

Self-Reported Stressors of National Guard Women Veterans Before and After Deployment: The Relevance of Interpersonal Relationships

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BACKGROUND: With their rapidly expanding roles in the military, women service members experience significant stressors throughout their deployment experience. However, there are few studies that examine changes in women Veterans' stressors before and after deployment.

OBJECTIVE: This study examines the types of stressors women Veterans report before deployment, immediately after deployment, 3 months after deployment, and 1 year post-deployment.

DESIGN: Descriptive data on reported stressors was collected at four time points of a longitudinal study (HEROES Project). Open-ended responses from the Coping Response Inventory (CRI) were coded into six possible major stressor categories for analysis.

PARTICIPANTS: Seventy-nine Army National Guard and Reserve female personnel deploying to Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF) were surveyed prior to deployment. Of these participants, 35 women completed Phase 2, 41 completed Phase 3, and 48 completed Phase 4 of the study.

KEY RESULTS: We identified six major stressor categories: (1) interpersonal (i.e., issues with family and/or friends), (2) deployment-related and military-related, (3) health concerns, (4) death of a loved one, (5) daily needs (i.e., financial/housing/transportation concerns), and (6) employment or school-related concerns. At all time points, interpersonal issues were one of the most common type of stressor for this sample. Daily needs concerns increased from 3 months post-deployment to 1 year post-deployment.

CONCLUSIONS: Interpersonal concerns are commonly reported by women Veterans both before and after their combat experience, suggesting that this is a time during which interpersonal support is especially critical. We discuss implications, which include the need for a more coordinated approach to women Veterans' health care (e.g., greater community-based outreach), and the need for more and more accessible Veterans Affairs (VA) services to address the needs of female Veterans.

KEY WORDS: women's health; veterans; survey research; quality of life.
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The roles of military women have changed rapidly in the last decade. Women who served in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) worked in a diverse range of settings. They are increasingly exposed to combat as the front lines of war become less definable by virtue of new enemy combat tactics.¹ Women military personnel are also taking on new military roles, such as military police, that increase the likelihood of more stressful deployment exposures.² Indeed, compared to previous wars, OEF/OIF women Veterans are exposed to more combat through their service in diverse support positions.³

Women military personnel may also experience unique stressors during reintegration. Reintegration is the process by which Veterans readjust to civilian life, and broadly encompasses areas such as vocational (e.g., finding a job), interpersonal (e.g., changing from a hierarchical military structure to a less well-defined social structure), and life role readjustment (e.g., readjusting to a parental role). Generally, OEF/OIF Veterans report difficulties in interpersonal relationships during the post-deployment readjustment period, such as difficulty getting along with family and friends.⁶ Beder et al.'s study⁷ of male and female OEF/OIF service members found that women Veterans were more likely to report negative reintegration experiences than men. Reintegration may also be complicated for women Veterans, due to having multiple life roles including being a service member. For instance, about 38 % of women active duty military personnel have children and about 42 % are married.⁸ While these rates are similar to those for male military personnel, female Veterans who are mothers are

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almost three times more likely than male Veterans to be single parents.⁶

So far, most studies on OEF/OIF reintegration have been conducted using predominantly male Veteran samples; only a handful of studies have a substantial representation of women, and even fewer examine women military personnel or women Veterans explicitly.^{10–12} Most studies have focused on women Veterans' deployment related experiences, such as Post Traumatic Stress Disorder (PTSD). However, the literature on women Veterans' transition from deployment to military life is relatively limited, as documented by a 2011 review of women Veterans' health research.⁴ In addition, many studies on women Veterans were conducted on those seeking treatment at the Veterans Health Administration. Much less is known about the deployment stressors experienced by women Veterans across the period from pre-deployment to post-deployment outside of a healthcare setting, and there are few qualitative descriptions of these stressors in women Veterans' own words.

