Post-deployment Stressors Among the U.S. Active Duty Military Population

An Examination of Gender Differences

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Abstract

Background Research has shown that deployment and exposure to combat result in increased risk of posttraumatic stress disorder (PTSD), major depression, substance abuse, functional impairment in social and employment settings, and the increased use of health care services. To date, few studies have examined gender differences with regard to combat exposures and associated mental health consequences, such as stress.

Purpose The purpose of this study is to examine the prevalence of life stressors, life-changing events, and coping mechanisms among women and men in the Services after deployment to Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF).

Study design/methods For these analyses, we defined deployment as any duty assignment since September 11, 2001, to OIF/OEF (including peacekeeping missions). Non-deployed personnel were defined as individuals who had never deployed. Questions analyzed focused on the amount of stress caused by specific life stressors, the frequency of occurrences of life-changing events, and the mechanism used to cope with stressful events. Demographic distributions were calculated for men and women. Significance testing was performed to assess differences between women and men, deployed and non-deployed, for each HRB survey question of interest.

Results The study population consisted of 85.8% men and 14.2% women. More men than women were deployed to OIF/OEF (65.3% of men and 44.5% of women). Among those deployed, 89.2% were males and 10.8% were females.

Overall, compared to men, significantly more women reported experiencing “a lot” of stress, significantly more multiple occurrences of life-changing events, and significantly more usage of positive coping behaviors.

Amongst the deployed population, significantly more women reported experiencing “a lot” of stress from life stressors compared to men. Both men and women who had deployed had a significantly higher percentage report multiple occurrences of life-changing events compared to non-deployed men and women. Also, a higher percentage of deployed men than women reported significantly higher usage of negative coping behaviors compared to their non-deployed counterparts.

Conclusions The data suggests that deployment increases the likelihood of experiencing “a lot” of stress amongst the identified life stressors and multiple occurrences of life-changing events for active duty males, but not females. While overall a higher percentage of women than men reported experiencing “a lot” of stress from the life stressors and multiple occurrences of life-changing events, the event of deployment to OIF/OEF did not significantly change the reported prevalence of these factors.
**Introduction and background**

Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) are unique from past combat operations due to the increased use of guerilla warfare which blurs the distinction of what is considered the front line of attack.¹ The expanded roles of females in the military, combined with the graying of defined combat zones, has increased the likelihood that more women will be exposed to combat in current operations. Modern warfare has resulted in fewer casualties than ever before, but the prolonged nature and direct combat of these engagements leaves all soldiers at risk for physical and mental health injuries. Research has shown that deployment and exposure to combat result in increased risk of posttraumatic stress disorder (PTSD), major depression, substance abuse, functional impairment in social and employment settings, and the increased use of health care services.² ³ To date, few studies have examined gender differences with regard to combat exposures and associated mental health consequences,¹ such as stress. Additionally, past study designs have lacked sufficient sample sizes or valid survey metrics to reach any substantial conclusions about women in the military. Women’s expanding role in combat operations offers both an opportunity and a challenge to adapt and analyze gender differences that may exist with mental health injuries and coping thereafter.

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While stress has many clinical definitions, the aim of this study is not to define stress, but rather to observe select gender differences in life stressors, stressful life-changing events, and coping mechanisms. Today there are many different concepts of stress, including psychological, clinical and environmental, among others, and with various combinations of concepts also found.⁵ Since 1980, the DoD has conducted a series of surveys of activity duty military personnel, the tenth of which was completed in 2008. The Survey of Health Related Behaviors among Active Duty Military Personnel (HRB survey) assesses the nature, extent and consequences of substance use and abuse, mental well-being, stress and coping at work and in the family, and experiences related to combat exposure and deployment. Keeping current with the structure of the U.S. military, and the expanding role of women in the military, additional questions have been added to the survey to assess stress associated with being a woman in the military. In 2008, 39% of all active duty women reported experiencing “a great deal” or “a fairly
large amount” of stress associated with being a woman in the military. While it is apparent from the data that this is an issue warranting further attention, this question represents only an overview of the experiences of the female military population. The study of women in the military is in its infancy and as of yet there has been inadequate research on the post-deployment, stress-related experiences of women in the current U.S. military environment. This study is the first to use HRB survey data for an in-depth analysis of women and their post-deployment, stress-related experiences.

