-610. doi:10.1037/a0020571

Hoge, C. W., Auchterlonie, J. L., & Milliken, C. S. (2006). Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *Journal of the American Medical Association*, *295*(9), 1023-1032.

Hoge, C., W., McGurk, D., Thomas, J., L., Cox, A., L., Engel, C., C., & Castro, C., A. (2008). Mild traumatic brain injury in U.S. Soldiers returning from Iraq. *New England Journal of Medicine*, *358*(5), 453-463.

Hosek, J. (2011). *How is deployment to Iraq and Afghanistan affecting U.S. service members and their families? An overview of early RAND research on the topic.* RAND: National Defense Research Institute. Retrieved from http://www.rand.org/content/dam/rand/pubs/occasional_papers/2011/RAND_OP316.pdf

Kolkow, T. T., Spira, J. L., Morse, J. S., & Grieger, T. A. (2007). Post-traumatic stress disorder and depression in health care providers returning from deployment to Iraq and Afghanistan. *Military Medicine*, *172*(5), 451-455.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606-613.

Kroenke, K., Spitzer, R. L., Williams, J. B., & Lowe, B. (2010). The Patient Health

Questionnaire somatic, anxiety, and depressive symptom scales: A systematic review. *General Hospital Psychiatry*, *32*(4), 345-359. doi:10.1016/j.genhosppsych.2010.03.006

Landolt, M. A., Ribi, K., Laimbacher, J., Vollrath, M., Gnehm, H. E., & Sennhauser, F. H. (2002). Posttraumatic stress disorder in parents of children with newly diagnosed type 1 diabetes. *Journal of Pediatric Psychology*, *27*(7), 647-652.

Lee, S. J., Neugut, T. B., Rosenblum, K. L., Tolman, R. M., Travis, W. J., & Walker, M. H. (2013). Sources of parenting support in early fatherhood: Perspectives of United States Air Force members. *Children and Youth Services Review*, *35*(5), 908-915. doi:10.1016/j.childyouth.2013.02.012

Management of Deployments of Members and Measurement and Data Collection of Unit Operating and Personnel Tempo, 10 U.S.C, § 991 (2014).

McLay, R. N., Deal, W. E., Murphy, J. A., Center, K. B., Kolkow, T. T., & Grieger, T. A. (2008). On-the-record screenings versus anonymous surveys in reporting PTSD. *The American Journal of Psychiatry*, *165*(6), 775-776. doi:10.1176/appi.ajp.2008.07111710

Milliken, C. S., Auchterlonie, J. L., & Hoge, C. W. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *Journal of the American Medical Association*, *298*(18), 2141-2148.

Murphy, D. A., Marelich, W. D., Armistead, L., Herbeck, D. M., & Payne, D. L. (2010). Anxiety/stress among mothers living with HIV: Effects on parenting skills and child outcomes. *AIDS Care*, *22*(12), 1449-1458. doi:10.1080/09540121.2010.487085

Nash, W. P., Vasterling, J., Ewing-Cobbs, L., Horn, S., Gaskin, T., Golden, J., … Baker, D. G. (2010). Consensus recommendations for common data elements for operational stress research and surveillance: Report of a federal interagency working group. *Archives of Physical Medicine & Rehabilitation*, *91*(11), 1673-1683. doi:10.1016/j.apmr.2010.06.035

National Institute of Mental Health. (2014). *Depression and PTSD*. Retrieved from http://www.nimh.nih.gov/health/topics/index.shtml

Oath of Office, 5 U.S.C., § 3331 (2014).

Ouimette, P., Wade, M., Prins, A., & Schohn, M. (2008). Identifying PTSD in primary care: Comparison of the Primary Care PTSD screen (PC-PTSD) and the General Health Questionnaire-12 (GHQ). *Journal of Anxiety Disorders*, *22*(2), 337-343. doi:10.1016/j.janxdis.2007.02.010

Oxford, M. L., & Lee, J. O. (2011). The effect of family processes on school achievement as moderated by socioeconomic context. *Journal of School Psychology*, *49*(5), 597-612. doi:10.1016/j.jsp.2011.06.001

Ozono, S., Saeki, T., Mantani, T., Ogata, A., Okamura, H., & Yamawaki, S. (2007). Factors related to posttraumatic stress in adolescent survivors of

childhood cancer and their parents. *Supportive Care in Cancer*, *15*(3), 309-317. doi:10.1007/s00520-006-0139-1

Parkes, J., Caravale, B., Marcelli, M., Franco, F., & Colver, A. (2011). Parenting stress and children with cerebral palsy: A European cross-sectional survey. *Developmental Medicine & Child Neurology*, *53*(9), 815-821. doi:10.1111/j.1469-8749.2011.04014.x

Paulson, J. F., & Bazemore, S. D. (2010). Prenatal and postpartum depression in fathers and its association with maternal depression: A meta-analysis. *Journal of the American Medical Association*, *303*(19), 1961-1969.

Prins, A., Ouimette, P., Kimerling, R., Cameron, R. P., Hugelshofer, D. S., Shaw-Hegwer, J., ... Sheikh, J. I. (2003). The Primary Care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry*, *9*(1), 9-14.

Ray, S. L., & Vanstone, M. (2009). The impact of PTSD on veterans' family relationships: An interpretative phenomenological inquiry. *International Journal of Nursing Studies*, *46*(6), 838-847. doi:10.1016/j.ijnurstu.2009.01.002

Rholes, W. S., Simpson, J. A., & Friedman, M. (2006). Avoidant attachment and the experience of parenting. *Personality & Social Psychology Bulletin*, *32*(3), 275-285. doi:10.1177/0146167205280910

Rosenthal, D. G., Learned, N., Liu, Y.-H., & Weitzman, M. (2013). Characteristics of fathers with depressive symptoms. *Maternal and Child Health Journal*, *17*(1), 119-128. doi:10.1007/s10995-012-0955-5

Ruscio, A. M., Weathers, F. W., King, L. A., & King, D. W. (2002). Male war-zone veterans' perceived relationships with their children: The importance of emotional numbing. *Journal of Traumatic Stress*, *15*(5), 351-357.

Samper, R. E., Taft, C. T., King, D. W., & King, L. A. (2004). Posttraumatic stress disorder symptoms and parenting satisfaction among a national sample of male Vietnam veterans. *Journal of Traumatic Stress*, *17*(4), 311-315.

Sareen, J., Cox, B. J., Afifi, T. O., Stein, M. B., Belik, S. L., Meadows, G., & Asmundson, G. J. (2007). Combat and peacekeeping operations in relation to prevalence of mental disorders and perceived need for mental health care: Findings from a large representative sample of military personnel. *Archives of General Psychiatry*, *64*(7), 843-852.

Sayers, S. L., Farrow, V. A., Ross, J., & Oslin, D. W. (2009). Family problems among recently returned military veterans referred for a mental health evaluation. *Journal of Clinical Psychiatry*, *70*(2), 163-170.

Schachman, K. A. (2010). Online fathering: The experience of first-time fatherhood in combat-deployed troops. *Nursing Research*, *59*(1), 11-17.

Schaeffer, C. M., Alexander, P. C., Bethke, K., & Kretz, L. S. (2005). Predictors of child abuse potential among military parents: Comparing mothers and fathers. *Journal of Family Violence*, *20*(2), 123-129.

Stramrood, C. A. I., Doornbos, B., Wessel, I., van Geenen, M., Aarnoudse, J. G., van den Berg, P. P., … van Pampus, M. G. (2013). Fathers with PTSD and depression in pregnancies complicated by preterm preeclampsia or

PPROM. *Archives of Gynecology and Obstetrics*, *287*(4), 653-661. doi:10.1007/s00404-012-2611-0

U.S. Department of Defense. (2013). *2012 demographics profile of the military community*. Retrieved from http://www.militaryonesource.mil/12038/MOS/Reports/2012_Demographics_Report.pdf

Vogt, D. S., Proctor, S. P., King, D. W., King, L. A., & Vasterling, J. (2008). Validation of scales from the Deployment Risk and Resilience Inventory in a sample of operation Iraqi Freedom veterans. *Assessment*, *15*(4), 391-403. doi:10.1177/1073191108316030

Vogt, D., Smith, B., Elwy, R. , Martin, J., Schultz, M., Drainoni, M.-L., & Eisen, S. (2011). Predeployment, deployment, and postdeployment risk factors for posttraumatic stress symptomatology in female and male OEF/OIF veterans. *Journal of Abnormal Psychology*, *120*(4), 819-831. doi:10.1037/a0024457

Vogt, D., Smith, B. N., King, L. A., King, D. W., Knight, J., & Vasterling, J. J. (2013). Deployment Risk and Resilience Inventory-2 (DRRI-2): An Updated Tool for Assessing Psychosocial Risk and Resilience Factors Among Service Members and Veterans. *Journal of Traumatic Stress*, *26*(6), 710-717. doi:10.1002/jts.2013.26.issue-6

Walsh, T. B., Dayton, C. J., Erwin, M. S., Muzik, M., Busuito, A., & Rosenblum, K. L. (2014). Fathering after military deployment: Parenting challenges and

goals of fathers of young children. *Health & Social Work*, *39*(1), 35-44. doi:10.1093/hsw/hlu005

Warner, C. H., Appenzeller, G. N., Grieger, T., Belenkiy, S., Breitbach, J., Parker, J., Warner, C. M., & Hoge, C. (2011). Importance of anonymity to encourage honest reporting in mental health screening after combat deployment. *Archives of General Psychiatry*, *68*(10), 1065-1071.

Willerton, E., Schwarz, R. L., Wadsworth, S. M. M., & Oglesby, M. S. (2011). Military fathers' perspectives on involvement. *Journal of Family Psychology*, *25*(4), 521-530. doi:10.1037/a0024511

Wong K. (2013). Navy to stretch deployments; Aircraft carrier fleet down to nine. *The Washington Times*. Retrieved from http://www.washingtontimes.com/news/2013/jan/10/navy-stretch-deployments/?page=all

Chapter V

Parenting Stress in Navy Families:

The Importance of Spirituality and Social Support

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Introduction

Deployment is hard on active duty members (Booth-Kewley, Larson, Highfill-McRoy, Garland, & Gaskin, 2010; Demers, 2011; Tsai, Harpaz-Rotem, Pietrzak, & Southwick, 2012), and deployment is taxing on families (Huebner, Mancini, Wilcox, Grass, & Grass, 2007; Knobloch & Theiss, 2012; Lara-Cinisomo et al., 2012). There is not a lot of information on how deployment affects parenting for both the active duty member, and the home front spouse (Devoe & Ross, 2012; Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010; Palmer, 2008). A recent study has found an association between increased length of deployment, increased sense of danger on deployment, and increased warfare exposure on deployment, with increased parenting stress in active duty fathers who have returned from a deployment within the past year.

Since parenting stress can be increased by these deployment variables, the purpose of this study is to investigate if there are potential mitigators of parenting stress in military families. In order to formulate ideas about what factors might mitigate parenting stress within Navy families affected by deployment, a military-specific framework was used. The Operational Stress Model (Nash et al., 2010) was developed for use in military populations, and guided the conceptual model for this research. As Nash et al. state: "Operational stress encompasses more than just combat; it occurs everywhere service members and their families live and work" (p. 1673). Exposures to stress can range from high-intensity stressor events, such as the death of a close friend

during combat, to the accumulation of lower-intensity pressures that can lead to decreased adaptive capability over time. These exposures can lead to stress-induced outcomes that are reflected in physical, psychological, social and spiritual domains of wellness, ranging from mental health concerns to early-onset of physiologic disease.

Social Support and Stress

Increased levels of social support have consistently been shown in the literature to be associated with decreased levels of parenting stress (Cooklin, Giallo, & Rose, 2012; Flake, Davis, Johnson, & Middleton, 2009; McConnell, Breitkreuz, & Savage, 2011). Social support can be defined in either functional or structural terms (Sherbourne & Stewart, 1991). Structural social support is a measure of the types of relationships a family has, and how interconnected those relationships are. Functional social support is a measure of how interpersonal relationships contribute to specific functions of emotional and tangible support, and this was the focus of the present study. Much of the parenting stress and social support research has not been done in the military environment, which is unique in many aspects. Active duty members and their families are usually stationed far from the hometowns of their youth, and often are called upon to move from duty station to duty station every 2-4 years. This necessitates a change in their social support structure and living quarters on a fairly regular basis. Additionally, military families are regularly separated by deployment, which constitutes multiple layers of additional stress.

Studies in military families that include an aspect of social support as a variable have mostly focused on one member of the family. Those that have looked at the male active duty spouse have shown marriage and social support to be protective for suicide risk (Jakupcak et al., 2010), and post-traumatic stress disorder (PTSD) (Balderrama-Durbin et al., 2013; Carter et al., 2011). The marital relationship is a primary source of social support, and if this relationship is strong before deployment, post-deployment related stresses are lower (Allen, Rhoades, Stanley, & Markman, 2011) and PTSD symptom severity is lower (Carter et al., 2011). In fact, open communication about combat exposure with a spouse was associated with less PTSD symptom severity six to nine months post-deployment (Balderrama-Durbin et al., 2013). Focusing on family health and optimal communication is highly salient: a study of Marines who had deployed to Iraq and Afghanistan (n=1,569; sample 95% male) showed that deployment-related stressors were most associated with positive screens for PTSD, and the most oft-cited deployment stressor was "concerns or problems back home" (Booth-Kewley et al., 2010, p. 74).

Several studies have identified that male service members may benefit from and be more comfortable with peer support from other veterans (Laffaye, Cavella, Drescher, & Rosen, 2008; Smith et al., 2013; Tsai et al., 2012); "they can relate to what you're going through" (Demers, 2011, p. 172). In a study looking specifically at National Guard fathers who had been deployed to Iraq (n=468), these men reported relatively high levels of social support on deployment, which

may have been a result of unit camaraderie (Gewirtz et al., 2010). Service members with PTSD symptoms have difficulty retaining social support over time (King, Taft, King, Hammond, & Stone, 2006) and report more intimate partner relationship difficulty and stress (Laffaye et al., 2008; Tsai et al., 2012).

Female civilian spouses married to male active duty members have lower marital satisfaction (and may provide less high-quality social support) as PTSD symptoms increase (Renshaw, Rodrigues, & Jones, 2008). This link becomes stronger when wives attribute the PTSD symptoms to "internal, characterological variables" (Renshaw, Allen, Carter, Markman, & Stanley, 2014, p. 194), and this link becomes weaker when wives attribute the PTSD symptoms to traumatic events outside of a husband's control. However, there can be risk for partners in supporting a service member with PTSD: in partners of Vietnam veterans with high levels of PTSD, communication about combat experiences led to psychological distress (Campbell & Renshaw, 2012).

Another study measuring spousal distress pre, post, and during deployment showed that psychological distress was worst for spouses during the deployment; higher levels of relationship satisfaction post-deployment were predicted by higher social support during deployment, as well as by higher pre-deployment relationship satisfaction (Andres, 2014). During deployment, spouses reported that talking with someone else in a similar situation (social support), and praying or putting their trust in God (spiritual support) were the most effective ways of coping while their husbands were away (Blank, Adams,

Kittelson, Connors, & Padden, 2012). In a sample of parents with a deployed spouse (86% mothers), feeling supported during the deployment predicted better scores on measures of child psychosocial functioning (Flake et al., 2009). Wives who were pregnant when their spouses deployed experienced increased conflict accepting their pregnancy, but this conflict was decreased with increases in community social support (Weis, Lederman, Lilly, & Schaffer, 2008).

Only one recent study, to our knowledge, has focused on the experience of deployment for active duty mothers. In this study, mothers reported the importance of support - from their military units, from family readiness groups, from behavioral health care resources - on positive outcomes for their children, their families, and themselves (Goodman et al., 2013). These mothers talked about "summoning the village" to provide the support that their families needed in their absence (Agazio et al., 2013, p.255). There have been no studies, to our knowledge, that have focused on the male civilian spouse of a female active duty member.

Several studies have incorporated data from more than one member of a military family (Allen et al., 2011; Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Gewirtz, Pinna, Hanson, & Brockberg, 2014). This data has supported that families tend to look for support from other families going through similar phases of deployment, and service members tend to look for support from other veterans after deployment (Faber et al., 2008). In a study of 300 married couples, 78% of whom were parents, and all of whom had

experienced a deployment in the past year, a lack of perceived social support was associated with increased post-deployment stress in both husbands and wives (Allen et al., 2011). Do parents in military families feel that they have enough functional social support?

Spirituality

In contrast to social support, there is little literature to date investigating the effect of spirituality on parenting stress. Whereas social support is a measure of support provided by others, spirituality can be framed as a measure of internal support. Spirituality is a difficult construct to define, and is often confused with religiosity. Religiosity is related to religious beliefs (e.g. doctrinal teachings), concrete religious actions (e.g. prayer, reading of devotional literature), and relationship with a community of faith (e.g. frequency of religious institutional attendance) (Cain, 2007). Additionally, the religiosity construct has been positively related to social support in past research (Prado et al., 2004). Spirituality reflects an individual's relational awareness of the transcendent, divine, or holy through feelings and sensations, separate from religious beliefs (Underwood, 2011). The more private construct of spirituality may have a significant effect on parenting stress levels, and is distinct from the concept of social support. Investigation of spirituality in the context of military families is quite rare. In a recent qualitative study of 7 military couples, the majority utilized spirituality to help them cope during and after deployment (Hamlin-Glover, 2009). For the three couples with children at home, the

separation of deployment was considered a crisis event, which then exacerbated parenting stress for the nondeployed spouse. Does the construct of spirituality resonate with parents in military families?

The goal of this study is to examine whether individual spirituality and perceived social support are independent predictors of parenting stress levels even after accounting for the influence of deployment-related and other factors in both civilian mothers and active duty fathers. Previous research has shown significant relationships between parenting stress scores in active duty fathers and three deployment factors: 1) time away from home related to deployment in the past five years, 2) perceived threat of most recent deployment, and 3) warfare exposure of most recent deployment. The second goal is to examine whether spirituality and social support modify the association of deployment factors and parenting stress in active duty fathers.

Methods

Participants and Procedure

The sample consisted of 193 parents, both active duty U.S. Navy fathers who had recently returned from a deployment within the past year, and their civilian wives. The couples had at least one child in their home who was between one month of age and less than six years of age. Two fathers were excluded from the sample due to incomplete data, resulting in a final sample size of 111. After giving consent and finishing the questionnaire, these fathers were asked if their wives could be contacted. The spouses were contacted by phone,

and 82 consented to be part of the study. The study used a cross-sectional correlational research design.

After institutional review board approval, recruitment occurred at a large medical clinic, and informational materials, such as posters and brochures, were available in waiting rooms. In addition to active recruitment by the study investigator, informational materials were also distributed on ships, and recruitment emails were sent via specific shipboard distribution lists. All eligible and interested participant fathers met with study personnel at the clinic to complete an online questionnaire. All eligible wives who consented to the study were sent an email link to complete the questionnaire on their own at a convenient time.