In one of the few studies to examine more broadly the stressors faced by women Veterans of OEF and OIF, Mattocks et al.¹⁰ conducted semi-structured interviews with nineteen OEF/OIF women Veterans. This in-depth qualitative study revealed a variety of deployment and post-deployment stressors, such as military sexual trauma, disrupted relationships with family and friends, and difficulties "leaving the war behind." It also showed that while some women were able to positively cope with military and reintegration-related stressors, other women Veterans employed more negative coping strategies (such as avoidance, binge eating, and substance use) that jeopardized their well-being.¹⁰ In these interviews, women Veterans noted that reintegration can be a serious challenge. Similarly, Beder et al.'s interviews with 118 women military personnel showed that with the challenges of post-deployment readjustment, mental health providers "must be attuned to the nuances of the reintegration experience".⁷

Our study aims to expand upon prior work by using self-report qualitative data from a national, multi-wave prospective observational cohort study of Army National Guard and Reserve enlisted military personnel. Using this non-treatment seeking sample of women, we present data on the self-reported stressors across four different phases of their deployment experience: immediately before, immediately after, 3 months after, and 1 year after deployment. To our knowledge, this is the first study to query women military personnel about their stressors at multiple time points across the deployment cycle. Understanding the nature of these self-reported stressors and how these stressors change from before to 1 year after deployment is needed to facilitate the development of clinical programs that address the needs of women before and after deployment.

METHODS

Participants

The HEROES Project is a prospective, longitudinal observational cohort study of pre-deployment and early post-deployment psychosocial and physiological predictors of post-deployment physical symptoms, functional status, and health care utilization. We recruited 767 Army National Guard and Reserve personnel deploying to OEF/OIF from multiple units across 48 states. Approximately 10 % ($N=79$) of the initial sample was female. Of these 75 eligible to continue in the study, 35 reported a stressor at Phase 2, 41 at Phase 3, and 48 at Phase 4, with 20 completing all four phases. In each follow-up phase, participants were lost to follow-up for a variety of reasons, such as Veterans returning to a different base after deployment, and incorrect or delayed information about the Veteran's return date or address.

Procedure

All participants were surveyed prior to deployment at the military installation from which they deployed (Phase 1, between 2005 and 2008). We surveyed them again immediately after return from deployment (Phase 2, from 2007 to 2009), at 3 months after return (Phase 3, from 2007 to 2010), and 1 year after return (Phase 4, from 2008 and 2011). This study was approved by three institutional review boards including that of the New Jersey VA Health Care System and all participants provided informed consent.

At all time points, participants completed the Coping Responses Inventory (CRI).^{13,14} The initial, open-ended item of the CRI asked participants to "think about the most important problem or stressful situation you have experienced in the last 12 months (for example, troubles with a relative or friend, the illness or death of a relative or friend, an accident or illness, financial or work problems). Briefly describe the problem in the space provided below. If you have not experienced a major problem, list a minor problem that you have had to deal with."

We coded the brief responses (i.e., typically a few words or phrases) using standard qualitative coding methods in an iterative process following established qualitative research guidelines.^{15,16} Coding was done in four stages, corresponding with each phase of data collection. As part of a larger study, we initially established a coding scheme using pre-deployment data from both male and female respondents to ensure that we captured the breadth of possible responses for all respondents. To develop this initial coding scheme three of the authors (KQ, ED & SS) read through a randomly selected set of 100 responses (from Phase 1) to identify possible themes and key phrases. We then discussed codes and established a coding dictionary. This initial coding scheme was used as a starting point to develop our women-specific coding scheme. Two coders

(LM and ED) separately scored another randomly selected set of 50 women Veterans' responses from Phase 1. They then met to identify and resolve any discrepancies in the coding, and revised the initial dictionary of responses for women Veterans. For each of the remaining responses, three coders (LM, ED & GY) separately coded all of the responses and met to compare and discuss any discrepancies in the codes. In total, codes were assigned and reviewed by four of the authors (GY, LM, ED, and KQ). A code book was established at Phase 1 and additional codes were added as each study phase was completed. This code book was reviewed in an iterative fashion across all four phases, and data from all four phases were re-coded using the final code book. Most demographic variables (age, race, ethnicity, number of previous deployments, educational history) were collected at Phase 1. Marital status, education status, and employment status were collected at Phase 3.