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Data collection for the HRB survey takes place on site and is the only anonymous survey in the DoD. The survey target population includes all active duty personnel, except recruits, academy cadets, and persons who were absent without leave or incarcerated. A random sample of 64 military installations worldwide is selected, stratified by branch of service (Army, Navy, Air Force, Marine Corps, and Coast Guard) and region of the world (within and outside of the continental United States, or Navy afloat). At participating installations, personnel are randomly selected within pay grade and gender strata. Officers and women are oversampled. An alternate sample that matches personnel by pay grade and gender is used to replace personnel who are inaccessible due to deployments, temporary duty assignments, leave, transfers, or discharge.

For the 2008 HRB, 40,436 active duty service members were sampled with 28,546 completing surveys, resulting in a response rate of 70.6%. Data were weighted to represent all active duty personnel, and post-stratification methods were used to develop non-response adjustment factors.

**Methods**

For these analyses, we defined deployment as any duty assignment since September 11, 2001, to Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF) (including peacekeeping missions). Non-deployed personnel were defined as individuals who had never deployed. HRB questions of interest for these analyses dealt with stress and coping with stress. More specifically, questions analyzed focused on the amount of stress caused by life stressors,
the frequency of occurrences of life-changing events, and the mechanisms used to cope with stressful events. Life stressors included the following events: problems with co-workers, problems in relationships with immediate supervisors, concern about performance ratings, conflicts between military and home responsibilities, being away from one’s family, being away from one’s friends, divorce or breakups, infidelity, money problems, and behavioral problems with one’s children. Questions regarding life-changing events asked the number of times in the past year personnel had experienced the following: low performance ratings, Uniform Code of Military Justice (UCMJ) punishment, neglecting family responsibilities, partaking in heated arguments with family or friends, and generally finding it hard to handle problems. Respondents were also asked which coping actions they employed when pressured, stressed, depressed, or anxious. Specific means of coping included: talking to a friend or family member, smoking, drinking alcohol, praying, exercising or engaging in sports, engaging in a hobby, eating, or developing plans for solving problems.

Demographic distributions were calculated for men and women. Within each of these groups, distributions were calculated for deployment, pay grade (Enlisted, Officer/Warrant Officer), race (white, black, and other), and marriage (married, single, divorced, other). The median age with the interquartile range was also calculated for each group. Significance testing was performed to assess differences between women and men, deployed and non-deployed, for each HRB question of interest. All analyses were done with SAS 9.2 (SAS Institute, Cary, NC). To account for weighted survey data, PROC surveyfreq was utilized to calculate weighted distributions and the Rao-Scott chi-square test was used to test for significance. Significance was determined by \( \alpha < 0.05 \).
Results

- Demographics: The 2008 HRB survey population consisted of 28,588 participants, 85.8% men and 14.2% women. The majority of the study population were enlisted (81.5% of females, 83% of males), classified their race as White (52.4% of females, 66.3% of males), and classified themselves as married (43% of females, 56.5% of males). Table 1.

- Overall: Significantly more women reported experiencing “a lot” of stress compared to men in 5 out of 10 life stressors. Significantly more women indicated having multiple occurrences for 1 out of 5 life-changing events compared to men. Women also reported using 4 out of 7 coping behaviors more than men. Women use more positive coping behaviors to manage stress. Figures 1-3.
Figure 1. Percentages shown are self-reported high levels of stress due to the listed life stressors. Study participants were asked to rate their stress on a four point scale with “none at all” being the lowest and “a lot” being the highest. A response of “a lot” was considered high stress.

*indicates significantly different percentages between men and women overall for that life stressor.
Figure 2. Percentages shown are self-reported multiple times experiencing each life-changing event. Study participants were asked on a four point scale how many times each event occurred within the last 12 months with “0” being the lowest and “3 or more” being the highest. A response of “3 or more” times or “2” times was considered multiple.