The psychosocial health measures included: the Parenting Stress Index, three subscales of the Deployment Risk and Resiliency Index-2, the Primary Care PTSD screen, the Patient Health Questionnaire-8, the Life Stress Scale, the Medical Outcomes Study Social Support Survey Instrument, and the Daily Spiritual Experience Scale.

Study Variables

Outcome measure: Parenting stress. The construct of parenting stress is measured using the Parenting Stress Index (PSI), which assesses the parent-child system via questions on two specific domains. The first domain is the child domain - six subscales measure a parent's perception of her child's characteristics. The instrument uses the assumption that a parent's perception of

her child can increase that parent's stress, even if an outside observer does not perceive the child's behavior as being a cause for stress. The second domain is the parent domain - seven subscales measure a parent's perception of her own parenting characteristics. Each item is scored on a scale, ranging from "strongly disagree" to "strongly agree." The scores on the two domains are combined for a total PSI score; higher scores indicate higher levels of parenting stress. For interpretation, the scores on the PSI are converted to percentile ranks, which show where the individual scores fall in relation "to scores of the respondents in the normative sample" on which the PSI was based (Abidin, 2012, p. 13). A defensive responding score is also calculated, which may indicate misleading answers by the respondent (i.e. the parent is reporting abnormally low scores on multiple questions which in the majority of respondents elicit a much higher range). The rate of defensive responding in the general population is between 5 and 8% (Parkes, Caravale, Marcelli, Franco, & Colver, 2011). The reliability coefficient for the total PSI score was 0.96 in a sample of 2,633 parents (Abidin, 2012); the Cronbach's alpha in our sample was also 0.96. If the score for the total PSI was above the 85th percentile, parents were contacted with this information within 3 days and given contact information for self-referral.

Primary predictors.

Social support. The Social Support Survey Instrument was used in the Medical Outcomes Study (Sherbourne & Stewart, 1991) to measure functional support as opposed to structural support. A higher summative score indicates

more social support; the total scores ranges from 19 to 95. An example question: "I have someone to help with daily chores if I was sick." This instrument has been widely used in diverse populations with a reliability coefficient of 0.97, which was the same value obtained in this sample.

Spirituality. This construct was measured using the Daily Spiritual Experience Scale, which aims to quantify day-to-day experiences that reflect an "awareness of the divine or transcendent ... 'more than' what we can see or touch or hear" (Underwood, 2006). There are no subscales within the instrument, but questions capture various aspects of the construct such as connection, divine help, perceptions of divine love, awe, thankfulness, and compassionate love (Underwood & Teresi, 2002). The scale consists of fifteen items, with a total score ranging between 16 and 88. An example question: "I feel God's love for me, through others." Higher numbers indicate less spiritual experience, but for purposes of ease of interpretation within the study, the scoring direction was changed, as suggested by the author (Underwood, 2006). Cronbach's alpha reliability coefficients have ranged from 0.94 to 0.96 in various samples (Ellison & Fan, 2008; Underwood & Teresi, 2002). In this sample of military parents, the reliability coefficient was 0.97.

Other predictors.

Deployment factors. Four deployment factors were examined.

1. Number of deployments: fathers were asked how many deployments they had been on in the past five years.

2. Time away from home: fathers were asked how many months they had been away from home related to deployments in the past five years.

3. Perceived threat: this construct was measured using the Deployment Concerns subscale of the Risk and Resiliency Index-2 (DRRI-2), which reflects fear for personal safety during deployment. An example question: "I was concerned that I might encounter an explosive device." Reliability coefficients for the subscale of Deployment Concerns in past studies have been 0.89 (Vogt, Proctor, King, King, & Vasterling, 2008). The Cronbach's alpha in this sample for the Deployment Concerns subscale was 0.90.

4. Warfare exposure: this construct was measured by combining two subscales of the DRRI-2, the Combat Experiences Scale and the Post-Battle Experiences Scale (Vogt et al., 2011). An example question: "I was involved in handling human remains." Reliability coefficients for the subscales of Combat Experiences, and Post-battle Experiences in past studies have been 0.89, and 0.85 respectively (Vogt et al., 2008). The Cronbach's alpha in this sample for the combined Warfare Exposure variable was 0.90.

PTSD. The Primary Care PTSD Screen instrument is administered to all Navy personnel returning from land-based deployments (Ouimette, Wade, Prins, & Schohn, 2008). The four questions are statements to be answered either "yes" or "no." If a person answers "yes" to three out of the four questions, the result is considered positive for PTSD (Prins et al., 2003). Previous research has shown that this instrument yields a sensitivity of .83 and a specificity of .85

(Calhoun et al., 2010). In this study, the Cronbach's alpha coefficient was 0.78. If parents screened positive for PTSD, they were contacted with this information within 3 days and given contact information for self-referral.

Depression. The Patient Health Questionnaire-8 (PHQ-8) screens for depression, using a total of nine questions; scores can range from 0 to 24, and a score of 10 or above has 88% sensitivity and 88% specificity for major depression (Kroenke, Spitzer, & Williams, 2001). A Cronbach's alpha of .86 is reported, with test-retest reliability at .84 (Kroenke, Spitzer, Williams, & Lowe, 2010). In this study, the reliability coefficient was 0.86 also. If parents screened positive for depression (i.e. had a score of 10 or above on the instrument), they were called with this information within 3 days and given contact information for self-referral, and encouraged to follow through and contact a health care provider or mental health professional.

Life stress. The Life Stress Scale is an optional included instrument in the PSI, which is completely separate from the PSI score. The scale contains 19 items that assess family situational concerns within the past 12 months, such as financial difficulties, geographic relocation, and household changes. Each response is weighted differently for scoring purposes; total scores can range from 0 to 79.

Data Analysis

Descriptive analyses of the data included mean, standard deviation (SD) and percentiles for continuous variables, and frequency and percentage for categorical variables. Pearson and Spearman correlational analysis was used to evaluate univariate relationships among the study variables. The internal consistency of instruments for the study sample was analyzed using Cronbach's alpha reliability coefficients. All continuous variables were examined for skewness. The variable of warfare exposure was significantly positively skewed, and was categorized into low (29-34), medium (35-45) and high (≥46) warfare exposure.

Influence of spirituality and social support on parenting stress.

Two different hierarchical multiple regressions were analyzed, one for spirituality and one for social support, to investigate their possible mitigating effects on parenting stress in both mothers and fathers. Linear regression was first used to obtain the unadjusted association between spirituality and parenting stress scores (model 1). Subsequently, the adjusted association was examined with sequential adjustments for years of education, childcare arrangements, and years in the military (model 2), life stress, and PTSD (model 3), depression (model 4), and the four deployment factors (model 5). Family factors (childcare arrangements and years in the military) were not significant in univariate regression for mothers ($p > .20$), and were excluded. The dependent variable was the parenting stress score. The second hierarchical multiple regression model

substituted the spirituality variable for the social support variable. Throughout the paper, these models will be referred to as "the comprehensive mitigator models."

Moderation effects of spirituality and social support.

To examine a possible moderating effect of spirituality or social support on the relationship between deployment variables and parenting stress scores in fathers, a different set of models was used. Within a hierarchical multiple regression, the main effects of spirituality and each individual deployment factor were entered, and then the interaction terms of spirituality with each deployment factor were added. The dependent variable was parenting stress. The next model substituted spirituality for social support. These models (which will be referred to in this paper as "the basic moderation models") were run for fathers only. As a final test of moderation effects in the sample of fathers, the interaction terms were added in the last step of the comprehensive mitigator models described above to look for significance. Graphical representations via scatterplots were analyzed to evaluate any significant findings.

Sensitivity analysis.

The sample was modified, setting aside the results for the group of parents who scored 24 or below on the defensive responding scale of the PSI. Those parents whose scores were above 24 were referred to as "the restricted sample" of responders. The two groups of fathers (the restricted sample vs. defensive responders) and the two groups of mothers (the restricted sample vs.

defensive responders) were compared across demographic and study variables; categorical variables were analyzed using chi-squared testing, and continuous variables were analyzed using independent samples t-tests. The analysis plan described previously was performed on the restricted sample. If significant moderation effects were found across both the full and restricted samples, analysis was compared for both. In all cases (except one noted in the text), the strength and direction of associations were similar. When describing moderation effects in the text, the analysis for the restricted sample is used.

Assessing the influence of outliers.

The study team evaluated the three continuous deployment factors (time away from home, number of deployments, and perceived threat) for outliers. Using the outlier labeling rule (Hoaglin & Iglewicz, 1987), three participants were removed from the full sample of fathers, and three participants were removed from the full sample of mothers. Data analysis was run with and without outliers, and differences noted were minor; within this paper, written interpretations and data presented in tabular or graphical form include all outliers.

All data was analyzed and interpreted using SPSS Version 22 (IBM Statistics). The alpha value for statistical significance in all tests was 0.05 (two-tailed).

Results

Demographics

The sample comprised a total of 111 fathers who had returned from a deployment within the past year, and 82 of their female civilian spouses. All parents had at least one child under six years of age living with them at home. Over 95% of parents were biologically linked to their offspring; others were either step-parents or adoptive parents. Within our sample, mean PSI scores were roughly equivalent to a normal 50th percentile score. Mean levels of spiritual experience were higher for mothers than for fathers. The majority of mothers and fathers experienced the same life stressors of promotion at work, moving to a new location, pregnancy, and starting a new job; 36% of mothers in this sample were employed full or part-time for pay. Fathers had additional life stressors of conflict with superiors at work, and the death of a close friend, which may have reflected deployment and post-deployment events. Table V.1 shows characteristics of variables within the study.

Table V.1

Descriptive Variables for Fathers (n=111) and Mothers (n=82)

	Fathers (M, SD)	Mothers (M, SD)
Demographics		
Age	32.14 (±6.10)	30.48 (±5.06)
Years of Education	14.23 (±2.29)	15.18 (±2.56)
Years of Marriage	6.37 (±3.80)	5.89 (±3.56)
Number of Children	2.06 (±1.13)	1.95 (±1.01)
Years in the Military	10.03 (±5.33)	9.85 (±5.44)
Predictors		
Number of Deployments	2.39 (±1.27)	2.39 (±1.66)
Time Away from Home (months)	19.95 (±11.31)	18.33 (±11.25)
Perceived Threat	24.06 (±10.30)	24.33 (±10.17)
Life Stress	10.66 (±9.01)	9.41 (±8.21)
PTSD	1.03 (±1.37)	0.94 (±1.29)
Depression	4.70 (±4.73)	4.28 (±4.67)
Social Support	80.76 (±15.39)	77.89 (±16.77)
Spirituality	57.70 (±23.62)	65.54 (±20.13)
Outcome		
Parenting Stress	216.93 (±46.72)	218.11 (±46.50)
	Fathers (n, %)	Mothers (n, %)
Demographics		
Weekly childcare	50 (45.05)	35 (42.68)
Currently employed	111 (100.00)	30 (36.59)
Race		
Caucasian	72 (64.86)	55 (67.07)
Afri-American	26 (23.42)	18 (21.95)
Other	13 (11.71)	9 (10.98)
Hispanic	19 (17.12)	16 (19.51)

Rank		
Junior enlisted	49 (44.14)	36 (43.90)
Senior enlisted	46 (41.44)	33 (40.24)
Junior officer	10 (9.01)	9 (10.98)
Senior officer	6 (5.41)	4 (4.88)
Deploy location		
Iraq/Afghan	7 (6.31)	6 (7.32)
Ship-based	75 (67.57)	59 (71.95)
Other	29 (26.13)	17 (20.73)
PTSD positive screens	19 (17.12)	11 (13.41)
Depression positive screens	19 (17.12)	12 (14.63)
Top 6 Life Stressors		
1	Promotion at work: 42	Move to new location: 35
2	Move to new location: 41	Pregnancy: 25
3	Conflict w/superiors: 32	Promotion at work: 23
4	Pregnancy: 23	Entered new school: 17
5	Began new job: 24	Began new job:17
6	Death close friend: 21	Marriage: 11
Predictors		
Warfare Exposure		
Low	68 (61.26)	52 (63.41)
Med	35 (31.53)	25 (30.49)
High	8 (7.21)	5 (6.10)

Main Analysis

Bivariate correlations were examined between deployment factors, demographic variables, and spirituality and social support (see Table V.2 and Table V.3).

Table V.2

Correlation Matrix for Spirituality and Social Support Against other Study Variables for Fathers

	Spirituality	Social Support
Spirituality	1	
Social Support	.25***	1
Life Stress	-.01	-.29***
PTSD	.03	-.14
Depression	-.12	-.29***
Number Deployments	-.08	.04
Time Away from Home	-.08	-.01
Perceived Threat	.01	-.12
Warfare Exposure	-.11	-.22**
Deployment Location	.12	.03
Age	.26***	.16
Years of Education	.09	.03
Years of Marriage	.10	.05
Number of Children	.18*	.03
Years in the Military	.21**	.23**
Child Care	.01	-.19**
Rank	.01	.18
Parenting Stress	-.25***	-.53****

* : $p \leq 0.10$ ** : $p \leq 0.05$ *** : $p \leq 0.01$ **** : $p \leq 0.001$

Table V.3

Correlation Matrix for Spirituality and Social Support Against other Study Variables for Mothers

	Spirituality	Social Support
Spirituality	1	
Social Support	.25**	1
Life Stress	-.15	.03
PTSD	-.13	-.21*
Depression	-.35****	-.39****
Number Deployments	-.13	.01
Time Away from Home	-.08	-.09
Perceived Threat	.21*	-.03
Warfare Exposure	-.12	-.20
Deployment Location	.16	.05
Age	.07	-.03
Years of Education	.12	.09
Years of Marriage	.15	-.07
Number of Children	.06	-.15
Years in the Military	.07	.07
Child Care	.00	-.06
Rank	-.15	.14
Parenting Stress	-.50****	-.52****

* : $p \leq 0.10$ ** : $p \leq 0.05$ *** : $p \leq 0.01$ *** : $p \leq 0.001$

Influence of spirituality and social support on parenting stress.

The comprehensive mitigator models were analyzed for the full sample of 111 fathers and 82 mothers. The results of these analyses are shown in Table V.4 and Table V.5. Spirituality and social support were both significant independent predictors of total parenting stress scores. The magnitude of these effects reduced slightly but remained significant after adjusting for other factors. The higher the levels of both spirituality and social support, the lower the levels of parenting stress for both fathers and mothers.

Table V.4

Regression of Spirituality on Parenting Stress for Fathers and Mothers Across Multiple Models for the Full Sample

n=111 fathers n=82 mothers	Model 1 (Unadjusted)	Adjusted Model 2 (w/Block 2 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress & PTSD)	Adjusted Model 4 (additionally adjusted for Depression)	Adjusted Model 5 (additionally adjusted for Deployment Factors)
Spirituality for Fathers *b* (SE), *p* value	-.50 (±.18), 0.007	-.45 (±.18), 0.016	-.49 (±.17), 0.006	-.39 (±.16), 0.016	-.37, (±.16), 0.028
Spirituality for Mothers *b* (SE), *p* value	-1.15 (±.22), <0.001	-1.12 (±.22), <0.001	-1.06 (±.22), <0.001	-.78 (±.20), <0.001	-.81 (±.21), <0.001

Table V.5

Regression of Social Support on Parenting Stress for Fathers and Mothers Across Multiple Models for the Full Sample

n=111 fathers n=82 mothers	Model 1 (Unadjusted)	Adjusted Model 2 (w/Block 2 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress & PTSD)	Adjusted Model 4 (additionally adjusted for Depression)	Adjusted Model 5 (additionally adjusted for Deployment Factors)
Social Support for Fathers *b* (SE), *p* value	-1.61 (±.25), <0.001	-1.51 (±.26), <0.001	-1.41 (±.26), <0.001	-1.19 (±.24), <0.001	-1.14, (±.25), <0.001
Social Support for Mothers *b* (SE), *p* value	-1.42 (±.27), <0.001	-1.40 (±.27), <0.001	-1.24 (±.26), <0.001	-.88 (±.25), 0.001	-1.03 (±.26), <0.001

Sensitivity analysis.

There were 28 fathers and 11 mothers who met the criteria for defensive responding, which was 20.2% of the sample. As expected, parents classified as defensive responders had significantly lower mean scores on parenting stress scores (p <0.001) than the restricted sample of responders. Additionally, defensive responders (both fathers and mothers) endorsed significantly more time away from home related to deployment by active duty fathers in the past five years (p =0.013), as compared to other parents (for fathers, mean rank 67.66 months compared to 52.07 months; for mothers, mean rank 54.32 months compared to 39.51 months). Mothers who were defensive responders also noted higher life stress scores than other parents (mean rank of 54.31 compared to mean rank of 39.65; p = .037). Parents who were classified as defensive responders also had lower mean scores on depression (for mothers, mean rank of 21.73 compared to mean rank of 44.56 with p = 0.001; for fathers, mean rank of 37.95 compared to mean rank of 62.09 with p <0.001). There were no other significant differences between the two groups.

Data analysis proceeded as for the full sample. The results from the analysis of the comprehensive mitigator models mirrored those of the full sample: higher levels of spirituality and social support were associated with lower parenting stress scores.

Analyzing moderation effects for fathers.

When the moderation analyses were run for the full sample of fathers, the interactions between 1) spirituality and perceived threat (p = 0.039) and 2) spirituality and high warfare exposure (p = 0.027) were significant. There were no significant results related to social support for fathers. When the moderation analyses were conducted for the restricted sample of fathers, there was a significant effect seen between spirituality and the following deployment factors: 1) time away from home in the past 5 years (p =0.033), 2) perceived threat of most recent deployment (p =0.035), and 3) high warfare exposure (p = 0.043). These results indicate that spirituality may be a moderator of the relationship between these three deployment factors and parenting stress.

Moderation effect of spirituality on time away from home and parenting stress scores. In the low spirituality group, there was no relationship between time away from home and total parenting stress scores (R^2=.001). In the medium spirituality group, there was a moderate positive relationship between time away from home and PSI scores (R^2=.128). In the high spirituality group, there was again a moderate positive relationship between time away from home and PSI scores (R^2=.234). In those fathers with high levels of spiritual experience, the positive relationship between time away from home and parenting stress scores was strengthened. See Figure V.1 for a graphical representation of these relationships.