RESULTS

Seventy-nine female military personnel completed Phase 1 of the study. The mean age of the sample was 27.57 years (SD=7.85; range 18–50). Descriptive statistics for eligible study participants are presented in Table 1. Attrition analyses were conducted on demographic data collected at Phase 1 for all participants using two groups: those who completed Phase 4 (this group included data from individuals who may not have completed Phases 2 or 3) and those who did not complete Phase 4. Phase 4 completers were

Table 1. Descriptive Demographics of HEROES Participants*

Variable	N*	Percent (%)
<i>Race (N= 79)</i>		
Black or African American	13	16.5
Hispanic	8	10.1
White	53	67.1
Other	5	6.3
<i>Number of previous deployments (N= 79)</i>		
0	55	69.6
1	16	20.3
2	8	10.1
<i>Marital status (N= 40)</i>		
Never married	20	50.0
Married	11	27.5
Separated/divorced	9	22.5
<i>Education status (N= 40)</i>		
In school	15	37.5
Not in school	25	62.5
<i>Employment status (N= 40)</i>		
Employed full-time	20	50.0
Employed part-time	5	12.5
Unemployed	15	37.5
<i>Children (N= 38)</i>		
None	24	63.2
One	4	10.5
Two or more	10	26.3

*Race, number of previous deployments, and educational history were collected at Phase 1. Marital status, education status, and employment status were collected at Phase 3. Number of children was collected at Phase 2

significantly older at pre-deployment (M=29.17 vs. M=25.10 years); ($t(77)=-2.31, p < 0.02$) than those who did not complete Phase 4. There were no other significant demographic differences between the groups.

Coding of the open-ended response on the Coping Responses Inventory (CRI) revealed a wide variety of events reported as the “most important” stressor. Our codes clustered into six major categories of reintegration stressors for female Veterans: (1) interpersonal (i.e., issues with family or friends), (2) deployment and military-related, (3) health concerns of self and others, (4) death of a loved one, (5) daily needs (i.e., financial/housing/transportation concerns), and (6) civilian employment or school concerns. Nine responses were not coded because they could not be accurately categorized due to insufficient information in the response. Individuals could report more than one concern, and responses could be coded into more than one category. Most individuals reported one or two different stressors per phase.

Table 2 provides examples of responses in each of the six categories. Figure 1 illustrates the relative frequencies of the “most important” stressors reported across all four phases. We also show the frequencies of stressors across all four phases for those who completed Phase 4 and found a similar pattern of responses (Fig. 2).

Interpersonal Stressors

Interpersonal stressors were most consistently reported as “most important” across phases (31 % of all identified stressors at Phase 1, 28 % at Phase 2, 30 % at Phase 3 and 25 % at Phase 4). These interpersonal stressors included problems communicating with significant others, difficulties interacting with previously close relatives and friends, and problems with infidelity. Examples of interpersonal stressors included “having a big fight with my best friend,” “normal conversations always erupt into a full scale war,” and “having marriage problems (an affair)—we almost got a divorce.” These issues ranged in their nature and intensity and included both episodic and chronic stressors. For example, at Phase 1, women reported serious problems, such as “I’m getting a divorce” and “my apartment was raided by the police because of a roommate’s behaviors and my roommates were kicked out of school.” They also reported problems that are likely more chronic and less serious, such as “arguing with my mother.” When specific relationships were mentioned, the most common ones were significant others, but children, siblings and friends were also commonly mentioned. For instance, Veterans reported problems in their romantic relationships, one noting that she “had to break up with my boyfriend... I felt depressed for a while.” Another Veteran wrote that her “sister was in jail and I had to be the guardian over three children in addition to my three children.” Phase 2 was particularly notable because women often reported interpersonal problems as their most important stressor, at times when military or deployment-related

Table 2. Examples of Self-Reported Stressors Provided by Women Veterans in HEROES*