*indicates significantly different percentages between men and women overall for that life changing event.

Figure 3. Percentages shown are self-reported frequent use of coping behaviors. Study participants were asked how often, on a four point scale, they engage in the listed activities when they feel pressured, stressed, depressed, or anxious. The scale ranges from “never” to “frequently.”

*indicates significantly different percentages between men and women overall for use of that coping behavior.

- Life stressors by gender: Women who had deployed to OIF/OEF were more likely to report experiencing “a lot” of stress due to work relationships, problems with supervisors, divorce/breakup, and infidelity, compared to deployed men. A higher percentage of non-deployed women reported experiencing “a lot” of stress compared to non-deployed men for all specified reasons. Figures 4 & 5.
Figure 4. Percentages shown are self-reported high levels of stress due to the listed sources of stress. Study participants were asked to rate their stress on a four point scale with “none at all” being the lowest and “a lot” being the highest. A response of “a lot” was considered high stress.

*indicates significantly different percentages between deployed and never deployed personnel for that life stressor.

Figure 5. Percentages shown are self-reported high levels of stress due to the listed sources of stress. Study participants were asked to rate their stress on a four point scale with “none at all” being the lowest and “a lot” being the highest. A response of “a lot” was considered high stress.

*indicates significantly different percentages between deployed and never deployed personnel for that life stressor.
Life stressors by deployment: A significantly higher percentage of women who had deployed to OIF/OEF reported experiencing “a lot” of stress due to conflicts between military duties and family/personal responsibilities, infidelity, and behavioral problems in their children in comparison with their non-deployed counterparts. Men who had deployed to OIF/OEF were significantly more likely to report experiencing “a lot” of stress for life stressors compared to non-deployed men. The top 3 most prevalent life stressors reported by men included being away from family, conflict between military duties and family/personal responsibilities, and problems with immediate supervisor. Figures 6 & 7.

Figure 6. Percentages shown are self-reported high levels of stress from the listed sources of stress. Study participants were asked to rate their stress on a four point scale with “none at all” being the lowest and “a lot” being the highest. A response of “a lot” was considered high stress.

*indicates significantly different percentages between male and female active duty service members for that life stressor.
Figure 7. Percentages shown are self-reported high levels of stress from the listed sources of stress. Study participants were asked to rate their stress on a four point scale with “none at all” being the lowest and “a lot” being the highest. A response of “a lot” was considered high stress.

*indicates significantly different percentages between male and female active duty service members for that life stressor.

- Life-changing events by gender: Women who deployed to OIF/OEF reported more instances of heated arguments with family and friends and significantly more difficulty handling problems in the past year compared to deployed men. Deployed men reported significantly more instances of getting a low performance rating when compared to women. Among non-deployed personnel, women were significantly more likely to report higher occurrences of heated arguments with family and friends and difficulties handling problems compared to men. Women were significantly less likely to report multiple occurrences of neglected family responsibilities compared to their male counterparts. Figure 8.
Figure 8. Percentages shown are self-reported multiple times experiencing each life changing event. Study participants were asked on a four point scale how many times each event occurred within the last 12 months with “0” being the lowest and “3 or more” being the highest. A response of “3 or more” times or “2” times was considered multiple.

*indicates significantly different percentages between deployed and never deployed personnel for that life-changing event.

- Life-changing events by deployment: Men and women who had deployed to OIF/OEF reported significantly more occurrences of low performance ratings and neglected family responsibilities compared to their non-deployed counterparts. Deployed men also reported significantly more occurrences of heated arguments with family and friends. Figure 9.
Figure 9. Percentages shown are self-reported multiple times experiencing each life changing event. Study participants were asked on a four point scale how many times each event occurred within the last 12 months with “0” being the lowest and “3 or more” being the highest. A response of “3 or more” times or “2” times was considered multiple. *indicates significantly different percentages between male and female active duty service members for that life-changing event.

- Coping behaviors by gender: Women who deployed to OIF/OEF had significantly higher reported rates of 4 observed coping behaviors compared with men who had deployed to OIF/OEF. The 4 specific behaviors include: talking to a friend, saying a prayer, eating, and thinking of a plan to solve the problem. Figure 10.