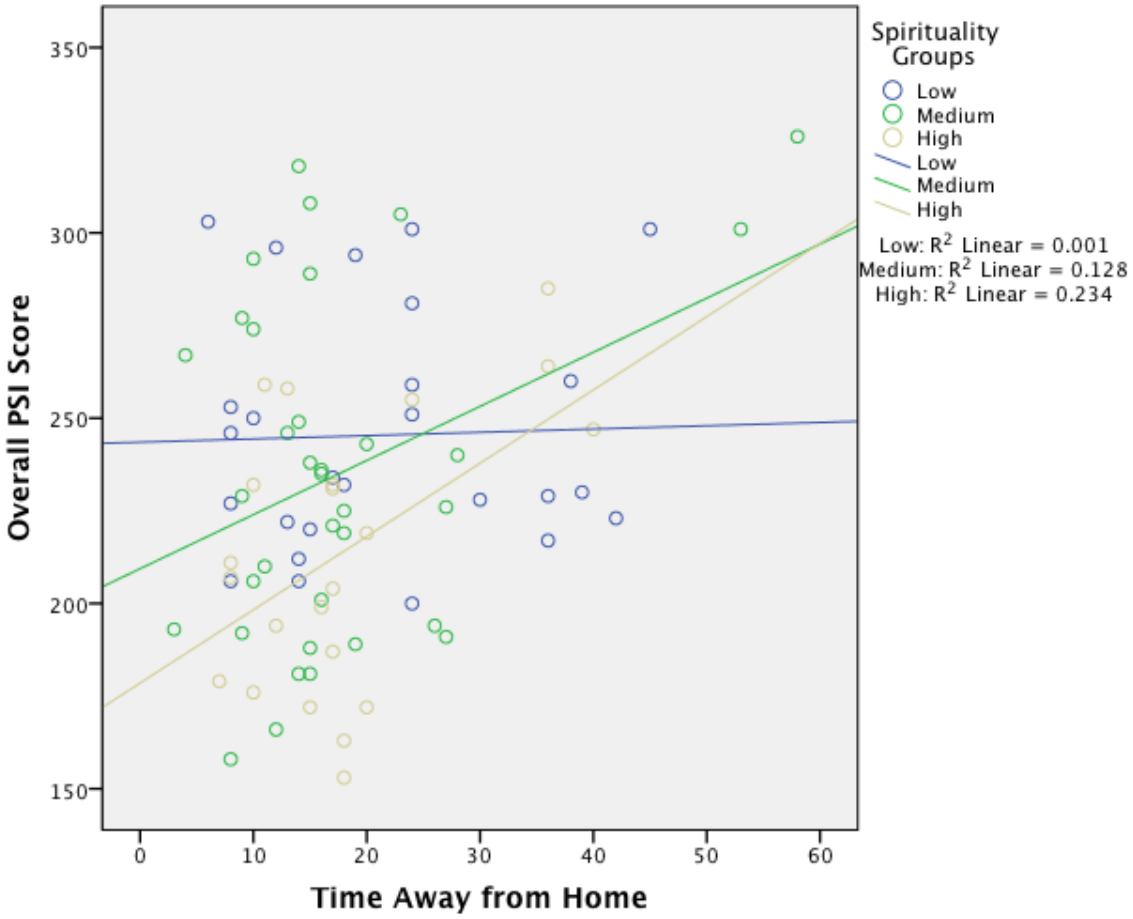

Figure V.1. Graphical Representation of the Moderation Effect of Spirituality on Time Away from Home and Parenting Stress Scores.

Moderation effect of spirituality on perceived threat and parenting stress scores. In the low spirituality group, there was a small positive relationship between perceived threat and total parenting stress scores (R^2=.016). In the medium spirituality group, there was a moderate positive relationship between perceived threat and PSI scores (R^2=.128). In the high spirituality group, there was a moderate to strong positive relationship between perceived threat and PSI scores (R^2=.474). Higher levels of spirituality moderated the relationship between perceived threat and parenting stress scores, such that this relationship was strengthened.

Of note, within the full sample, the moderation effects in the low and medium spirituality groups were similar to those noted above, but different for the high spirituality group. There was no relationship between perceived threat and parenting stress scores in the high spirituality group (R^2=.005). See Figure V.2 and Figure V.3 for graphical representations of these relationships.

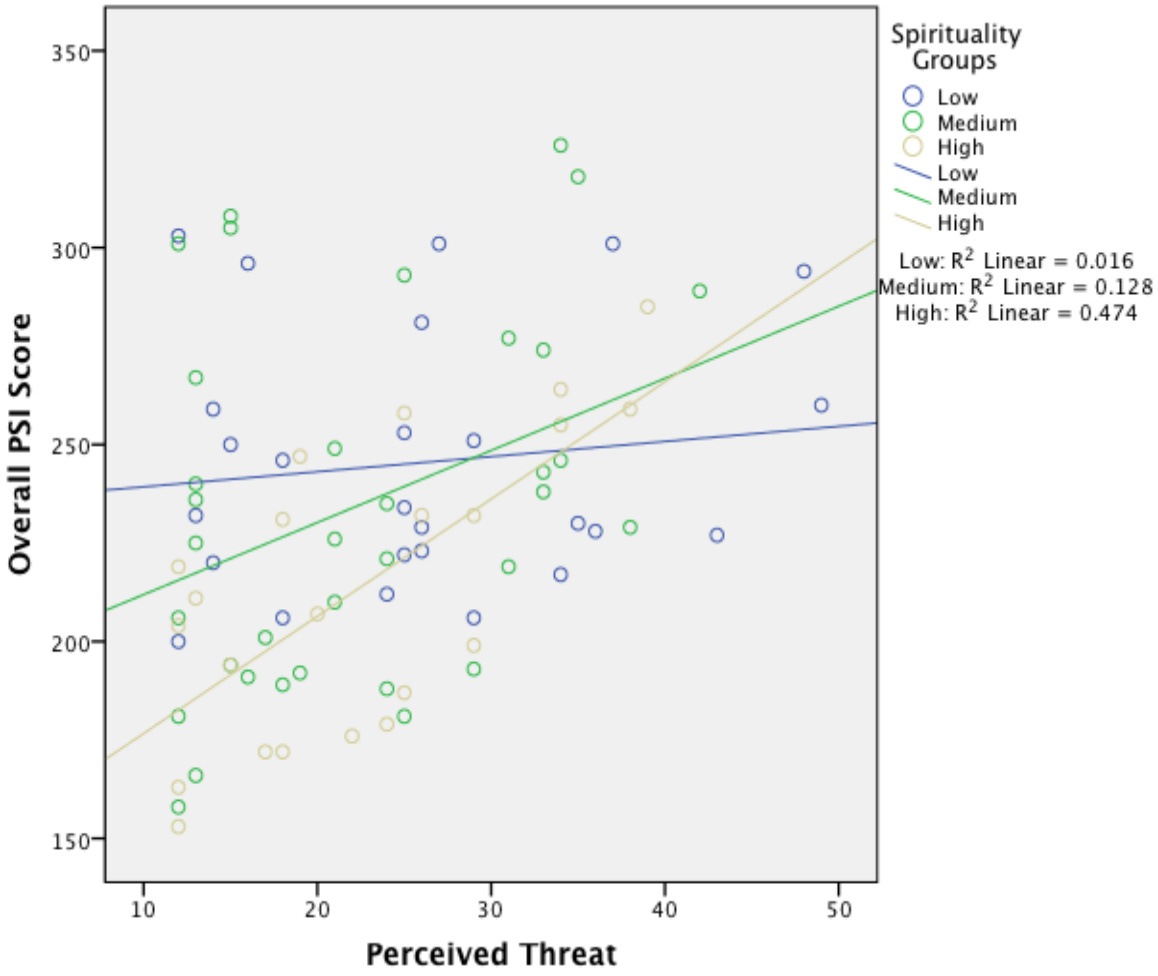

Figure V.2. Graphical Representation of the Moderation Effect of Spirituality on Perceived Threat and Parenting Stress Scores in the Restricted Sample.

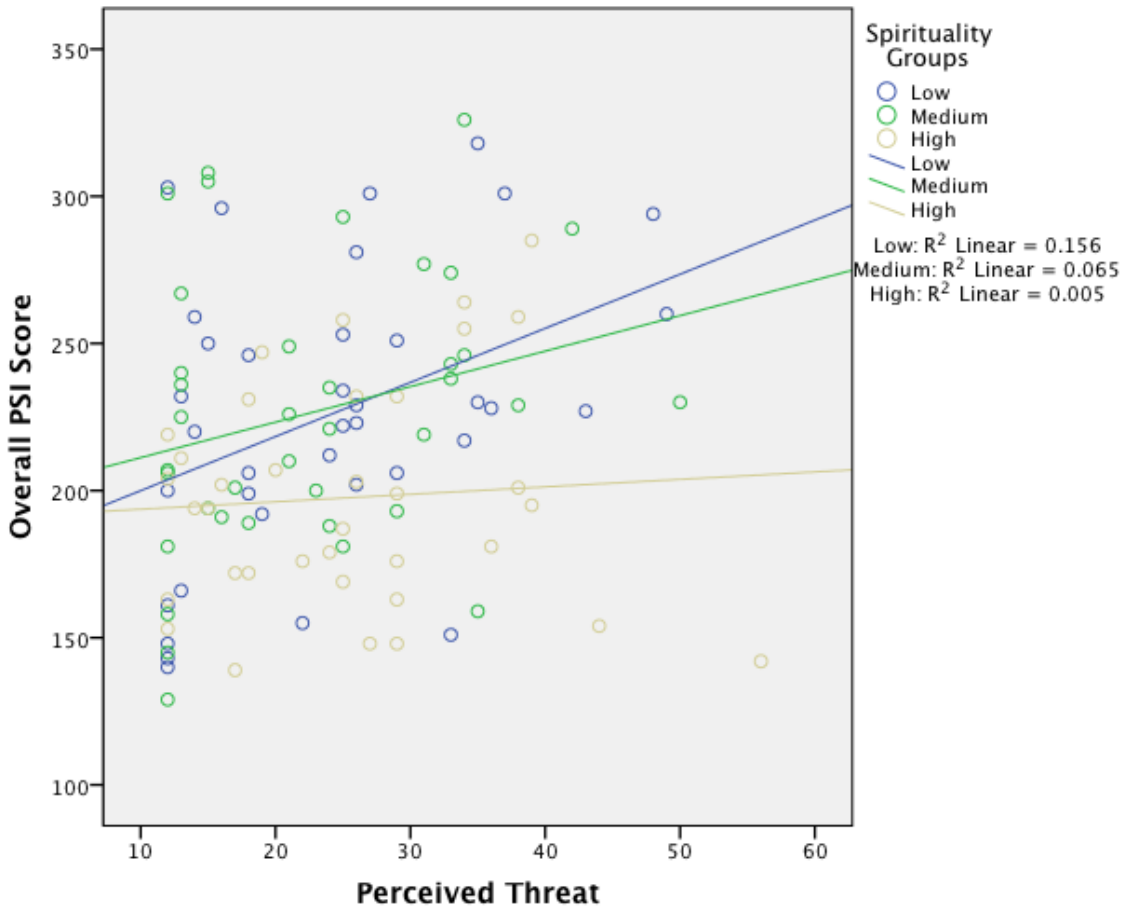

Figure V.3. Graphical Representation of the Moderation Effect of Spirituality on Perceived Threat and Parenting Stress Scores in the Full Sample.

Moderation effect of spirituality on warfare exposure and parenting stress scores. The effect of spirituality on the relationship between different levels of warfare exposure (low, medium, and high), and total parenting stress was evaluated. Because the variable of warfare exposure was categorized, graphical representations looked at the relationship between spirituality and parenting stress scores among different levels of warfare exposure. In the low warfare exposure group, there was a moderate negative relationship between spirituality and total parenting stress scores (R^2=.173); thus higher levels of spirituality were associated with lower PSI scores. In the medium warfare exposure group, there was a small negative relationship between spirituality and PSI scores (R^2=.019). In the high warfare exposure group, there was a moderate positive relationship between spirituality and PSI scores (R^2=.166). For those fathers with higher warfare exposure (n=8), the higher their levels of spiritual experience, the higher their parenting stress scores. See Figure V.4 for a graphical representation of these relationships.

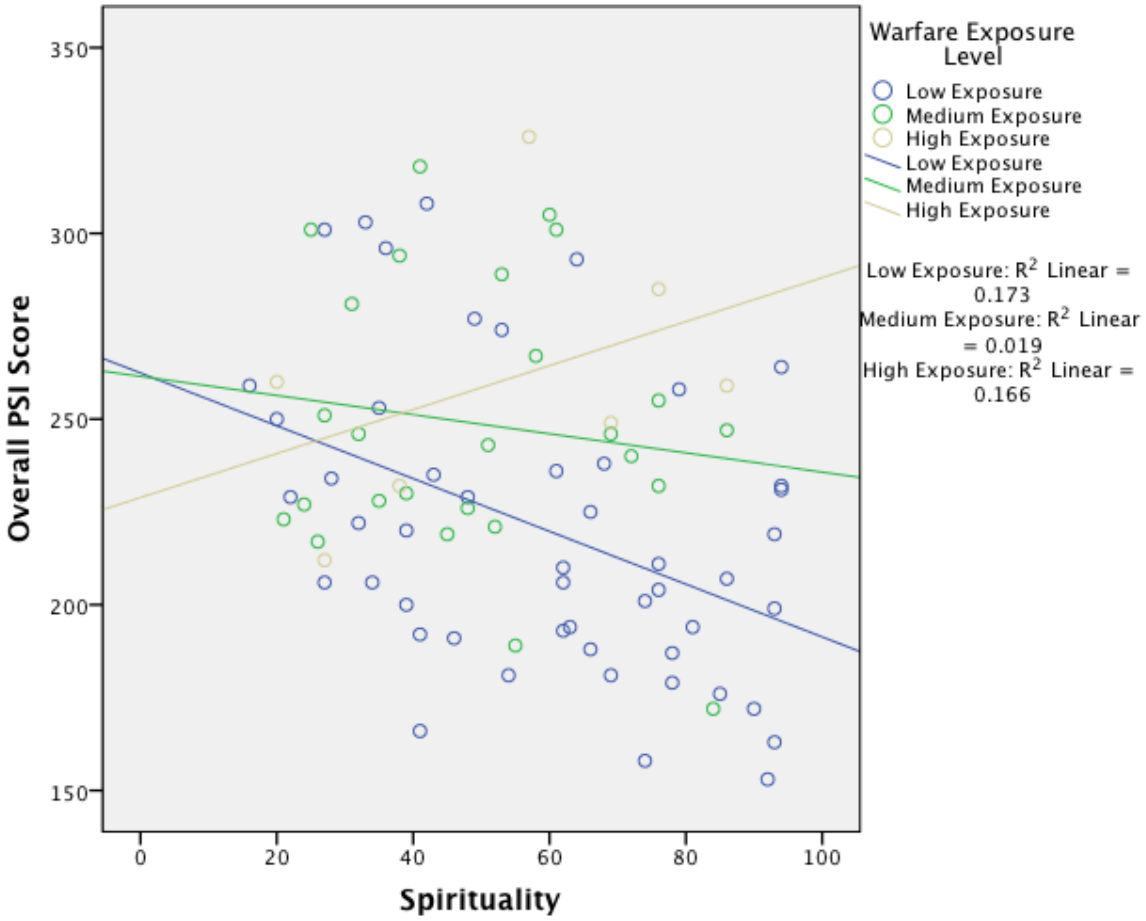

Figure V.4. Graphical Representation of the Relationship between Spirituality and Parenting Stress Scores among Different Levels of Warfare Exposure in the Restricted Sample.

The moderating effect of increasing levels of spirituality was to strengthen the positive relationships between the significant deployment factors and parenting stress scores in fathers within the restricted sample. However, although these relationships were strengthened, it does not automatically follow that parenting stress scores were higher in those with higher levels of spirituality. To add perspective to this data, the five highest PSI scores in the low and medium groups of spirituality were in the 294 to 326 range (M, SD = 305.3, ± 9.8), with the mean roughly correlating to the 85th percentile, which is "considered high, and referral should be discussed" (Abidin, 2012, p. 15). In the high spirituality group, the five highest PSI scores were in the 255 to 285 range (M, SD = 264.2, ± 12.1), with the mean roughly correlating to the 70th percentile, which is within the normal range of parenting stress.

Discussion

The direct effect of higher spirituality and higher social support scores was to independently predict lower parenting stress scores for both fathers and mothers. Mean scores for social support were high for both mothers and fathers, ranging in the upper quartile of the scale. Fathers' mean scores for spiritual experience were slightly above the midpoint for the scale; mother's mean scores were in the upper tertile of the instrument. Spirituality and social support may be direct protective factors for parenting stress; when designing effective interventions for military families, these factors should be considered for inclusion. This is an area for further research.

Spirituality as a Potential Moderator

The results of the moderation analyses were unexpected - it was thought that spirituality would moderate the relationship between deployment factors and parenting stress, such that high levels of spirituality would lead to weaker relationships between deployment factors and parenting stress scores. However, a father with high levels of spiritual experience was more likely to exhibit a stronger relationship between elevated parenting stress scores and 1) increased time away from home, 2) increased feelings of threat on his most recent deployment, and 3) high warfare exposure on his most recent deployment, in comparison to a father with low spirituality scores. Of note, the mean elevated parenting stress scores for the high spirituality group were still within the normal PSI range, while the mean high scores for the low and medium spirituality groups were in the high range of the instrument, where clinical intervention is recommended.

Why would high levels of spirituality act to strengthen the relationship between deployment factors and parenting stress? Individuals call upon their spiritual reserves in times of high uncertainty and conflict (Ellison & Fan, 2008). This may explain why spirituality is a strong moderator of the link between these deployment factors and parenting stress. For example, fathers who experience more feelings of threat on deployment may utilize the comfort gained from their spiritual experience to help them cope with uncertainty and danger. Their heightened feelings of danger from deployment are linked to increases in

parenting stress upon return to family, but high levels of spirituality appear to keep these stresses within a more normal range of experience. Spiritual experience does not cause stress to disappear, but it may make the stress more manageable for fathers.

Interestingly, in our sample of fathers, although mean social support was high, it was not a significant moderator of the effect between deployment factors and parenting stress. Previous literature shows that active duty fathers report high levels of social support on deployment (Gewirtz et al., 2010), and male service members may feel more comfortable with veteran social support upon reintegration (Demers, 2011; Faber et al., 2008; Hinojosa & Hinojosa, 2011). But social support did not have the same moderating effect as was seen with spirituality. Perhaps the more private concept of spiritual experience was more salient to the deployment stressors fathers faced, as well as to the unique stressors of parenthood, than the more public concept of social support. This is an area for further research.

Parenting Stress, PTSD and Depression within the Sample

To our knowledge, this is the first study to look at parenting stress for both parents after one of them has been in danger. Most often parenting stress has been studied when a child's health is in danger (An, Song, Sung, & Joung, 2011; Howe, Sheu, Wang, & Hsu, 2014; Potterton, Stewart, & Cooper, 2007). Other studies have looked at parenting stress in the context of maternal HIV, where those mothers who were more anxious or distressed regarding their

health exhibited increased parenting stress (Murphy, Marelich, Armistead, Herbeck, & Payne, 2010; Oswalt & Biasini, 2012). Additionally, mothers recovering from addiction with lower levels of social support showed higher levels of parenting stress (Harmer, Sanderson, & Mertin, 1999). Across both mothers and fathers within the study sample, mean PSI scores were roughly equivalent to a 50th percentile score.