Category	Sample responses
<i>Interpersonal</i>	<ul style="list-style-type: none"> • Breaking up with a boyfriend. • When I got called back to state duty after being deployed. My husband didn't want to be alone again and not knowing how long I was going to be gone. • Trouble with a relative who tries to make me feel guilty for not spending enough time with family. • My boyfriend distrusts me and accuses me all the time of wanting to be with someone else. • My husband and I are having some marital problems.
<i>Deployment-related</i>	<ul style="list-style-type: none"> • A team mate being hit with an improvised explosive device (IED). • My team mate was self-absorbed and lazy. • Discrimination and harassment during deployment with infantry unit. • The way things were handled while on this deployment.
<i>Health of self and others</i>	<ul style="list-style-type: none"> • I had an ectopic pregnancy. • Being completely irritable with mood swings from really depressed to very happy over small things or for no reason at all. • My grandma has cancer and is currently under treatment. • My Grandpa got sick and had to be in ICU for several days.
<i>Death of loved one</i>	<ul style="list-style-type: none"> • My aunt passed away. She and I were very close. • Lost a relative. He was a special needs adult and we were prepared for the loss but that didn't make it much easier. • Two friends were killed in action. • The death of my grandmother on Thanksgiving day.
<i>Daily needs</i>	<ul style="list-style-type: none"> • I have trouble paying the bills. Divorce and not enough money to keep bills caught up. • My sibling not paying as agreed on my auto loan and other debts. • With the economy being so bad, I have had to deal with wondering how we were going to pay for things. • Loss of wages and unable to look for work.
<i>Employment or school-related</i>	<ul style="list-style-type: none"> • Upon returning from deployment, I had to find another job. • Stresses with getting back into college.

*Responses were edited for brevity and could be coded in more than one category

stressors might be expected to be the most stressful. The types of interpersonal problems reported in Phases 3 and 4 were similar to those at Phase 2, as women Veterans continue to report interpersonal challenges with family, friends, and coworkers. Some Veterans began to report interpersonal concerns at Phases 3 and 4 that were affected by deployment (e.g., “Cutting out a friendship with a friend that I had for about 6 years... realizing that my experiences have changed me”; “Issues in my marriage resulting from my inability to remember things and the differences in how I do things now in comparison to before I deployed”).

Deployment Stressors

As expected, deployment-related or military stressors were common at Phase 1 (31 %) and anticipated the imminent deployment. Such responses included “getting mobilized for a deployment and having only two full days to get ready” and “having to be deployed.” As would be expected at Phase 2 (immediately after deployment), deployment or military-related stressors (33 % of stressors reported) now included reports of such situations as “I experienced multiple rocket fire attacks,” “I was deployed with a unit of total strangers,” and “I have had to look the enemy in the eyes everyday and still serve them food.” By Phase 4, deployment or military-related reports had decreased to 6 % of the total of most important stressors.

Health of Self and Others

Health concerns of self and/or others were a reported source of stress for many Veterans. Reported health stressors ranged from 9 % at Phases 2 and 3 to 20 % at Phase 4. The majority of reported health concerns were for others. At Phase 1, only two women reported their own health as their primary stressor. Even at Phase 4, 1 year after deployment when mental and physical health problems should have appeared, there were only four women who reported as

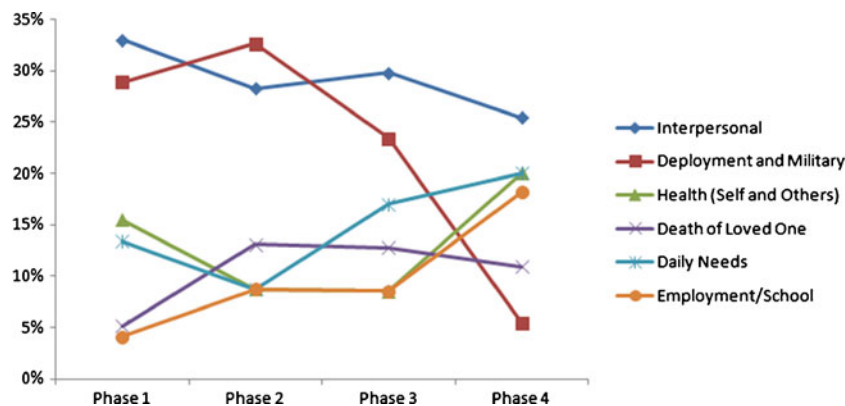


Figure 1. Relative frequencies of reported stressors as percentages of total responses coded by study phase (overall sample).