Figure 10. Percentages shown are self-reported frequent use of coping behaviors. Study participants were asked how often, on a four point scale, they engage in the listed activities when they feel pressured, stressed, depressed, or anxious. The scale ranges from “never” to “frequently.” *indicates significantly different percentages between deployed and never deployed personnel for that coping behavior.

- Coping behaviors by deployment: Women who deployed to OIF/OEF reported a significantly higher utilization of the observed coping behaviors, specifically, saying a prayer or developing of a plan to solve the problem, than women who never deployed. Men who had deployed to OIF/OEF reported significantly increased usage of five coping behaviors, compared to those men who never deployed. These seven behaviors include: having a drink, saying a prayer, exercising, eating, and thinking of a plan to solve the problem. Figure 11.
Figure 11. Percentages shown are self-reported frequent use of coping behaviors. Study participants were asked how often, on a four point scale, they engage in the listed activities when they feel pressured, stressed, depressed, or anxious. The scale ranges from “never” to “frequently.”

* indicates significantly different percentages between male and female active duty service members for that coping behavior.

**Conclusion**

Overall, women in the military reported more experiences of “a lot” of stress due to select life stressors, more life-changing experiences, and utilize more positive coping behaviors than men. Specifically, women reported significantly higher responses in approximately half of the life stressors, almost all life-changing events, and all positive coping behaviors. When deployment was taken into account, it was found that women who have served in OIF/OEF and non-deployed women reported similar experiences of “a lot” of stress due to life stressors. Additionally, the percentage of deployed women who reported experiencing “a lot” of stress due to life stressors is similar to that of deployed men. These patterns are consistent regarding multiple incidences of life-changing events. When it comes to dealing with stress, and engaging in coping behaviors, deployed women report similar behaviors as non-deployed women, and report higher usage of positive coping behaviors when compared to deployed men. The percentage of men who served in OIF/OEF and reported experiencing “a lot” of stress, multiple occurrences of life-changing events, and higher rates of coping behaviors is significantly greater when compared to non-deployed men.
While this study does not address all factors relating to the clinical definition of stress, our data suggests that the experience of deployment to OIF/OEF does not significantly affect active duty females’ reported levels of stress. Although women overall reported experiencing higher levels of stress from the observed life stressors and were more likely to have multiple occurrences of life-changing events than men, the differences between the population of women who had deployed to OIF/OEF and those who had never deployed were not significant. Deployed and non-deployed women reported experiencing similar levels of life stressors, occurrences of life-changing events, and use of coping behaviors. On the other hand, significantly more deployed men reported experiencing “a lot” of stress in addition to significantly more occurrences of life-changing events and use of coping behaviors compared to non-deployed men. Based on this analysis it appears that deployment was more likely to affect the reported levels of stress for men than for women.

However, although women who have deployed to OIF/OEF do not report more experiences of stressful events, they do report higher usage of positive coping behaviors, indicating that they still experience stressful events, yet are able to practice behaviors that allow them to better cope with that stress. The most notable example of this is women who were deployed are significantly more likely to think of a plan to solve their problems, which perhaps was a practice developed by these women during their deployment. Further analysis of deployment as a predictor of stress should be conducted to more closely examine how the lives of women in the military are affected by deployment and possible combat exposure, as well as its effect on their mental health and life-long well being.

Maintaining a healthy personal life, especially as it relates to relationships, is an area that has already been targeted by the Department of Defense for additional support. Each Service offers a variety of comprehensive intervention programs for the service member and their families. Examples include the Army’s Strong Bonds and the Navy’s Project FOCUS, which have been developed to help strengthen the military family. Strong Bonds is a unit-based, chaplain-led program which assists commanders in building individual resiliency by strengthening the Army Family. The core mission of the Strong Bonds program is to increase individual Soldier and Family member readiness through relationship education and skills training. Similarly, the Navy’s Project FOCUS (Families Over-Coming Under Stress) is a family support program that combines therapeutic intervention with workshops regarding resilience building, communication, unit cohesion, and adaptation.
References


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