Mothers and fathers had similar rates of PTSD (13% and 17%), and similar rates of depression (14% and 17%). Fathers' rates of PTSD in this study were higher than prevalence estimates in other recent studies (Hoge, Auchterlonie, & Milliken, 2006; Milliken, Auchterlonie, & Hoge, 2007; Warner et al., 2011), which ranged from 2.1 to 9.8% using the same instrument and scoring. Fathers' rates of depression in this study were also higher than those seen in other recent studies (Hoge et al., 2008; Kolkow, Spira, Morse, & Grieger, 2007; Warner et al., 2011), where the rates ranged from 5.2 to 7.0%. Rates of depression and PTSD for mothers in this study were similar to those found in other recent studies, which ranged from 13.1% to 30% for depression (Gorman, Blow, Ames, & Reed, 2011; Lester et al., 2010; Mansfield et al., 2010), and from 1.1 to 21% for PTSD (Gorman et al., 2011; Mansfield et al., 2010; Melvin, Gross, Hayat, Jennings, & Campbell, 2012; Renshaw et al., 2011).

Limitations

Within the study sample of mothers and fathers, 20% met the criteria for defensive responding, which is much higher than the 5 to 8% rate reported in the

general population (Parkes et al., 2011). This indicates that there may be privacy concerns and worries about disclosure in this population. There is already data that shows that military members are more likely to answer questions without reservation if they are anonymous (McLay et al., 2008; Warner et al., 2011), but this study shows that civilian wives of military members may also be more guarded in their responses than a civilian sample unaffiliated with the military. This is a limitation of our study, and also may limit future understanding of how deployment factors affect the military family.

Another limitation to the study was the way in which the restricted sample was defined. The restriction was defined based on an element of the outcome variable (the PSI), and thus 20% of the sample was excluded based on the dependent variable. Despite this, the comparison of results across the full and restricted samples showed similar relationships, which could be surprising in a sample reduced by 20%.

There were very few participants within our study who had experienced high levels of warfare exposure. With only eight participants, it is difficult to make any definitive conclusions about the moderating effect of spirituality on the relationship between warfare exposure and parenting stress. The moderating effect of spirituality on the relationships between deployment factors and parenting stress is worthy of more extensive research. A larger study utilizing a longitudinal design would be appropriate to explore the relationships among these different variables.

Implications for Practice

It is vital that clinicians demonstrate empathetic, nonjudgmental concern for military families, as well as skillful and attentive family assessment skills. Military members with PTSD have great difficulty with family communication, cohesion, and closeness: as a clinician, it is important to extend care and concern to family members as well. Rates of depression and PTSD in this study were higher than reported elsewhere, indicating a need to more thoroughly address mental health as a component of quality health care.

The study's most striking findings showed that spirituality and social support were both significant independent predictors of parenting stress; as spirituality and social support increased, parenting stress scores decreased. As this was a cross-sectional study, causality cannot be inferred, but the results do confirm and advance other research advocating social support as an appropriate intervention for at-risk families (Cooklin et al., 2012; McConnell et al., 2011; Solem, Christophersen, & Martinussen, 2011). To our knowledge, this is the first study to specifically investigate spirituality in the context of parenting stress.

Within the military, there exists a Chaplain Corps who serve the spiritual needs of military members, no matter their religious background (Besterman-Dahan, Gibbons, Barnett, & Hickling, 2012). This resource could be highlighted and bolstered within the various services, and more focus given to specific dimensions of spiritual experience for military service members. There has been a recent push to better integrate chaplains with mental health providers within

military health care (Nieuwsma et al., 2014). With enhanced integration of services, interventions could be designed incorporating chaplains, nurses, psychologists, social workers, physicians, and others who could develop multi-dimensional programs to provide support to military families experiencing deployment. Similar programs have been developed for active duty families (Lester et al., 2012) as well as National Guard and Reserve military families (Gewirtz et al., 2014; Walsh et al., 2014), but are currently available only to limited subsets of the targeted populations.

Health is multi-faceted, encompassing physical, mental, social, and spiritual domains (World Health Organization, 1998). This study provides a small pocket of evidence for increased attention to the spiritual, social, and mental domains of health; all members of the military family will benefit when health care deploys a holistic framework for healing.

References

Abidin, R. R. (2012). *Parenting Stress Index, fourth edition: Professional manual*. Odessa, FL: Psychological Assessment Resources.

Agazio, J., Hillier, S. L., Throop, M., Goodman, P., Padden, D., Greiner, S., & Turner, A. (2013). Mothers going to war: The role of nurse practitioners in the care of military mothers and families during deployment. *Journal of the American Association of Nurse Practitioners*, *25*(5), 253-262. doi:10.1111/j.1745-7599.2012.00811.x

Allen, E., S., Rhoades, G., K., Stanley, S., M., & Markman, H., J. (2011). On the home front: Stress for recently deployed Army couples. *Family Process*, *50*(2), 235-247.

An, K. J., Song, M. S., Sung, K. W., & Joung, Y. S. (2011). Health-related quality of life, activities of daily living and parenting stress in children with brain tumors. *Psychiatry Investigation*, *8*(3), 250-255.

Andres, M. (2014). Distress, support, and relationship satisfaction during military-induced separations: A longitudinal study among spouses of Dutch deployed military personnel. *Psychological Services*, *11*(1), 22-30. doi:10.1037/a0033750

Balderrama-Durbin, C., Snyder, D. K., Cigrang, J., Talcott, G. W., Tatum, J., Baker, M., ... Smith Slep, A. M. (2013). Combat disclosure in intimate relationships: Mediating the impact of partner support on posttraumatic stress. *Journal of Family Psychology*, *27*(4), 560-568. doi:10.1037/a0033412

Besterman-Dahan, K., Gibbons, S. W., Barnett, S. D., & Hickling, E. J. (2012). The role of military chaplains in mental health care of the deployed service member. *Military Medicine*, *177*(9), 1028-1033.

Blank, C., Adams, L. A., Kittelson, B., Connors, R. A., & Padden, D. L. (2012). Coping behaviors used by Army wives during deployment separation and their perceived effectiveness. *Journal of the American Academy of Nurse Practitioners*, *24*(11), 660-668. doi:10.1111/j.1745-7599.2012.00766.x

Booth-Kewley, S., Larson, G. E., Highfill-McRoy, R. M., Garland, C. F., & Gaskin, T. A. (2010). Correlates of posttraumatic stress disorder symptoms in Marines back from war. *Journal of Traumatic Stress*, *23*(1), 69-77. doi:10.1002/jts.20485

Cain, D.S. (2007). The effects of religiousness on parenting stress and practices in the African American family. *Families in Society*, *88*(2), 263-272. doi:10.1606/1044-3894.3624

Calhoun, P. S., McDonald, S. D., Guerra, V. S., Eggleston, A. M., Beckham, J. C., & Straits-Troster, K. (2010). Clinical utility of the Primary Care-PTSD Screen among U.S. veterans who served since September 11, 2001. *Psychiatry Research*, *178*(2), 330-335. doi:10.1016/j.psychres.2009.11.009

Campbell, S. B., & Renshaw, K. D. (2012). Distress in spouses of Vietnam veterans: Associations with communication about deployment experiences. *Journal of Family Psychology*, *26*(1), 18-25. doi:10.1037/a0026680

Carter, S., Loew, B., Allen, E., Stanley, S., Rhoades, G., & Markman, H. (2011). Relationships between soldiers' PTSD symptoms and spousal communication during deployment. *Journal of Traumatic Stress*, *24*(3), 352-355. doi:10.1002/jts.20649

Cooklin, A. R., Giallo, R., & Rose, N. (2012). Parental fatigue and parenting practices during early childhood: An Australian community survey. *Child: Care, Health and Development*, *38*(5), 654-664. doi:10.1111/j.1365-2214.2011.01333.x

Demers, A. (2011). When veterans return: The role of community in reintegration. *Journal of Loss & Trauma*, *16*(1-3), 160-179. doi:10.1080/15325024.2010.519281

DeVoe, E. R., & Ross, A. (2012). The parenting cycle of deployment. *Military Medicine*, *177*(2), 184-190.

Ellison, C. G., & Fan, D. (2008). Daily spiritual experiences and psychological well-being among US adults. *Social Indicators Research*, *88*(2), 247-271. doi:10.1007/s11205-007-9187-2

Faber, A. J., Willerton, E., Clymer, S. R., MacDermid, S. M., & Weiss, H. M. (2008). Ambiguous absence, ambiguous presence: A qualitative study of military reserve families in wartime. *Journal of Family Psychology*, *22*(2), 222-230. doi:10.1037/0893-3200.22.2.222

Flake, E.M., Davis, B.E., Johnson, P.L., & Middleton, L. S. (2009). The psychosocial effects of deployment on military children. *Journal of Developmental & Behavioral Pediatrics*, *30*(4), 271-278.

Gewirtz, A. H., Pinna, K. L. M., Hanson, S. K., & Brockberg, D. (2014). Promoting parenting to support reintegrating military families: After deployment, adaptive parenting tools. *Psychological Services*, *11*(1), 31-40. doi:10.1037/a0034134

Gewirtz, A. H., Polusny, M. A., DeGarmo, D. S., Khaylis, A., & Erbes, C. R. (2010). Posttraumatic stress symptoms among National Guard soldiers deployed to Iraq: Associations with parenting behaviors and couple adjustment. *Journal of Consulting and Clinical Psychology*, *78*(5), 599-610. doi:10.1037/a0020571

Goodman, P., Turner, A., Agazio, J., Throop, M., Padden, D., Greiner, S., & Hillier, S. L. (2013). Deployment of military mothers: Supportive and nonsupportive military programs, processes, and policies. *Military Medicine*, *178*(7), 729-734.

Gorman, L. A., Blow, A. J., Ames, B. D., & Reed, P. L. (2011). National Guard families after combat: Mental health, use of mental health services, and perceived treatment barriers. *Psychiatric Services, 62*(1), 28-34.

Hamlin-Glover, D.L. (2009). *Spirituality, religion, and resilience among military families* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Order No. 3442121)

Harmer, A. L., Sanderson, J., & Mertin, P. (1999). Influence of negative childhood experiences on psychological functioning, social support, and parenting for mothers recovering from addiction. *Child Abuse & Neglect*, *23*(5), 421-433.

Hinojosa, R., & Hinojosa, M. S. (2011). Using military friendships to optimize postdeployment reintegration for male Operation Iraqi Freedom/Operation Enduring Freedom veterans. *Journal of Rehabilitation Research and Development*, *48*(10), 1145-1158. doi:10.1682/JRRD.2010.08.0151

Hoaglin, D. C., & Iglewicz, B. (1987). Fine-tuning some resistant rules for outlier labeling. *Journal of the American Statistical Association*, *82*(400), 1147-1149. Retrieved from http://www.jstor.org/stable/2289392

Hoge, C. W., Auchterlonie, J. L., & Milliken, C. S. (2006). Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *Journal of the American Medical Association*, *295*(9), 1023-1032.

Hoge, C., W., McGurk, D., Thomas, J., L., Cox, A., L., Engel, C., C., & Castro, C., A. (2008). Mild traumatic brain injury in U.S. Soldiers returning from Iraq. *New England Journal of Medicine*, *358*(5), 453-463.

Howe, T.-H., Sheu, C.-F., Wang, T.-N., & Hsu, Y.-W. (2014). Parenting stress in families with very low birth weight preterm infants in early infancy. *Research in Developmental Disabilities*, *35*(7), 1748-1756.

Huebner, A. J., Mancini, J. A., Wilcox, R. M., Grass, S. R., & Grass, G. A. (2007). Parental deployment and youth in military families: Exploring uncertainty and ambiguous loss. *Family Relations*, *56*(2), 112-122.

Jakupcak, M., Vannoy, S., Imel, Z., Cook, J. W., Fontana, A., Rosenheck, R., & McFall, M. (2010). Does PTSD moderate the relationship between social support and suicide risk in Iraq and Afghanistan War Veterans seeking mental health treatment? *Depression and Anxiety*, *27*(11), 1001-1005. doi:10.1002/da.20722

King, D. W., Taft, C., King, L. A., Hammond, C., & Stone, E. R. (2006). Directionality of the association between social support and posttraumatic stress disorder: A longitudinal investigation. *Journal of Applied Social Psychology*, *36*(12), 2980-2992. doi:10.1111/j.0021-9029.2006.00138.x

Knobloch, L. K., & Theiss, J. A. (2012). Experiences of U.S. military couples during the post-deployment transition: Applying the relational turbulence model. *Journal of Social and Personal Relationships*, *29*(4), 423-450. doi:10.1177/0265407511431186

Kolkow, T. T., Spira, J. L., Morse, J. S., & Grieger, T. A. (2007). Post-traumatic stress disorder and depression in health care providers returning from deployment to Iraq and Afghanistan. *Military Medicine*, *172*(5), 451-455.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606-613.

Kroenke, K., Spitzer, R. L., Williams, J. B., & Lowe, B. (2010). The Patient Health Questionnaire somatic, anxiety, and depressive symptom scales: A systematic review. *General Hospital Psychiatry*, *32*(4), 345-359. doi:10.1016/j.genhosppsych.2010.03.006

Laffaye, C., Cavella, S., Drescher, K., & Rosen, C. (2008). Relationships among PTSD symptoms, social support, and support source in veterans with chronic PTSD. *Journal of Traumatic Stress*, *21*(4), 394-401. doi:10.1002/jts.20348

Lara-Cinisomo, S., Chandra, A., Burns, R. M., Jaycox, L. H., Tanielian, T., Ruder, T., & Han, B. (2012). A mixed-method approach to understanding the experiences of non-deployed military caregivers. *Maternal and Child Health Journal*, *16*(2), 374-384. doi:10.1007/s10995-011-0772-2

Lester, P., Peterson, K., Reeves, J., Knauss, L., Glover, D., Mogil, C., Duan, N., Saltzman, W., Pynoos, R., Wilt, K., & Beardslee, W. (2010). The long war and parental combat deployment: Effects on military children and at-home spouses. *Journal of the American Academy of Child & Adolescent Psychiatry*, *49*(4), 310-320.

Lester, P., Saltzman, W. R., Woodward, K., Glover, D., Leskin, G. A., Bursch, B., Pynoos, R., & Beardslee, W. (2012). Evaluation of a family-centered prevention intervention for military children and families facing wartime deployments. *American Journal of Public Health*, *102* (Suppl. 1), S48-S54. doi:10.2105/AJPH.2010.300088

Mansfield, A. J., Kaufman, J. S., Marshall, S. W., Gaynes, B. N., Morrissey, J. P., & Engel, C. C. (2010). Deployment and the use of mental health services among U.S. Army wives. *New England Journal of Medicine*, *362*(2), 101-109.

McConnell, D., Breitkreuz, R., & Savage, A. (2011). From financial hardship to child difficulties: Main and moderating effects of perceived social support. *Child: Care, Health and Development*, *37*(5), 679-691. doi:10.1111/j.1365-2214.2010.01185.x

McLay, R. N., Deal, W. E., Murphy, J. A., Center, K. B., Kolkow, T. T., & Grieger, T. A. (2008). On-the-record screenings versus anonymous surveys in reporting PTSD. *The American Journal of Psychiatry*, *165*(6), 775-776. doi:10.1176/appi.ajp.2008.07111710

Melvin, K. C., Gross, D., Hayat, M. J., Jennings, B. M., & Campbell, J. C. (2012). Couple functioning and post-traumatic stress symptoms in US Army couples: The role of resilience. *Research in Nursing & Health*, *35*(2), 164-177. doi:10.1002/nur.21459

Milliken, C. S., Auchterlonie, J. L., & Hoge, C. W. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *Journal of the American Medical Association*, *298*(18), 2141-2148.

Murphy, D. A., Marelich, W. D., Armistead, L., Herbeck, D. M., & Payne, D. L. (2010). Anxiety/stress among mothers living with HIV: Effects on parenting skills and child outcomes. *AIDS Care*, *22*(12), 1449-1458.

doi:10.1080/09540121.2010.487085

Nash, W. P., Vasterling, J., Ewing-Cobbs, L., Horn, S., Gaskin, T., Golden, J., ... Baker, D. G. (2010). Consensus recommendations for common data elements for operational stress research and surveillance: Report of a federal interagency working group. *Archives of Physical Medicine & Rehabilitation*, *91*(11), 1673-1683. doi:10.1016/j.apmr.2010.06.035

Nieuwsma, J. A., Jackson, G. L., DeKraai, M. B., Bulling, D. J., Cantrell, W. C., Rhodes, J. E., ... Meador, K. G. (2014). Collaborating across the Departments of Veterans Affairs and Defense to integrate mental health and chaplaincy services. *Journal of General Internal Medicine*, *29* (Suppl. 4), 885-894. doi:10.1007/s11606-014-3032-5

Oswalt, K. L., & Biasini, F. J. (2012). Characteristics of HIV-infected mothers associated with increased risk of poor mother-infant interactions and infant outcomes. *Journal of Pediatric Health Care*, *26*(2), 83-91. doi:10.1016/j.pedhc.2010.06.014

Ouimette, P., Wade, M., Prins, A., & Schohn, M. (2008). Identifying PTSD in primary care: Comparison of the Primary Care-PTSD screen (PC-PTSD) and the General Health Questionnaire-12 (GHQ). *Journal of Anxiety Disorders*, *22*(2), 337-343. doi:10.1016/j.janxdis.2007.02.010

Palmer, C. (2008). A theory of risk and resilience factors in military families. *Military Psychology*, *20*(3), 205-217. doi:10.1080/08995600802118858

Parkes, J., Caravale, B., Marcelli, M., Franco, F., & Colver, A. (2011). Parenting stress and children with cerebral palsy: A European cross-sectional survey. *Developmental Medicine & Child Neurology*, *53*(9), 815-821. doi:10.1111/j.1469-8749.2011.04014.x

Potterton, J., Stewart, A., & Cooper, P. (2007). Parenting stress of caregivers of young children who are HIV Positive. *Psychiatry Investigation*, *10*(4), 210-214.

Prado, G., Feaster, D.J., Schwartz, S.J., Pratt, I.A., Smith, L., & Szapocznik, J. (2004). Religious involvement, coping, social support, and psychological distress in HIV-seropositive African American mothers. *AIDS and Behavior*, *8*(3), 221-235.

Prins, A., Ouimette, P., Kimerling, R., Cameron, R. P., Hugelshofer, D. S., Shaw-Hegwer, J., ... Sheikh, J. I. (2003). The Primary Care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry*, *9*(1), 9-14.