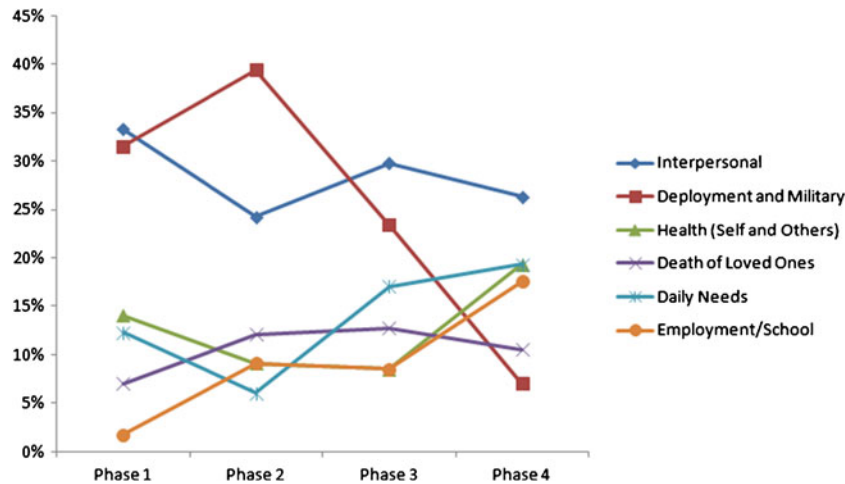


Figure 2. Relative frequencies of reported stressors as percentages of total responses coded by study phase (Phase 4 completers only).

most important their own health problem. Most women reported health problems of others, such as “my step-father had to have double bypass” and “one of my soldiers has been diagnosed with inoperable Stage 3 lung cancer”. There were few descriptions of women’s own mental health problems and no one reported PTSD as a primary stressor.

Death of Loved Ones

Some Veterans report death of loved ones to be the most stressful event. This included deaths of family members and friends who died due to illness, and unit members who died in action. Death-related stressors represented 5 % of all responses in Phase 1 and were a relatively stable proportion of responses across Phases 2 to 4 (10–13 %).

Daily Needs

In comparison, reports of daily needs as the most important stressor increased from 12 % (Phase 1) to 20 % (Phase 4). Such stressors included “the military not paying my student loans as I thought they would” and “I had to take out a small student loan to pay rent.” For some, interpersonal stressors reported in prior phases had a direct effect on their daily needs, such as “divorce caused my bills to get behind,” and “my boyfriend... spent most [of the] money on himself.”

Employment and School Stressors

Similar to the pattern with daily needs, civilian employment/school-related stressors reported as most important increased from 5 % (Phase 1) to 18 % (Phase 4), including “obtaining a job in this area has been difficult” and “I need to do an internship... but I am having difficulty finding an [internship] site.” As expected, many employment stressors

are related to being able to pay the bills and the Veterans’ ability to provide for dependents.

DISCUSSION

A major finding of our study was the high relative frequency at which women Veterans reported interpersonal concerns as their most important stressor from pre-deployment to 1 year after return from deployment. Indeed, the proportion of most important stressors that were interpersonal remained relatively stable from before to 1 year after deployment. These stressors included problems with family and friends and feelings of isolation or detachment from loved ones. These feelings have been previously documented among both male and female Veterans.^{5,9,11} However, it was notable that interpersonal problems were the most consistently reported major concern, even right after deployment when military-related stressors might be expected to be predominant. Interpersonal stressors may also be particularly of concern because during deployment Veterans may not be able to take actions to address those problems, given geographical distance and minimal time for contact, especially when the other parties are located stateside. The limited ability to resolve interpersonal stressors during a combat deployment should be addressed in future studies and are an intervention opportunity for future combat deployments. Interpersonal stressors are likely to negatively affect a person’s ability to fully attend to their combat mission, and could negatively impact the Veteran’s reintegration into civilian life. Because our results indicate that interpersonal problems continue to be a major source of concern at least through 1 year post-deployment, we must continue to be watchful for any long-term effects on health over a more extended reintegration period. Finally, future studies should also examine how interper-

sonal issues impact care seeking. We found that women Veterans were more likely to report their problems as interpersonal, and less likely to report their most important stressors as related to their own health. It was recently estimated that about 37 % of returning OEF/OIF Veterans who seek Veterans Affairs (VA) healthcare receive mental health diagnoses.²⁰ Despite this, few of the women reported their own mental or physical health problems as their most important stressor. Future research should focus on understanding the possible interaction between interpersonal stress and mental health needs, and whether some stressors negatively impact help-seeking behavior among women Veterans.