Renshaw, K. D., Allen, E. S., Carter, S. P., Markman, H. J., & Stanley, S. M. (2014). Partners' attributions for service members' symptoms of combat-related posttraumatic stress disorder. *Behavior Therapy*, *45*(2), 187-198.

Renshaw, K. D., Allen, E. S., Rhoades, G. K., Blais, R. K., Markman, H. J., & Stanley, S. M. (2011). Distress in spouses of service members with symptoms of combat-related PTSD: Secondary traumatic stress or general psychological distress? *Journal of Family Psychology*, *25*(4), 461-469.

doi:10.1037/a0023994

Renshaw, K. D., Rodrigues, C. S., & Jones, D. H. (2008). Psychological symptoms and marital satisfaction in spouses of Operation Iraqi Freedom veterans: Relationships with spouses' perceptions of veterans' experiences and symptoms. *Journal of Family Psychology*, *22*(4), 586-594. doi:10.1037/0893-3200.22.3.586

Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. *Social Science & Medicine*, *32*(6), 705-714.

Smith, B., Vaughn, R. A., Vogt, D., King, D. W., King, L. A., & Shipherd, J. C. (2013). Main and interactive effects of social support in predicting mental health symptoms in men and women following military stressor exposure. *Anxiety, Stress, & Coping*, *26*(1), 52-69. doi:10.1080/10615806.2011.634001

Solem, M.-B., Christophersen, K.-A., & Martinussen, M. (2011). Predicting parenting stress: Children's behavioural problems and parents' coping. *Infant and Child Development*, *20*(2), 162-180. doi:10.1002/icd.681

Tsai, J., Harpaz-Rotem, I., Pietrzak, R. H., & Southwick, S. M. (2012). The role of coping, resilience, and social support in mediating the relation between PTSD and social functioning in veterans returning from Iraq and Afghanistan. *Psychiatry*, *75*(2), 135-149.

Underwood, L. G. (2006). Ordinary spiritual experience: Qualitative research, interpretive guidelines, and population distribution for the Daily Spiritual Experience Scale. *Archive for the Psychology of Religion/Archiv für*

Religionspsychologie, *28*(1), 181-218.

Underwood, L. G., & Teresi, J. A. (2002). The Daily Spiritual Experience Scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health-related data. *Annals of Behavioral Medicine*, *24*(1), 22-33.

Underwood, L.G. (2011). The Daily Spiritual Experience Scale: Overview and results. *Religions*, *2*(1), 29-50. doi:10.3390/rel2010029

Vogt, D. S., Proctor, S. P., King, D. W., King, L. A., & Vasterling, J. (2008). Validation of scales from the Deployment Risk and Resilience Inventory in a sample of operation Iraqi Freedom veterans. *Assessment*, *15*(4), 391-403. doi:10.1177/1073191108316030

Vogt, D., Smith, B., Elwy, R., Martin, J., Schultz, M., Drainoni, M.-L., & Eisen, S. (2011). Predeployment, deployment, and postdeployment risk factors for posttraumatic stress symptomatology in female and male OEF/OIF veterans. *Journal of Abnormal Psychology*, *120*(4), 819-831. doi:10.1037/a0024457

Walsh, T. B., Dayton, C. J., Erwin, M. S., Muzik, M., Busuito, A., & Rosenblum, K. L. (2014). Fathering after military deployment: Parenting challenges and goals of fathers of young children. *Health & Social Work*, *39*(1), 35-44. doi:10.1093/hsw/hlu005

Warner, C. H., Appenzeller, G. N., Grieger, T., Belenkiy, S., Breitbach, J., Parker, J., … Hoge, C. (2011). Importance of anonymity to encourage honest

reporting in mental health screening after combat deployment. *Archives of General Psychiatry*, *68*(10), 1065-1071.

Weis, K. L., Lederman, R. P., Lilly, A. E., & Schaffer, J. (2008). The relationship of military imposed marital separations on maternal acceptance of pregnancy. *Research in Nursing & Health*, *31*(3), 196-207.

World Heath Organization (1998). *Review of the constitution of the World Health Organization: Report of the executive board special group.* (EB101.R2). Retrieved from http://apps.who.int/gb/archive/pdf_files/EB101/pdfangl/eb1017.pdf

Chapter VI

Conclusion

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There are several areas of this dissertation research that are unique and innovative. The qualitative metasynthesis in Chapter 2 was the first of its kind to look at the military family as a whole unit of analysis, which uncovered a more complete picture of how deployment is experienced by all members of the military family. The research study in Chapter 4 was the first to look at parenting stress in military fathers, while concurrently evaluating PTSD, depression, and deployment factors. Chapter 5 detailed findings from another part of this research study, in which reliable and valid measures of spirituality and social support were used for the first time in both civilian mothers and active duty fathers who had experienced a recent Navy deployment.

Findings

As the qualitative metasynthesis demonstrated, there is potential for heightened emotional responses for all family members throughout the deployment cycle, and especially in reintegration. These findings highlight the importance of devising ways to enhance familial communication. During the deployment period, communication is severely limited, and it can be difficult for family members to resume previous more frequent and open patterns of communication after reunion. Exploring how best to convey mutual appreciation and gratitude in the reintegration period is an area for future research, and may open avenues to enhance familial intimacy.

The analysis in chapter 4 found significant associations between several deployment factors and parenting stress in Navy fathers who had been home

from deployment between three and twelve months. For these active duty fathers, the more they reported increases in these deployment factors (time away from home related to deployment in the past five years, perceptions of threat level on their most recent deployment, and warfare exposure on their most recent deployment), the more likely they were to report increased parenting stress now at home. Parenting stress can vary over time; as a child grows, the parent is constantly adapting to the changes within their child's body and psyche. According to age-normed values of the PSI, average parenting stress is higher for parents of children under six versus those six to twelve (Abidin, 2012). Past research shows that as parenting stress increases, positive parenting behaviors decrease (Deater-Deckard, 2004; Murphy, Marelich, Armistead, Herbeck, & Payne, 2010; Oxford & Lee, 2011; Taylor, Guterman, Lee, & Rathouz, 2009), which can lead to increased child distress resulting in more child problem behaviors (Barker & Berry, 2009; Cozza et al., 2010; Danseco & Holden, 1998; Fite, Greening, & Stoppelbein, 2008; Flake, Davis, Johnson, & Middleton, 2009; Lester et al., 2010; Palmer, 2008). This information is highly relevant for the assessment, and provision, of appropriate services for military service members and their families.

The analysis in chapter 5 showed that higher spirituality and higher social support scores both significantly predicted lower parenting stress in both Navy fathers and civilian mothers within our sample. To our knowledge, this is the first time that a valid and reliable spirituality instrument has been used to predict

PSI scores. Additionally, while social support did not emerge as a moderator of the relationship between deployment factors and parenting stress in fathers, spirituality was a significant moderator of these relationships. Fathers with high levels of spiritual experience who also experienced high levels of deployment factors (increased time away from home, increased perception of danger, increased warfare exposure) actually had normative levels of parenting stress versus their counterparts with low and medium levels of spirituality, whose PSI scores were in the high clinically significant range.

Implications for Clinical Practice

The findings of the qualitative metasynthesis highlight the importance of being aware of deployment transitions, and give information on how different family members may react during each transition. The deployment separation is a difficult time for all family members, and support from a caring medical professional is a positive intervention; but it may be that reintegration is even more challenging. Nurses can help all members of the military family in this transition time by letting them know that difficulty is to be expected, and by giving them linkages to mental health and family support services. It is important to educate families to be aware of warning signs indicating that professional help is needed, such as symptoms of PTSD, depression, excessive drinking, or intimate partner violence. Family members can feel isolated and confused upon reintegration, so it is imperative to reach out and provide linkages to the community. As Devoe and Ross note in their conceptualization of

parenting in deployment, "Providers can work with families to ... anticipate 'trouble spots' in future phases of the [deployment] cycle, and develop communication strategies both related to parenting and parent-child interaction." (2012, p. 188).

As the quantitative study design described in chapter 4 was cross-sectional, there is no ability to extract causal findings from the results showing an association between deployment factors and parenting stress in Navy fathers. However, the strong associations found in the analyses can be useful in prompting clinicians to ask the service member about their immediate family members, and to explore family dynamics. Being able to identify specific factors which could increase parenting stress (such as increased time away on deployment, perceived threat of most recent deployment, and warfare exposure of most recent deployment) will alert nurses to which families may need additional support and intervention. It may be difficult to find time in a busy clinical schedule to ask service members to answer the full Parenting Stress Index, which takes an average of 20 minutes to complete. However, in the context of a military setting, many more respondents may feel comfortable answering three or four general information questions on time away from home, and the perceived danger and warfare exposure of their most recent deployment. In a health care setting, higher values on these cues can signal to the clinician that a more in-depth assessment of family processes is needed. Depending on the results, outreach efforts to the family may be indicated.

The findings from chapter 5 highlight the importance of both social support and spirituality in military families; as spirituality and social support increased, parenting stress scores decreased. As this was a cross-sectional study, causality cannot be inferred, but the results do confirm and advance other research advocating social support as an appropriate intervention for at-risk families (Cooklin, Giallo, & Rose, 2012; McConnell, Breitkreuz, & Savage, 2011; Solem, Christophersen, & Martinussen, 2011). By virtue of the military experience in which rotations of duty station happen every three to four years, families are most often not near their own families of origin to benefit from the support of grandparents in raising their children, and may not have strong roots in their communities related to frequent relocations (Weber & Weber, 2005). This can result in risk for increased negative mental health outcomes as stressors accumulate without additional resources to handle them. Levels of social support can also affect child outcomes: in a recent study, one important factor in predicting child psychosocial morbidity was the perception of poor social support by the home front parent (Flake et al., 2009). Additionally, families may be less likely to access health care because they do not have a relationship with a particular clinic staff member, or clinic provider, thus increasing the risk for both negative mental *and* physical health outcomes. As resources are strained, families may neglect their spiritual health, and feel disengaged and disconnected.

The results of this study identified spirituality as a moderator of parenting stress - this will allow nurses to focus on this as an area for potential intervention. Assessment of spirituality is often ignored within health care. Part of the reason comes from a hesitancy to approach a sensitive topic that may lead to miscommunication (Tuck, 2012; Vance, 2001). In our highly charged society, there are vocal opinions regarding religion, morality, and the place of worship within our culture. However, spirituality can be an important way for individuals to find support and meaning within difficult circumstances, whether they have strong religious beliefs or not (Hamlin-Glover, 2009; Schneider & Mannell, 2006). As one of the developers of the Stress and Coping Model notes, "The use of spiritual beliefs and experiences at all stages of an enduring stressful condition is an aspect of coping that deserves systematic investigation" (Folkman, 1997, p.1214).

One possible avenue for a spirituality intervention is suggested by Nardi and Rooda's practice theory of spirituality-based nursing (2011). In this model, nurse spiritual actions include therapeutic touch, massage, prayer, meditation, and guided imagery. Another type of spirituality intervention could consist of weekly meditation or guided imagery sessions, followed by focused discussion of spiritual (non-sectarian) themes. In our electronic age, this could be supplemented by a weekly reflective passage, sent via email or text, touching on spiritual themes (e.g. gratefulness, connection, compassion). Advocating for spirituality as a nursing intervention could involve teaching nurses how to

provide spiritual care to their patients, by working to develop a spirituality toolbox that nurses could use at appropriate times. The design of any type of spirituality intervention geared for military families would be enhanced by the participation and input of military and civilian chaplains.

Implications for Research

Prior studies have focused on data collection for individual service members in the Army and the Marine Corps, two services which have traditionally been called to ground-based deployments more often than others, and in higher numbers. There is a unique language, hierarchical structure, and symbolic imagery that forms distinctive cultural environments for members of each of the military service branches. There have been relatively few studies looking at deployments within the Navy population (Kelley, Herzog-Simmer, & Harris, 1994; Kelley et al., 2002; McNulty, 2005). The sample within this study was fairly representative of the Navy as a whole in regards to the ratio of enlisted personnel to officer personnel, and its demographic makeup. The rates of PTSD and depression were higher in this study (17.1%) than in previous studies of service members returning from deployment (range of 2.1 to 9.8%, range of 5.2 to 7.0%, respectively).

It is surprising that a Navy sample, predominately composed of service members returning from ship-based deployments (67.6%) as opposed to ground combat operations, would have these elevated rates of PTSD and depression. As Nash et al. (2010) theorized when they developed the operational stress model,

service members are exposed to high intensity stressors during deployment, but the "relentless accumulation" of lower-intensity stressors over time may be more harmful to service members' resilience (p. 1674). Repeated and lengthier deployments, involving more time away from family and less time to recalibrate with loved ones, may have an adverse effect on the mental health of service members, even in the absence of direct combat operations. McNulty (2005) found high rates of anxiety for Navy sailors deployed at sea, with more than 50% across three time periods of deployment reporting feelings of indecisiveness, confusion, jitteriness, and fear.

Navy policy in the past allowed ships to be deployed for no more than 6 months, with at least twice as much time in homeport before the next deployment (Koopman & Hattiangadi, 2002). The current policy is for personnel to be deployed no more than 220 days in a 365-day year, or to be deployed no more than 400 days in a 730-day span of two years; the Navy goal is for personnel to be at home twice as long as their operational deployment, and home a minimum of the same amount of time that they were deployed (Department of the Navy, 2014). As one officer participant with 16 years in the military commented within his survey, "Deployment stress is not only felt in combat action but [also] in long arduous hours at sea and working and living in confined quarters" (anon, personal communication, May 13, 2014). The at-sea experience of deployment also varies depending on the type of vessel afloat: submarines have less living space than ships that stay above water, and aircraft carriers may

have better access to communication equipment for their crews than the much smaller frigates (U.S. Navy, 2014). Those deployed on ground or afloat share several experiences: very limited private space on deployment, the possibility of knowing a friend who has died or been injured, receiving injured or dying casualties, and fear of attack in dangerous areas/waters. Although the environments of land-based and sea-based deployments are different, the deployment experience is stressful no matter where it occurs.

The high rates of depression and PTSD in this study may indicate something beyond the experience of deployment as an individual service member. Experiencing deployment as a father of young children may be a risk factor for increased depression symptoms and PTSD symptoms thereafter. We are aware of no other studies that examine the parenting stress of fathers, while also taking into account PTSD and depression. Previous studies in military fathers with PTSD symptoms have shown that these men are not satisfied with their parenting role, have lower levels of parent-child connection, and use less effective parenting practices (Allen, Rhoades, Stanley, & Markman, 2010; Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010; Ruscio, Weathers, King, & King, 2002; Samper, Taft, King, & King, 2004; Sayers, Farrow, Ross, & Oslin, 2009).

It is very important to assess for these diagnoses in military active duty members, and in veterans. The prevalence rates of depression and PTSD in this sample of Navy fathers was higher than rates reported previously in surveys of

male active duty members; these findings suggest that it may be even more important to conduct these assessments with fathers, whose mental health can have impact on all the other members of the family. Depression can have a significant negative impact on parenting, especially in younger children, and most studies looking at this link have been done in mothers. According to a meta-analytic review by Lovejoy, Graczyk, O'Hare, and Neuman (2000), "depressed mothers displayed higher levels of hostile and coercive behaviors towards children ... the infants and pre-school aged children of depressed mothers experienced disengagement; and the infants were also less likely to be involved in activities and play with their mothers" (p.585). In a civilian sample, Sturge-Apple, Skibo, Rogosch, Ignjatovic, and Heinzelman (2011) found that increased stress on mothers in combination with maternal depression resulted in high scoring for mothers on hostile, harsh and intrusive parenting behaviors with their 17 to 19 month old children. It has been repeatedly shown that the home front parent's mental health is a very important predictor of child emotional and behavioral outcomes during and after deployment (Chandra, Martin, Hawkins, & Richardson, 2010; Lester et al., 2010; White, de Burgh, Fear, & Iversen, 2011). But the active duty parent can also have a significant effect on the child's functioning upon return from deployment - PTSD in this parent can predict child depression and problem behaviors (Lester et al., 2010).

The association of increasing time away from home, increasing perceptions of threat level on deployment, and increasing levels of warfare

exposure on deployment, to increased parenting stress scores is a new finding in the operational stress literature. There have previously been no direct linkages between valid and reliable measures of deployment experience and PSI scores. This research shows that there is a connection, and opens up further questions. For example, what are the effects of deployment factors on the parenting stress of female active duty mothers? In a review by Street, Vogt, and Dutra (2009), the authors found limited data on women's experiences of warfare, and limited data on reintegration for female service members. Additionally, women may have increased risk for negative mental health outcomes during and after deployment related to concerns regarding sexual inequality and sexual harassment (McNulty, 2005; Street et al., 2009). There is also no data on the parenting stress of single mothers in the military, who may have less social support compared to their married counterparts. Longitudinal data on these concepts would be ideal, in order to evaluate causal linkages, as well as to identify times where specific interventions may be the most effective or the most necessary.

Following on from these results, it would be ideal to conduct a large longitudinal study looking at these variables. In the current study, there were less than ten Navy fathers who met the criteria for high warfare exposure, severely underpowering any associations that might otherwise exist. Also, a larger longitudinal study would be able to elucidate the exact mechanism and role of depression in influencing parenting stress in this population. Clearly

more research needs to be done evaluating depression and PTSD in fathers under stress, as well as exploring modifiable and effective protective factors.

The finding that spirituality is an important mitigator of parenting stress within military families is new. Additionally, spirituality was shown to be a moderator of the relationship between deployment factors and parenting stress in fathers, but social support was not. Perhaps the more private concept of spiritual experience was more salient to the deployment stressors fathers faced, as well as to the unique stressors of parenthood. Spirituality reflects an individual's relational awareness of the transcendent, divine, or holy through feelings and sensations, distinct from religious beliefs (Fetzer Institute, 1999; Underwood, 2011). Within this study, spirituality provided a counterpoint to the variable of social support, which was defined as a perception that others will be there to provide a safety net if needed; there is a connection with other people that is accessible that will sustain the individual. Spirituality refers to a perception that there is a hidden energy in the world that can be felt as a connection with nature or God; there is a connection with the divine that is accessible. The relationships among spirituality, deployment factors, and parenting stress in military families are worthy areas for further research.

Another consideration for future research was the very high percentage of PSI defensive responders in our sample (25.2%) in comparison to normative rates of 5-8% within the general population (Parkes, Caravale, Marcelli, Franco, & Colver, 2011). Perhaps Navy fathers were reluctant to answer without

reservation, and may have preferred an anonymous survey. This has far-reaching implications for research within the military population, as it relates to investigation of sensitive topics. In military samples, rates of PTSD and depression reported anonymously are at least twice as high as the rates reported confidentially (McLay et al., 2008; Warner et al., 2011). It may be that service members do not feel safe reporting concerns unless they can be conveyed anonymously.

Future Directions

Health care providers have an ethical responsibility to support not just the active duty member, but also the family members who will bear the brunt of the day-to-day changes in their loved one. A large-scale study of post-deployment screening programs showed that just over half of those referred for a mental health evaluation actually complete this evaluation (Hoge, Auchterlonie, & Milliken, 2006). And more concerning, those veterans who screened positive for a mental health concern were significantly more likely to leave military service than those with a negative mental health screen (Hoge et al., 2006). If a service member leaves the military, they have much more freedom in whether they access medical care or not; they may or may not take advantage of services offered through the U.S. Department of Veterans Affairs. And if a military member does not ask for help, the service member suffers, but more importantly, so does the family.

Some researchers have discussed the potential stigma that is associated with a military member admitting a psychological problem (Greene-Shortridge, Britt, & Castro, 2007). The 25% rate of defensive responding in this active duty sample shows that service members may be reluctant to even admit parenting stress, much less a mental health diagnosis. If there is stigma attached to admitting a mental health issue in the military, the active duty member will be less likely to seek help. It is therefore vital that military leadership vocally support early intervention for mental health concerns so that service members know there is no stigma in seeking help and no negative consequences for receiving help. It is also extremely important that civilian practitioners are aware of the needs and challenges of military families, as these families may seek care outside the military once the active duty member leaves service.

The health care goal for our military families is to have cohesive, high-functioning families before, during, and after deployment. One goal of future research would be to look at families longitudinally across the different deployment transitions, using multilevel modelling to analyze data across different clusters. What are the effects of dyadic parental relationships across and within groups? Are there differences in social support, spirituality, deployment factors, and parenting stress across one-child vs. multiple child families, across different home environments (e.g. living on or off base), across different neighborhoods, across different school districts? Different interventions may be indicated at different time points and in different groups.

As the study findings point to the importance of social support for military families, it is important to focus on relationships versus on separate individuals alone: military relationships, family relationships, and community relationships. In the context of the family-military relationship, it is important that the military convey a clear message of the value of the family. In one study, an alliance between family support programs and military installation leadership resulted in military families feeling that the military unit supported their needs, and that help-seeking was encouraged (Pittman, Kerpelman, & McFadyen, 2004). If family-community relationships can be fostered, this will provide another avenue to social support for military families.

The results of this study support more research focusing on how best to support families and enhance parenting strengths, specifically looking at longitudinal outcomes through pre-deployment, deployment, transposement, and reintegration across all family members - active duty members, partners, and children. Research investigating the impact of deployment factors on the parenting stress of other family configurations is also needed, such as female military members, and their male civilian partners, same-sex couples, single parents, and parents who are both in the military. Using the tenets of action research, focus interviews in these understudied groups would allow researchers to gain knowledge, while simultaneously providing a supportive environment for families to share knowledge and support amongst each other. As shown in the qualitative metasynthesis, the support of other families in similar

circumstances is useful and highly valued by families going through deployment. The area of spirituality as a support for military families is a nascent area of research, which could prove extremely valuable to high-risk, highly stressed families in the future.

The goal of future research would be to develop innovative behavioral interventions, utilizing aspects of spirituality, social support, and open communication, to promote healthy parenting in military families dealing with the unique stressors of deployment, looking at eventual positive change in child psychosocial symptoms as the desired outcome measure. The period of early childhood is a time of rapid growth, and a time of heightened parenting intensity as young children start to move from total dependence in infancy, to understanding of themselves as separate beings with individual roles within the family (Feigelman, 2011). Increases in parenting stress could lead to poor child outcomes ranging from delays in preschool language (Noel, Peterson, & Jesso, 2008; Oxford & Lee, 2011), up to and including maltreatment (Taylor et al., 2009), as parents become less patient, less nurturing, and may feel more isolated. Several existing programs show promise, such as filial therapy, which has been shown in several research studies to decrease levels of parenting stress (Bratton & Landreth, 1995; Kidron & Landreth, 2010), and the COPE program, which has been shown to reduce stress for parents during hospitalization of their children in the PICU, with the children of these parents exhibiting fewer child behavioral problems than the control group up to 12 months later (Melnyk et al., 2004).

The specific focus on military families within the dissertation research reflects the current American involvement in two protracted and costly wars within the past decade that have necessitated frequent, lengthy deployments (Fellman, 2012; U.S. Army, 2010). But despite the fact that this dissertation is focused on the military, the results may inform work with other high-risk, highly stressed family populations that civilian and military nurses will interact with frequently. The results from this study open the way for nurse researchers to design appropriate and effective interventions with military families that can be implemented and championed by all health care providers. This is significant because nurses interact with many families under stress - in communities, in hospitals, in clinics, in schools, and in homes. This research gives nurses insight into the some of the stresses that affect the military family, and how best to assess and intervene for beneficent outcomes.

References

Abidin, R. R. (2012). *Parenting Stress Index, fourth edition: Professional manual*. Odessa, FL: Psychological Assessment Resources.

Allen, E. S., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2010). Hitting home: Relationships between recent deployment, posttraumatic stress symptoms, and marital functioning for Army couples. *Journal of Family Psychology*, *24*(3), 280-288. doi:10.1037/a0019405

Barker, L. H., & Berry, K. D. (2009). Developmental issues impacting military families with young children during single and multiple deployments. *Military Medicine*, *174*(10), 1033-1040.

Bratton, S., & Landreth, G. (1995). Filial therapy with single parents: Effects on parental acceptance, empathy, and stress. *International Journal of Play Therapy*, *4*(1), 61-80. doi:10.1037/h0089142

Chandra, A., Martin, L. T., Hawkins, S. A., & Richardson, A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. *Journal of Adolescent Health*, *46*(3), 218-223. doi:10.1016/j.jadohealth.2009.10.009

Cooklin, A. R., Giallo, R., & Rose, N. (2012). Parental fatigue and parenting practices during early childhood: An Australian community survey. *Child: Care, Health and Development*, *38*(5), 654-664. doi:10.1111/j.1365-2214.2011.01333.x

Cozza, S. J., Guimond, J. M., McKibben, J. B., Chun, R. S., Arata-Maiers, T. L., Schneider, B., … Ursano, R. J. (2010). Combat-injured service members and their families: The relationship of child distress and spouse-perceived family distress and disruption. *Journal of Traumatic Stress*, *23*(1), 112-115. doi:10.1002/jts.20488

Danseco, E. R., & Holden, E. W. (1998). Are there different types of homeless families? A typology of homeless families based on cluster analysis. *Family Relations*, *47*(2), 159-165. doi:10.2307/585620

Deater-Deckard, K. (2004). *Parenting stress.* New Haven: Yale University Press.

Department of the Navy. (2014). Navy personnel tempo and operating tempo program. Retrieved from http://doni.daps.dla.mil/Directives/3000.13D.pdf

DeVoe, E. R., & Ross, A. (2012). The parenting cycle of deployment. *Military Medicine*, *177*(2), 184-190.

Faber, A. J., Willerton, E., Clymer, S. R., MacDermid, S. M., & Weiss, H. M. (2008). Ambiguous absence, ambiguous presence: A qualitative study of military reserve families in wartime. *Journal of Family Psychology*, *22*(2), 222-230. doi:10.1037/0893-3200.22.2.222

Feigelman, S. (2011). Growth, development, and behavior: Overview and assessment of variability. In R. Kliegman, B. Stanton, J. S. Geme, N. Schor, & R. Behrman (Eds.), *Nelson textbook of pediatrics* (pp. 26-40). Philadelphia: Elsevier Saunders.

Fellman, S. (2012). 8-month deployments become the 'new norm.' *Navy Times*. Retrieved from http://archive.navytimes.com/article/20131202/NEWS/312020005

Fetzer Institute. (1999). *Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National Institute on Aging Working Group*. Retrieved from http://www.gem-beta.org/public/DownloadMeasure.aspx?mid=1155

Fite, P. J., Greening, L., & Stoppelbein, L. (2008). Relation between parenting stress and psychopathic traits among children. *Behavioral Sciences & The Law*, *26*(2), 239-248. doi:10.1002/bsl.803

Flake, E. M., Davis, B. E., Johnson, P. L., & Middleton, L. S. (2009). The psychosocial effects of deployment on military children. *Journal of Developmental & Behavioral Pediatrics*, *30*(4), 271-278.

Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine*, *45*(8), 1207-1221.

Gewirtz, A. H., Polusny, M. A., DeGarmo, D. S., Khaylis, A., & Erbes, C. R. (2010). Posttraumatic stress symptoms among National Guard soldiers deployed to Iraq: Associations with parenting behaviors and couple adjustment. *Journal of Consulting and Clinical Psychology*, *78*(5), 599-610. doi:10.1037/a0020571

Greene-Shortridge, T. M., Britt, T. W., & Castro, C. A. (2007). The stigma of mental health problems in the military. *Military Medicine*, *172*(2), 157-161.

Hamlin-Glover, D. L. (2009). *Spirituality, religion, and resilience among military families* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Order No. 3442121)

Hoge, C. W., Auchterlonie, J. L., & Milliken, C. S. (2006). Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *Journal of the American Medical Association*, *295*(9), 1023-1032.

Kelley, M. L., Hock, E., Jarvis, M. S., Smith, K. M., Gaffney, M. A., & Bonney, J. F. (2002). Psychological adjustment of Navy mothers experiencing deployment. *Military Psychology*, *14*(3), 199-216. doi:10.1207/S15327876MP1403_2

Kelley, M. L., Herzog-Simmer, P. A., & Harris, M. A. (1994). Effects of military-induced separation on the parenting stress and family functioning of deploying mothers. *Military Psychology*, *6*(2), 125-138.

Kidron, M., & Landreth, G. (2010). Intensive child parent relationship therapy with Israeli parents in Israel. *International Journal of Play Therapy*, *19*(2), 64-78. doi:10.1037/a0017516

Koopman, M. E., & Hattiangadi, A. U. (2002). *Do the services need a deployment pay?* (CRM D0004458.A2). Alexandria, VA: CNA Corporation.

Lester, P., Peterson, K., Reeves, J., Knauss, L., Glover, D., Mogil, C., … Beardslee, W. (2010). The long war and parental combat deployment: Effects on

military children and at-home spouses. *Journal of the American Academy of Child & Adolescent Psychiatry*, *49*(4), 310-320.

Lovejoy, M. C., Graczyk, P., A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, *20*(5), 561-592.

McConnell, D., Breitkreuz, R., & Savage, A. (2011). From financial hardship to child difficulties: Main and moderating effects of perceived social support. *Child: Care, Health and Development*, *37*(5), 679-691. doi:10.1111/j.1365-2214.2010.01185.x

McLay, R. N., Deal, W. E., Murphy, J. A., Center, K. B., Kolkow, T. T., & Grieger, T. A. (2008). On-the-record screenings versus anonymous surveys in reporting PTSD. *The American Journal of Psychiatry*, *165*(6), 775-776. doi:10.1176/appi.ajp.2008.07111710

McNulty, P. A. F. (2005). Reported stressors and health care needs of active duty Navy personnel during three phases of deployment in support of the war in Iraq. *Military Medicine*, *170*(6), 530-535.

Melnyk, B. M., Alpert-Gillis, L., Feinstein, N. F., Crean, H. F., Johnson, J., Fairbanks, E., … Corbo-Richert, B. (2004). Creating opportunities for parent empowerment: Program effects on the mental health/coping outcomes of critically ill young children and their mothers. *Pediatrics*, *113*(6), e597-e607.

Murphy, D. A., Marelich, W. D., Armistead, L., Herbeck, D. M., & Payne, D. L. (2010). Anxiety/stress among mothers living with HIV: Effects on parenting skills and child outcomes. *AIDS Care*, *22*(12), 1449-1458. doi:10.1080/09540121.2010.487085

Nardi, D., & Rooda, L. (2011). Spirituality-based nursing practice by nursing students: An exploratory study. *Journal of Professional Nursing*, *27*(4), 255-263. doi:10.1016/j.profnurs.2011.03.006

Nash, W. P., Vasterling, J., Ewing-Cobbs, L., Horn, S., Gaskin, T., Golden, J., … Baker, D. G. (2010). Consensus recommendations for common data elements for operational stress research and surveillance: Report of a federal interagency working group. *Archives of Physical Medicine & Rehabilitation*, *91*(11), 1673-1683. doi:10.1016/j.apmr.2010.06.035

Noel, M., Peterson, C., & Jesso, B. (2008). The relationship of parenting stress and child temperament to language development among economically disadvantaged preschoolers. *Journal of Child Language*, *35*(4), 823-843.

Oxford, M. L., & Lee, J. O. (2011). The effect of family processes on school achievement as moderated by socioeconomic context. *Journal of School Psychology*, *49*(5), 597-612. doi:10.1016/j.jsp.2011.06.001

Palmer, C. (2008). A theory of risk and resilience factors in military families. *Military Psychology*, *20*(3), 205-217. doi:10.1080/08995600802118858

Parkes, J., Caravale, B., Marcelli, M., Franco, F., & Colver, A. (2011). Parenting stress and children with cerebral palsy: A European cross-sectional

survey. *Developmental Medicine & Child Neurology*, *53*(9), 815-821. doi:10.1111/j.1469-8749.2011.04014.x

Pittman, J. F., Kerpelman, J. L., & McFadyen, J. M. (2004). Internal and external adaptation in Army families: Lessons from Operations Desert Shield and Desert Storm. *Family Relations*, *53*(3), 249-260. doi:10.1111/j.0197-6664.2004.0001.x

Ruscio, A. M., Weathers, F. W., King, L. A., & King, D. W. (2002). Male war-zone veterans' perceived relationships with their children: The importance of emotional numbing. *Journal of Traumatic Stress*, *15*(5), 351-357.

Samper, R. E., Taft, C. T., King, D. W., & King, L. A. (2004). Posttraumatic stress disorder symptoms and parenting satisfaction among a national sample of male Vietnam veterans. *Journal of Traumatic Stress*, *17*(4), 311-315.

Sayers, S. L., Farrow, V. A., Ross, J., & Oslin, D. W. (2009). Family problems among recently returned military veterans referred for a mental health evaluation. *Journal of Clinical Psychiatry*, *70*(2), 163-170.

Schneider, M. A., & Mannell, R. C. (2006). Beacon in the storm: An exploration of the spirituality and faith of parents whose children have cancer. *Issues in Comprehensive Pediatric Nursing*, *29*(1), 3-24. doi:10.1080/01460860500523731

Solem, M.-B., Christophersen, K.-A., & Martinussen, M. (2011). Predicting parenting stress: Children's behavioural problems and parents' coping. *Infant and Child Development*, *20*(2), 162-180. doi:10.1002/icd.681

Street, A. E., Vogt, D., & Dutra, L. (2009). A new generation of women veterans: Stressors faced by women deployed to Iraq and Afghanistan. *Clinical Psychology Review*, *29*(8), 685-694. doi:10.1016/j.cpr.2009.08.007

Sturge-Apple, M. L., Skibo, M. A., Rogosch, F. A., Ignjatovic, Z., & Heinzelman, W. (2011). The impact of allostatic load on maternal sympathovagal functioning in stressful child contexts: Implications for problematic parenting. *Development and Psychopathology*, *23*(3), 831-844. doi:10.1017/S0954579411000332

Taylor, C. A., Guterman, N. B., Lee, S. J., & Rathouz, P. J. (2009). Intimate partner violence, maternal stress, nativity, and risk for maternal maltreatment of young children. *American Journal of Public Health*, *99*(1), 175-183. doi:10.2105/ AJPH.2007.126722

Tuck, I. (2012). A critical review of a spirituality intervention. *Western Journal of Nursing Research*, *34*(6), 712-735. doi:10.1177/0193945911433891

U.S. Army. (2010). *Health promotion, risk reduction, suicide prevention*. Retrieved from http://csf.army.mil/downloads/HP-RR-SPReport2010.pdf

Underwood, L. G. (2011). The Daily Spiritual Experience Scale: Overview and results. *Religions*, *2*(1), 29-50. doi:10.3390/rel2010029

U.S. Navy. (2014). U.S. Navy ships. Retrieved from http://www.navy.mil/navydata/our_ships.asp

Vance, D. L. (2001). Nurses' attitudes towards spirituality and patient care. *MEDSURG Nursing*, *10*(5), 264-268.

Warner, C. H., Appenzeller, G. N., Grieger, T., Belenkiy, S., Breitbach, J., Parker, J., … Hoge, C. (2011). Importance of anonymity to encourage honest reporting in mental health screening after combat deployment. *Archives of General Psychiatry*, *68*(10), 1065-1071.

Weber, E. G., & Weber, D. K. (2005). Geographic relocation frequency, resilience, and military adolescent behavior. *Military Medicine*, *170*(7), 638-642.