We also found, as expected, that women Veterans reported deployment-related or military stressors with the highest relative frequency just before and just after the deployment. The frequency of these stressors decreased over time after deployment. Although deployment or military-specific problems were no longer a primary focus of concern at the later phases, many of the remaining stressors still appeared to be related to deployment.

Our study showed a proportional increase from Phase 1 to Phase 4 in reported daily needs stressors as a major concern. This increase was especially notable between the immediate post-deployment phase and at 12 months after return (increased from 6 to 19 % of total). Routine and time-consuming tasks, such as coordinating the family budget and child care, doing laundry, and paying the rent, may be especially taxing in the context of other needs (e.g., interpersonal stressors, physical and mental health issues) and after one has had many of these daily needs provided by others while deployed. In addition, it is possible that tangible support from others immediately after the Veteran's return from a deployment wanes over time.

Our female participants also reported problems with civilian employment or schooling, including unemployment, underemployment, or dissatisfaction with their work life, especially at 1 year post-deployment. These Veterans faced a difficult time returning to civilian jobs in the context of very difficult economic conditions (beginning in 2008). Similarly, those who returned to school reported difficulty in academic functioning. For these Veterans, it is important to assess barriers that may make it difficult for women Veterans to complete their education.

One of the strengths of this study is the availability of data from multiple time points from a sample of non-treatment-seeking military personnel recruited before deployment. Limitations of the data reported here include a relatively small sample size and the lack of time and resources to conduct more extensive face-to-face qualitative interviews with participants, in light of the limited time permitted for testing. Although the sample size is relatively small, it is considerably larger than existing qualitative studies of stressors in women OEF/OIF

Veterans.^{10,21} Future research with a larger sample should use more in-depth qualitative methods coupled with quantitative methods to better understand the nature of these stressors, their interactions with each other and with care-seeking, and how to best mitigate these stressors. Another limitation of the study was attrition as the study progressed from Phase 1 to 4. To address the possibility that the sample remaining at Phase 4 was different than the overall sample, we showed data for both the overall sample (Fig. 1) and the subsample of women who completed Phase 4 data collection (Fig. 2). These figures show remarkably similar stressor patterns for the overall sample and those completing Phase 4. In addition, our analysis of the demographic characteristics of the sample revealed only an age difference between the full sample vs. Phase 4 completers, with Phase 4 completers being on average about 4 years older. Together, these results diminish our concern that attrition substantively altered our findings. Lastly, it is important to note that we queried for the most important reported stressors of women Veterans. The frequency of all stressors may vary from those reported here, either because stressors not considered "most important" were not reported or due to participants' unwillingness to report certain stressors.

Our data suggest that clinicians should discuss interpersonal concerns and problems with daily needs, because dealing with chronic stressors—in particular those that negatively impact the Veteran's ability to address her own needs—could also impact her health. Providing health care that is tailored to the needs of women Veterans and that takes into account other issues of concern in woman Veterans' lives may lead to better results; for example, some VA facilities programs where women Veterans can share and receive peer and professional support in navigating the post-deployment period. A broader dissemination of these programs may be especially helpful for women experiencing interpersonal problems or difficulties communicating with friends and family members. In addition, for women Veterans who report significant unmet daily needs, accessibility will be a barrier to utilization of health care services.¹⁷ Thus, the VA must continue to be in the forefront of finding new ways to reach out to and support women Veterans, including collaborating with local community and religious groups, using telemedicine, and offering evening appointments.

Finally, this study acknowledges the often unquantifiable sacrifices of all women Veterans. Although much attention has been focused justifiably on issues such as PTSD and sexual trauma, it is remarkable that Veterans indicate that it is their daily interpersonal relationships that are often most stressful. Our findings should encourage all providers to recognize both the more obvious and more hidden sacrifices that Veterans have made to serve our

country. As it has been noted,^{6,18,19} at stake is the retention of women in the military and the well-being of those women “who have borne the battle” and their loved ones.

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