White, C. J., de Burgh, H. T., Fear, N. T., & Iversen, A. C. (2011). The impact of deployment to Iraq or Afghanistan on military children: A review of the literature. *International Review of Psychiatry*, *23*(2), 210-217. doi:10.3109/09540261.2011.560143

Appendix A: Study Tables and Instruments

Table A1

Methods and Measures by Study Aim

Specific Aims	Methods	Measures
Primary To explore the relationship between deployment factors and parenting stress, controlling for demographic variables and concurrent stressors: a) in recently returned male active duty parents b) in female civilian spouses of the recently returned active duty parents	Design: Correlational Setting: military health clinics, and homes Sample: 65 male active duty members who have been deployed within the past 12 months and are parents of children under six years of age, and their civilian spouses	*Parent Profile Form (dev. by PI) *PSI: Parenting Stress Index (Abidin, 2012) *DRRI-2: Deployment Concerns, Combat Experiences, and Post-Combat Experiences Scales (Vogt, Smith, King, & King, 2012) *MOS-SSS: Social Support Survey (Sherbourne & Stewart, 1991) *PC-PTSD: Primary Care PTSD Screen (Prins et al., 2003) *PHQ-8: Patient Health Questionnaire 9 (Pfizer, 2013) *PSI Life Stress Scale (Abidin, 2012) *DSES: Daily Spiritual Experience Scale (Underwood, 2002)
Secondary To examine whether and to what extent social support and spirituality impact parenting stress: a) in recently returned male active duty parents b) in female civilian spouses of the recently returned active duty parents	Design: same as above Setting: same as above Sample: same as above	*Parent Profile Form (dev. by PI) *PSI: Parenting Stress Index (Abidin, 2012) *MOS-SSS: Social Support Survey (Sherbourne & Stewart, 1991) *PC-PTSD: Primary Care PTSD Screen (Prins et al., 2003) *PHQ-8: Patient Health Questionnaire 9 (Pfizer, 2013) *PSI Life Stress Scale (Abidin, 2012) *DSES: Daily Spiritual Experience Scale (Underwood, 2002)
Tertiary To examine a moderating effect of social support and spirituality on the relationship between deployment factors and parenting stress: a) in recently returned male active duty parents b) in female civilian spouses of the recently returned active duty parents	Design: same as above Setting: same as above Sample: same as above	*Parent Profile Form (dev. by PI) *PSI: Parenting Stress Index (Abidin, 2012) * DRRI-2: Deployment Concerns, Combat Experiences, and Post-Combat Experiences Scales (Vogt, Smith, King, & King, 2012) *MOS-SSS: Social Support Survey (Sherbourne & Stewart, 1991) *PC-PTSD: Primary Care PTSD Screen (Prins et al., 2003) *PHQ-8: Patient Health Questionnaire 9 (Pfizer, 2013) *PSI Life Stress Scale (Abidin, 2012) *DSES: Daily Spiritual Experience Scale (Underwood, 2002)

Table A2

Study Schema of Participants and Measures by Time Points

Instruments by Participant	**Admin Time**	**Baseline (Military Health Clinic)**	**Baseline (Family Home or Other Place of Comfort)**
PI			
Study Screening Form	2 min	X	
Military Father			
Parent Profile Form	5 min.	X	
Parenting Stress Index (PSI)	20 min.	X	
PSI Life Stress Scale	5 min.	X	
DRRI-2: Deployment Concerns	5 min.	X	
DRRI-2: Combat Experiences Scale	5 min.	X	
DRRI-2: Post-Battle Experiences Scale	5 min.	X	
MOS: SSS	5 min.	X	
PC-PTSD	2 min.	X	
PHQ-8	5 min.	X	
Daily Spiritual Experience Scale	5 min.	X	
Civilian Mother			
Parent Profile Form	5 min.		X
Parenting Stress Index (PSI)	20 min.		X
PSI Life Stress Scale	5 min.		X
MOS: SSS	5 min.		X
PC-PTSD	2 min.		X
PHQ-8	5 min.		X
Daily Spiritual Experience Scale	5 min.		X

Total admin time for Military Parent = no more than 62 minutes
Total admin time for Civilian Parent = no more than 47 minutes

Table A3

Operationalization of Study Constructs

Construct	Variables/ Coding	Level of Measurement	Instrument & Source	Method & Admin Time
1. Parent Demographics (13 items)	*Age *Gender 0 = male 1 = female *Ethnicity 0 = Caucasian 1 = African-American 2 = Hispanic 3 = Asian 4 = American Indian 5 = Native Hawaiian *Years of marriage *Number of Children *Ages of Children 1 = 0 - 5 2 = 6 - 12 3 = 13 - 18 4 = 19 and above *Age of Index Child *Child Disability 0 = no 1 = yes *Years of Education *Employment status 0 = not working 1 = work in home 2 = work outside home 3 = Military member *Childcare arrangements 0 = no childcare 1 = 1-5 hrs/week 2 = 6-20 hrs/week 3 = 21-40 hrs/week 4 = > 40hrs/week *Military Rank 1 = E1 2 = E2 3 = E3 4 = E4 5 = E5 6 = E6 7 = E7 8 = E8	Continuous Nominal Nominal Continuous Continuous Ordinal Continuous Nominal Continuous Nominal (code as 0 = not working, 1 = working for all 3 Aims) Ordinal (code as 0 = no child care, 1 = child care for all 3 Aims) Continuous	Parent Profile Form (developed by PI)	Self-report – 5 minutes

Construct	Variables/ Coding	Level of Measurement	Instrument & Source	Method & Admin Time
	9 = E9 10 = W1 11 = W2 12 = W3 13 = W4 14 = W5 15 = O1 16 = O2 17 = O3 18 = O4 19 = O5 20 = O6			
	*Years of military service	Continuous		
2. Deployment factors (48 items)	*Deployments in past 5 years	Continuous	Parent Profile Form (developed by PI)	Self-report – 5 minutes
	*Months away from home in past 5 years r/t deployments	Continuous		
	*Recent deployment location 0 = Afghanistan 1 = Cuba 2 = Iraq 3 = Other 4 = Ship-based	Nominal		
	*Perceived threat of most recent deployment (15 items)	Likert-type responses: uses a continuous total score	* DRRI-2: Deployment Concerns (Vogt, Smith, King, & King, 2012)	Self-report – 5 minutes
	*Warfare exposure of most recent deployment (30 items)	Likert-type responses: uses a continuous total score	* DRRI-2: Combat Experiences Scale, and Post-Battle Experiences Scale (Vogt, Smith, King, & King, 2012)	Self-report - 10 minutes

Construct	Variables/ Coding	Level of Measurement	Instrument & Source	Method & Admin Time
3. Parenting Stress (101 items)	*Child Domain: 6 subscales (total 50 items) - Adaptability - Acceptability - Demandingness - Mood - Distractibility/ Hyperactivity - Reinforces Parent *Parent Domain: 7 subscales (total 51 items) - Depression - Attachment - Restriction of Role - Sense of competence - Social isolation - Relationship w/ Spouse - Parent Health	Likert-type responses: uses a continuous total score	Parenting Stress Index (Abidin, 2012)	Self-report – 20 minutes
4. Other Life Stressors (19 items)	*Stressful life events within the past 12 months (19 items)	Nominal responses: items weighted and summed for continuous total score	PSI Life Stress Scale (Abidin, 2012)	Self-report - 5 minutes
5. Post Traumatic Stress Disorder (4 items)	*Screen for PTSD	Likert-type responses: continuous total score	*PC-PTSD (Prins et al., 2003)	Self-report - 2 minutes
6. Depression (8 items)	*Screen for Depression	Likert-type responses: uses a continuous total score	*PHQ-8 (Pfizer, 2013)	Self-report - 5 minutes

Construct	Variables/ Coding	Level of Measurement	Instrument & Source	Method & Admin Time
7. Social Support (18 items)	*Emotional/ Informational Support (8 items) *Tangible support (4 items) *Affectionate support (3 items) *Positive social interaction (3 items)	Likert-type responses: uses a continuous total score	*MOS: SSS (Sherbourne & Stewart, 1991)	Self-report – 5 minutes
8. Spirituality (16 items)	*Connection with the transcendent in daily life	Likert-type responses: uses a continuous total score	Daily Spiritual Experience Scale (Underwood, 2002)	Self-report – 5 minutes
Total Number of Items for Active Duty Response: 227 **Total Number of Items for Female Civilian Response: 181**				

Table A4

Reliability Measures for Instruments within the Study

Instrument	Cronbach's α coefficient	Test-retest Reliability
PSI: Child Domain	0.78 - 0.88	0.55 - 0.82
PSI: Parenting Domain	0.75 - 0.87	0.69 - 0.91
PSI: Total Score	> 0.96	0.65 - 0.96
DRRI: Deployment Concerns	0.84 - 0.89	
DRRI: Combat Experiences	0.86 - 0.89	
DRRI: Post-Battle Experiences	0.85	
PHQ-8	0.86	0.84
MOS: SSS	0.97	
Daily Spiritual Experience Scale	0.94 - 0.95	0.85

Table A5

Analytic Methods by Study Aims

Specific Aims	**Analytic Methods**
To explore the relationship between deployment factors and parenting stress, controlling for demographic variables and concurrent stressors: a) in recently returned male active duty parents b) in female civilian spouses of the recently returned active duty parents	Bivariate regression of each deployment factor on parenting stress - does any term singly explain parenting stress? Multiple hierarchical regression - do deployment factors account for any variation in parenting stress over and above demographic variables and concurrent stressors?
To examine whether and to what extent social support and spirituality impact parenting stress while controlling for demographic variables and concurrent stressors: a) in recently returned male active duty parents b) in female civilian spouses of the recently returned active duty parents	Multiple hierarchical regression - do spirituality and social support account for any variation in parenting stress over and above demographic variables and concurrent stressors?
To examine the possible moderating effect of social support and spirituality on the relationship between deployment factors and parenting stress: a) in recently returned male active duty parents b) in female civilian spouses of the recently returned active duty parents	Multiple hierarchical regression controlling for demographic variables, deployment factors, and spirituality, then creating an interaction term between spirituality and each deployment factor term, using each parent's parenting stress score as the dependent variable - does spirituality change the relationship between deployment factors and parenting stress? Conduct a similar analysis substituting social support for spirituality.

Table A6

Time Table for Major Tasks of the Study by Months

Tasks	**Months/Years**
Design/Planning Phase:	
1) IRB approval	Month 1 – Month 4
2) Orientation for the research study	Month 4 – Month 5
Empirical Phase:	
1) Participant recruitment	Month 6 – Month 13
2) Data collection	Month 6 – Month 13
Analytic Phase:	
1) Data analysis aim 1	Month 14 – Month 15
2) Data analysis aim 2	Month 16 – Month 17
3) Data analysis aim 3	Month 17 - Month 18
Dissemination Phase:	
1) Writing phase aim 1	Month 19 – Month 20
2) Writing phase aim 2	Month 20 – Month 21
3) Writing phase aim 3	Month 21 – Month 22
4) Preparations of submissions for publication	Month 22 – Month 24

Study ID Number: __ __ __ First Name of Youngest Child: _____ Circle D for Dad or M for Mom

Parent Profile Form

Instructions: Please give some background information on yourself. Depending on the question, either put an X in the best box, or write in an answer. If you do not care to answer a question, leave it blank.

---

1. How many years have you been married to your current partner? ❑❑

The next few questions refer to active duty service members. If this does not describe you, please skip to question 8.

2. What is your current paygrade?

❑ E1	❑ O1	❑ W1
❑ E2	❑ O2	❑ W2
❑ E3	❑ O3	❑ W3
❑ E4	❑ O4	❑ W4
❑ E5	❑ O5	❑ W5
❑ E6	❑ O6	
❑ E7		
❑ E8		
❑ E9		

3. How many years in total have you served in the military? ❑❑
4. How many deployments have you been on in the past 5 years? ❑❑
5. In the past 5 years, how many months have you been away from home related to deployment? ❑❑
6. To which country were you most recently deployed?
   - ❑ Afghanistan
   - ❑ Cuba
   - ❑ Iraq
   - ❑ Other country
   - ❑ Ship-based deployment
7. What is the month and year that you returned from your most recent deployment?
   Month: ❑❑ Year: ❑❑❑❑
8. How many children are you raising within the home? ❑❑
9. What are the age ranges of these children? Please write in the number of children you have within each age category living with you at home.
   - ❑ 0-5 -----> ❑❑
   - ❑ 6-12 -----> ❑❑
   - ❑ 13-18 -----> ❑❑
   - ❑ 19+ -----> ❑❑
10. (A) Do you have just one child under the age of six?
    - ❑ Yes -----> what is the age of this child? ❑❑ (circle Y for years or M for months)
    - ❑ No -----> go to Part (B)

Parent Profile Form, Page 2

Study ID Number: __ __ __ First Name of Youngest Child: _____ Circle D for Dad or M for Mom

(B) Think about your children under the age of six and decide which one are you are most concerned about. What is the age of this child? ❑❑ (circle Y for years or M for months)

11. Has this child been diagnosed with a developmental disability (for example Down's syndrome), or chronic physically disabling condition (for example cerebral palsy)?
    - ❑ Yes -----> please indicate the diagnosis your child has been given _____
    - ❑ No

12. Are you the biologic parent of this child?
    - ❑ Yes
    - ❑ No -----> ❑ Adoptive parent
      -----> ❑ Stepparent

13. Which one category best describes your employment status?
    - ❑ Not currently employed
    - ❑ Active duty military
    - ❑ Working outside home
    - ❑ Working at home for pay

14. Which one category best describes your current childcare (including babysitting) arrangements?
    - ❑ No regular weekly babysitting or childcare
    - ❑ 1-5 hours of childcare per week
    - ❑ 6-20 hours of childcare per week
    - ❑ 21-40 hours of childcare per week
    - ❑ more than 40 hours of childcare per week

15. How many years of schooling have you completed (starting from 1st grade)? ❑❑

16. How would you describe your ethnic/racial background? Please mark all that apply.
    - ❑ Native Hawaiian or other Pacific islander
    - ❑ American Indian/Alaska Native
    - ❑ Asian
    - ❑ African-American
    - ❑ Caucasian
    - ❑ Other

17. Do you consider yourself Hispanic or Latino(a)?
    - ❑ Yes
    - ❑ No

18. How old are you now? ❑❑

19. What is your gender?
    - ❑ Male
    - ❑ Female

Thank you!

Parenting Stress Index (2012): Sample Items

1. My child is much more active than I expected.
2. I feel trapped by my responsibilities as a parent.
3. Since having a child, my spouse/parenting partner and I don't do as many things together.

PSI - Life Stress Scale (2012): Sample Items

During the last 12 months, have any of the following events occurred in your immediate family?

1. Moved to new location
2. Alcohol or drug problem
3. Trouble with superiors at work

DRRI-2: Deployment Concerns Scale (2012)

DRRI-2

SECTION G: DEPLOYMENT CONCERNS

The statements below are about the amount of danger you felt you were exposed to during your most recent deployment. As used in these statements, the term "unit" refers to those you lived and worked with on a daily basis during deployment. Please mark how much you agree or disagree with each statement.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1. I was concerned about getting an infectious disease.	**1**	**2**	**3**	**4**	**5**
2. I was concerned that my health might suffer due to exposure to nuclear, biological, or chemical (NBC) agents.	**1**	**2**	**3**	**4**	**5**
3. I felt I was in great danger of being wounded (for example, losing a limb).	**1**	**2**	**3**	**4**	**5**
4. I was concerned that the medicine I was given to protect me from illness would make me sick.	**1**	**2**	**3**	**4**	**5**
5. I was concerned that I would encounter an explosive device (for example, a roadside bomb, mine, or booby trap).	**1**	**2**	**3**	**4**	**5**
6. I feared that I would become sick from pesticides (for example, bug spray) or other routinely used chemicals.	**1**	**2**	**3**	**4**	**5**
7. I was concerned that a rocket or mortar would hit our living quarters.	**1**	**2**	**3**	**4**	**5**
8. I was concerned that I might be exposed to depleted uranium in munitions.	**1**	**2**	**3**	**4**	**5**
9. I thought I would never survive.	**1**	**2**	**3**	**4**	**5**
10. I was concerned that I might be taken hostage.	**1**	**2**	**3**	**4**	**5**
11. I was concerned that the locals who were supposed to be helping us were actually working against us.	**1**	**2**	**3**	**4**	**5**
12. I was concerned about being trapped in the crossfire of rival factions.	**1**	**2**	**3**	**4**	**5**

DRRI-2: Combat Experiences Scale (2012)

DRRI-2

SECTION D: COMBAT EXPERIENCES

The statements below are about your combat experiences during your most recent deployment. As used in these statements, the term "unit" refers to those you lived and worked with on a daily basis during deployment. Please mark how often you experienced each circumstance.

While deployed…	**Never**	**Once or twice**	**Several times over entire deployment**	**A few times each month**	**A few times each week**	**Daily or almost daily**
1. …I went on combat patrols or missions.	**1**	**2**	**3**	**4**	**5**	**6**
2. …I took part in an assault on entrenched or fortified positions that involved naval and/or land forces.	**1**	**2**	**3**	**4**	**5**	**6**
3. …I personally witnessed someone from my unit or an ally unit being seriously wounded or killed.	**1**	**2**	**3**	**4**	**5**	**6**
4. …I encountered land or water mines, booby traps, or roadside bombs (for example, IEDs).	**1**	**2**	**3**	**4**	**5**	**6**
5. …I was exposed to hostile incoming fire.	**1**	**2**	**3**	**4**	**5**	**6**
6. …I was exposed to "friendly" incoming fire.	**1**	**2**	**3**	**4**	**5**	**6**
7. …I was in a vehicle (for example, a "humvee", helicopter, or boat) or part of a convoy that was attacked.	**1**	**2**	**3**	**4**	**5**	**6**
8. …I was part of a land or naval artillery unit that fired on enemy combatants.	**1**	**2**	**3**	**4**	**5**	**6**
9. …I personally witnessed enemy combatants being seriously wounded or killed.	**1**	**2**	**3**	**4**	**5**	**6**
10. …I personally witnessed civilians (for example, women and children) being seriously wounded or killed.	**1**	**2**	**3**	**4**	**5**	**6**
11. …I was injured in a combat-related incident.	**1**	**2**	**3**	**4**	**5**	**6**
12. …I fired my weapon at enemy combatants.	**1**	**2**	**3**	**4**	**5**	**6**
13. …I think I wounded or killed someone during combat operations.	**1**	**2**	**3**	**4**	**5**	**6**
14. …I was involved in locating or disarming explosive devices.	**1**	**2**	**3**	**4**	**5**	**6**
15. …I was involved in searching or clearing homes, buildings, or other locations.	**1**	**2**	**3**	**4**	**5**	**6**
16. …I participated in hand-to-hand combat.	**1**	**2**	**3**	**4**	**5**	**6**
17. …I was involved in searching and/or disarming potential enemy combatants.	**1**	**2**	**3**	**4**	**5**	**6**

DRRI-2: Post-Battle Experiences Scale (2012)

DRRI-2

SECTION E: POSTBATTLE EXPERIENCES

Next are statements about your exposure to the consequences of warfare during your most recent deployment. Please mark how often you experienced each circumstance.

	Never	Once or twice	Several times over entire deployment	A few times each month	A few times each week	Daily or almost daily
1. I saw people begging for food.	**1**	**2**	**3**	**4**	**5**	**6**
2. I saw refugees who had lost their homes or belongings.	**1**	**2**	**3**	**4**	**5**	**6**
3. I observed homes or communities that had been destroyed.	**1**	**2**	**3**	**4**	**5**	**6**
4. I took care of injured or dying people.	**1**	**2**	**3**	**4**	**5**	**6**
5. I saw civilians after they had been severely wounded or disfigured.	**1**	**2**	**3**	**4**	**5**	**6**
6. I saw enemy combatants after they had been severely wounded or disfigured.	**1**	**2**	**3**	**4**	**5**	**6**
7. I saw Americans or allies after they had been severely wounded or disfigured.	**1**	**2**	**3**	**4**	**5**	**6**
8. I saw the bodies of dead enemy combatants.	**1**	**2**	**3**	**4**	**5**	**6**
9. I saw the bodies of dead Americans or allies.	**1**	**2**	**3**	**4**	**5**	**6**
10. I saw the bodies of dead civilians.	**1**	**2**	**3**	**4**	**5**	**6**
11. I interacted with detainees or prisoners of war.	**1**	**2**	**3**	**4**	**5**	**6**
12. I was exposed to the sight, sound, or smell of dead or dying animals.	**1**	**2**	**3**	**4**	**5**	**6**
13. I was involved in handling human remains.	**1**	**2**	**3**	**4**	**5**	**6**

MOS: Social Support Survey (1991)

People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it? Circle one number on each line.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone you can count on to listen to you when you need to talk	1	2	3	4	5
Someone to give you information to help you understand a situation	1	2	3	4	5
Someone to give you good advice about a crisis	1	2	3	4	5
Someone to confide in or talk to about yourself or your problems	1	2	3	4	5
Someone whose advice you really want	1	2	3	4	5
Someone to share your most private worries and fears with	1	2	3	4	5
Someone to turn to for suggestions about how to deal with a personal problem	1	2	3	4	5
Someone who understands your problems	1	2	3	4	5
Someone to help you if you were confined to bed	1	2	3	4	5
Someone to take you to the doctor if you needed it	1	2	3	4	5
Someone to prepare your meals if you were unable to do it yourself	1	2	3	4	5
Someone to help with daily chores if you were sick	1	2	3	4	5
Someone who shows you love and affection	1	2	3	4	5
Someone to love and make you feel wanted	1	2	3	4	5
Someone who hugs you	1	2	3	4	5
Someone to have a good time with	1	2	3	4	5
Someone to get together with for relaxation	1	2	3	4	5
Someone to do something enjoyable with	1	2	3	4	5
Someone to do things with to help you get your mind off things	1	2	3	4	5

Primary Care PTSD Screen (2003)

Description

The PC-PTSD is a 4-item screen that was designed for use in primary care and other medical settings and is currently used to screen for PTSD in veterans at the VA. The screen includes an introductory sentence to cue respondents to traumatic events. The authors suggest that in most circumstances the results of the PC-PTSD should be considered "positive" if a patient answers "yes" to any 3 items. Those screening positive should then be assessed with a structured interview for PTSD. The screen does not include a list of potentially traumatic events.

Scale

Instructions:

In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the past month, you:

1. Have had nightmares about it or thought about it when you did not want to?

   YES / NO

2. Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?

   YES / NO

3. Were constantly on guard, watchful, or easily startled?

   YES / NO

4. Felt numb or detached from others, activities, or your surroundings?

   YES / NO

Current research suggests that the results of the PC-PTSD should be considered "positive" if a patient answers "yes" to any three items.

Prins, Ouimette, & Kimerling, 2003

Patient Health Questionnaire-8 (2013)

Patient Health Questionnaire – 8 (PHQ-8)

Over the last two weeks, how often have you been bothered by any of the following problems? (*Use "✔" to indicate your answer*)	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	☐	☐	☐	☐
2. Feeling down, depressed, or hopeless	☐	☐	☐	☐
3. Trouble falling or staying asleep, or sleeping too much	☐	☐	☐	☐
4. Feeling tired or having little energy	☐	☐	☐	☐
5. Poor appetite or overeating	☐	☐	☐	☐
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	☐	☐	☐	☐
7. Trouble concentrating on things, such as reading the newspaper or watching television	☐	☐	☐	☐
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	☐	☐	☐	☐

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

Daily Spiritual Experience Scale (2002)

The list that follows includes items you may or may not experience. Please consider how often you directly have this experience, and try to disregard whether you feel you should or should not have these experiences.

A number of items use the word 'God.' If this word is not a comfortable one for you, please substitute another word that calls to mind the divine or holy for you.

	Many times a day	Every day	Most days	Some days	Once in a while	Never
I feel God's presence.						
I experience a connection to all of life.						
During worship, or at other times when connecting with God, I feel joy which lifts me out of my daily concerns.						
I find strength in my religion or spirituality.						
I find comfort in my religion or spirituality.						
I feel deep inner peace or harmony.						
I ask for God's help in the midst of daily activities.						
I feel guided by God in the midst of daily activities.						
I feel God's love for me, directly.						
I feel God's love for me, through others.						
I am spiritually touched by the beauty of creation.						
I feel thankful for my blessings.						
I feel a selfless caring for others.						
I accept others even when they do things I think are wrong.						
I desire to be closer to God or in union with the divine.						

	Not at all	Somewhat close	Very close	As close as possible
In general, how close do you feel to God?				

 Underwood, LG. 2006. Ordinary Spiritual Experience: Qualitative Research, Interpretive Guidelines, and Population Distribution for the Daily Spiritual Experience Scale. *Archive for the Psychology of Religion/ Archiv für Religionspsychologie*, 28:1 181-218.

Appendix B: Recruitment and Enrollment Materials

Study Recruitment Poster

Are you a Father?

You Can Help Us Understand Parenting Stress If You:

- Are raising at least one child under 6 years of age
- Are Active Duty Navy
- Have returned from deployment in the past 12 months
- Are married to a female civilian spouse

We want to help other Navy families by understanding how deployment, spirituality, and support from others, may affect the stress of parenting

Please text or page ***-***-**** if you are interested in participating.

Study Brochure for Fathers

The SPRING Study

(757) 75 4 - KIDS

Are you the father of a child under the age of 6?
And have you returned from deployment within the past 12 months?

There is a research study currently underway at Sewell's Point Medical Clinic
that is looking at how deployment, spirituality, and support from others, may affect the stress of parenting.

You could be part of this research study!

You would be asked to complete a one-time questionnaire that takes, on average, 30 minutes to finish.

Your family may also qualify for a $25 gift card.

Are you interested?

Would you like more information?

TEXT or CALL: 757-754-5437

The SPRING Study coordinator will respond promptly to determine if you are eligible, answer your questions, and provide more information on the study.

Study Wallet Cards

- ✓ **Are you the father of a child under six?**
- ✓ **Returned from deployment w/in last 12 mos?**

You could be part of a research study, and your family may qualify for a $25 gift card.

Interested? **TEXT** or **CALL**: **757-754-5437** ~~while waiting for your appointment~~.
The SPRING Study investigator will respond ~~right away~~ promptly to determine if you are eligible ~~for the study~~.

- ✓ **Are you the father of a child under six?**
- ✓ **Returned from deployment w/in last 12 mos?**

You could be part of a research study, and your family may qualify for a $25 gift card.

Interested? **TEXT** or **CALL**: **757-754-5437**.
The SPRING Study investigator will respond promptly to determine if you are eligible.

- ✓ **Are you the father of a child under six?**
- ✓ **Returned from deployment w/in last 12 mos?**

You could be part of a research study, and your family may qualify for a $25 gift card.

Interested? **TEXT** or **CALL**: **757-754-5437**.
The SPRING Study investigator will respond promptly to determine if you are eligible.

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- ✓ **Are you the father of a child under six?**
- ✓ **Returned from deployment w/in last 12 mos?**

You could be part of a research study, and your family may qualify for a $25 gift card.

Interested? **TEXT** or **CALL**: **757-754-5437**.
The SPRING Study investigator will respond promptly to determine if you are eligible.

Email Notification for Ships

Are you the father of a child under the age of 6? And have you returned from deployment within the past 12 months? There is a research study currently underway at Sewell's Point Medical Clinic that is looking at how deployment, spirituality, and support from others, may affect the stress of parenting.

You could be part of this research study! You would be asked to complete a one-time questionnaire that takes, on average, 30 minutes to finish. Your family may also qualify for a $25 gift card.

Are you interested? Would you like more information?
TEXT or CALL **757-754-5437**.
The SPRING Study coordinator will respond promptly to determine if you are eligible, answer your questions, and provide more information on the study.

Study Screening Instrument

Date:

Study Screening Instrument

1. Is current military member *male*?
   - ❑ Yes (go to question 2)
   - ❑ **No ----> STOP (read bold script below)**

2. Are you in the active component of the *United States Navy*?
   - ❑ Yes (go to question 3)
   - ❑ **No ----> STOP (read bold script below)**

3. Did you return from deployment *more than three months and less than one year* ago?
   - ❑ Yes (go to question 4)
   - ❑ **No ----> STOP (read bold script below)**

4. Are you currently in the *Wounded Warrior* program, or are you undergoing a *Medical or Physical Evaluation Board*?
   - ❑ **Yes ----> STOP (read bold script below)**
   - ❑ No (go to question 5)

5. Are you *married* and *living with your spouse*?
   - ❑ Yes (go to question 6)
   - ❑ **No ----> STOP (read bold script below)**

6. Is your *spouse in the military* as well?
   - ❑ **Yes ----> STOP (read bold script below)**
   - ❑ No (continue to question 7)

7. Are you raising young *children at home under the age of six*?
   - ❑ Yes (continue to question 8)
   - ❑ **No ----> STOP (read bold script below)**

8. Have you experienced thoughts within the past two weeks, or are you *experiencing thoughts* today, that you would be better off dead, or *of hurting yourself* in some way?
   - ❑ **Yes ----> STOP (see a health care provider today)**
   - ❑ No (read underlined script below)

Thank you for responding - the study is looking at families with different characteristics than yours. If you have questions or concerns, the study investigator would be happy to talk with you further.

Thank for answering these questions - the study investigator would be happy to talk with you about the study in more detail.

Survey Information Sheet for Fathers

PARTICIPANT STUDY INTRODUCTION INFORMATION SHEET

My name is Abbie Marter, and I am a nursing student at the University of Virginia. I am doing a research study to find out if recently returned Navy fathers and their female civilian partners experience higher than normal parenting stress within a year after deployment. The study will also try to find out if the amount of support that you feel you get from others, and your feelings of connection with the divine (e.g. God, a higher power), makes a difference in your parenting stress. This research study will help me to complete the qualifications for a PhD in nursing from the University of Virginia.

Your choice to take part in this study is voluntary. You are being asked to take part in this study because 1) you are the father of a child under the age of six, and 2) you have returned from deployment within the past year. There are two sets of questions that I would like you to complete. The first set asks about your level of parenting stress for the child you are most concerned about under the age of six. The other set will ask questions about your recent deployment, your current mental stressors, your feelings of having others to support you, and your feelings of connection with the divine. Answering the questions should take approximately 35 to 45 minutes of your time, and no more than an hour.

When you are finished, I will ask you if I can contact your spouse to ask if she would like to also be part of the study. If both you and your spouse complete the surveys, she will receive a $25 gift card as compensation for both of you participating in this study. There is likely to be no other direct benefit to you from participating in this study. However, what you share with me may benefit other military families adjusting to returning from deployment in the future. A maximum of 193 couples will take part in this study. If you would like for me to send you an outline of the general results from the study, I will give you an envelope to fill out with your address, which will be kept in a locked file. Once all study questionnaires have been analyzed, I will send this information to you.

The risks related to being involved in this study are felt to be no greater than the risks in "normal" day-to-day life. If you become upset when you answer questions about parenting your child, or your recent deployment, you may also become upset when you answer the study questions. If you do become upset, either let me know and we can talk to a healthcare provider today, or you can call one of the numbers on the mental health contact card to talk about your concerns today or at a later date.

The information that you give in the study will be handled confidentially. Your information will be assigned a code number. The list connecting your phone number to this code will be kept on a password-protected computerized logbook. When the study is completed and all data have been analyzed, this list will be destroyed. Your phone number will not be used in any report. Within 72 hours after you complete the questionnaires, I will review them. If your parenting stress scores are very high, and/or if you screen positive for post traumatic stress disorder or depression, I will contact you by telephone to give you this information, and offer you information on referral services which may be beneficial to you. This information will be kept confidential, and I will not share it with anyone else. You may decide to self-refer for appropriate services, in which case I would continue to keep your information confidential. If you would prefer that I initiate a referral for you, you would need to give me permission to share your confidential information as part of a referral.

If you suffer any injury as a result of your participation in this study, medical treatment is available at Naval Medical Center Portsmouth. If you have any questions regarding your rights as a research subject at Naval Medical Center Portsmouth, you can contact the Chair, Institutional Review Board or the Head, Clinical Investigation Department at (757) 953-5939.

Your choice to take part in this study is voluntary. Your choice not to take part will involve no loss of care to which you are entitled under law. If you choose to participate, you are free to ask questions or withdraw at any time without any negative effects to your future care. If you decide not to take part, do not answer the questions. If you do decide to take part, continue to the next screen and begin the survey. I would like you to answer all of the questions. If at any time you are uncomfortable with a question, you can decide not to answer it. You have not been asked to sign a consent form in order to protect your identity. By choosing to complete the questions, you are indicating your consent to take part in this study.

Study Postcard for Mothers

ARE YOU A PARENT?

We need you.

We want to help other Navy families by understanding how deployment, spirituality, and support from others, may affect the stress of parenting

We are asking for parents to answer questions on these topics. It will take no more than 50 minutes of your time. In return, you will receive a $25 gift certificate~~, and a children's book~~.

Please call or text
(757) 75 4-KIDS
(757) 754-5437
if you are interested in participating in the SPRING Study

ARE YOU A PARENT?

We need you.

We want to help other Navy families by understanding how deployment, spirituality, and support from others, may affect the stress of parenting

We are asking for parents to answer questions on these topics. It will take no more than 50 minutes of your time. In return, you will receive a $25 gift certificate.

Please call or text
(757) 75 4-KIDS
(757) 754-5437
if you are interested in participating in the SPRING Study

Survey Information Sheet for Mothers

PARTICIPANT STUDY INTRODUCTION INFORMATION SHEET

My name is Abbie Marter, and I am a nursing student at the University of Virginia. I am doing a research study to find out if recently returned Navy fathers and their female civilian partners experience higher than normal parenting stress within a year after deployment. The study will also try to find out if the amount of support that you feel you get from others, and your feelings of connection with the divine (e.g. God, a higher power), makes a difference in your parenting stress. This research study will help me to complete the qualifications for a PhD in nursing from the University of Virginia.

Your choice to take part in this study is voluntary. You are being asked to take part in this study because 1) you are the mother of a child under the age of six, and 2) your partner has returned from deployment within the past year. There are two sets of questions that I would like you to complete. The first set asks about your level of parenting stress for the child you are most concerned about under the age of six. The other set will ask questions about your current mental stressors, your feelings of having others to support you, and your feelings of connection with the divine. Answering the questions should take approximately 25 to 35 minutes of your time, and no more than 50 minutes.

If you complete the surveys, you will receive a $25 gift card as compensation for your participation in this study. There is likely to be no other direct benefit to you from participating in this study. However, what you share with me may benefit other military families adjusting to returning from deployment in the future. A maximum of 193 couples will take part in this study. If you would like for me to send you an outline of the general results from the study, I will give you an envelope to fill out with your address, which will be kept in a locked file. Once all study questionnaires have been analyzed, I will send this to you.

The risks related to being involved in this study are felt to be no greater than the risks in "normal" day-to-day life. If you become upset when you answer questions about parenting your child, you may also become upset when you answer the study questions. If you do become upset, let me know, and we can either call one of the numbers on the Mental Health contacts card, or you can call your healthcare provider to schedule a time to talk about your concerns.

The information that you give in the study will be handled confidentially. Your information will be assigned a code number. The list connecting your phone number to this code will be kept on a password-protected computerized logbook. When the study is completed and all data have been analyzed, this list will be destroyed. Your phone number will not be used in any report. Within 72 hours after you complete the questionnaires, I will review them. If your parenting stress scores are very high, and/or if you screen positive for post traumatic stress disorder or depression, I will contact you by telephone to give you this information, and offer you information on referral services which may be beneficial to you. This information will be kept confidential, and I will not share it with anyone else. You may decide to self-refer for appropriate services, in which case I would continue to keep your information confidential. If you would prefer that I initiate a referral for you, you would need to give me permission to share your confidential information as part of a referral.

If you suffer any injury as a result of your participation in this study, medical treatment is available at Naval Medical Center Portsmouth. If you have any questions regarding your rights as a research subject at Naval Medical Center Portsmouth, you can contact the Chair, Institutional Review Board or the Head, Clinical Investigation Department at (757) 953-5939.

Your choice to take part in this study is voluntary. Your choice not to take part will involve no loss of care to which you are entitled under law. If you choose to participate, you are free to ask questions or withdraw at any time without any negative effects to your future care. If you decide not to take part, do not answer the questions. If you do decide to take part, continue to the next screen and begin the survey. I would like you to answer all of the questions. If at any time you are uncomfortable with a question, you can decide not to answer it. You have not been asked to sign a consent form in order to protect your identity. By choosing to complete the questions, you are indicating your consent to take part in this study.

Permission to Call Spouse Script

"Since your wife is not available now for me to speak with her, is it alright if I call your home later?"

"I will tell her that I met with you at Sewells Point Medical Clinic today, and you enrolled in my research study and completed some questionnaires related to parenting stress, spirituality and social support**.** Would it be alright with you if I shared just that information with her?"

"I will only leave one voicemail message, and will try to call several times after that. If I don't reach her, I will stop trying to call."

"I understand if you don't want to share this contact information with me. Thank you for your help today - I really appreciate your time."

"Thank you so much! I really appreciate your participation, and the opportunity to call your wife and talk to her about the study as well."

Phone Message Script

"Hello. My name is Abbie Marter, and I am doing research on Navy families. Your husband just recently completed some questionnaires related to parenting stress, spirituality and social support.

I was hoping that you would also be willing to answer questions on the same topics.

You are absolutely under no obligation to participate in this study just because your husband did.

Please call me at (xxx) xxx-xxxx and let me know if you might want to participate.

Thank you, and have a great day!"

Phone Contact Script

"Hello. My name is Abbie Marter, and I am doing research on Navy families. Your husband just recently completed some questionnaires related to parenting stress, spirituality and social support. Has he been able to talk to you about his experience with the research study?"

"Just to be clear, you are absolutely under no obligation to participate in this study. I am hoping that you will also be willing to answer questions on the same topics - parenting stress, spirituality, and social support?"

"If you would be willing, we can find a time to meet in person, and I can go over the details of the study, and what you would be doing. I would give you the handheld computer tablet and you would read the information, and if you agreed to be in the study, you would then start to answer the questions. It would take about 25 to 35 minutes of your time (but no more than 50 minutes). After you complete the questions, I will give you a $25 gift card. Is there a good time for us to meet this week or next week?"

"If we cannot meet in person, I could send you an email link to complete the survey? Or if you don't have convenient Internet access, I could ask you the questions over the phone?"

"Great - I look forward to meeting you!"

"Oh - I'm sorry to hear that you will not be part of the study. But I really appreciate your time, and thank you so much for talking to me! Have a great day!"

Mental Health Contact Cards

Mental Health Contacts

Military One Source: (800) 342-9647
Fleet and Family: (757) 444-2102
Duty Chaplain: (757) 438-3822
SPMC Psychiatry Clinic: (757) 953-8751/8821
NMCP Psychiatry Clinic: (757) 953-5269/5248
NMCP Emergency Room: (757) 953-1365
Suicide Prevention Line: (800) 273-8255 (TALK)

TRICARE: 1-866-645-4584 (1-866-MIL-HLTH)
Call this number for a mental health appointment within the Hampton Roads region. All enrollees receive 8 counselling sessions without needing a referral from primary care.

Mental Health Contacts

Military One Source: (800) 342-9647
Fleet and Family: (757) 444-2102
Duty Chaplain: (757) 438-3822
SPMC Psychiatry Clinic: (757) 953-8751/8821
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