Impact of Prior Operation Enduring Freedom/Operation Iraqi Freedom Combat Duty on Mental Health in a Predeployment Cohort of National Guard Soldiers

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ABSTRACT  Objectives: The goal was to examine the impact of prior Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) combat deployment on reported psychiatric and somatic symptoms among National Guard/Reserve (NGR) soldiers 1 month before deployment to Iraq. Method: 522 NGR soldiers completed a survey assessing predeployment risk and resilience factors as well as current levels of PTSD, depressive, and somatic symptoms. Results: Overall, soldiers reported few psychiatric symptoms present before deployment to Iraq. However, compared to soldiers preparing for their first deployment to Iraq, soldiers previously deployed to OEF/OIF reported more PTSD, depressive, and somatic symptoms. Previously OEF/OIF deployed soldiers reported lower perceptions of unit social support, but reported no differences in perceptions of preparedness or concerns about family disruptions. Implications for interventions and training with military personnel before deployment as well as future longitudinal research directions are discussed.

INTRODUCTION

With over 1.6 million U.S. troops serving combat deployments in Afghanistan (Operation Enduring Freedom [OEF]) and Iraq (Operation Iraqi Freedom [OIF]) since 2001, National Guard and Reserve (NGR) component soldiers have played an increasingly vital role in sustaining these military operations. Up until recently, NGR troops served 1 weekend a month and 2 weeks a year and were activated primarily to assist civilian authorities with local emergencies and natural disasters. For example, during the Vietnam War, approximately 28,000 Army and Air Guardsmen were called up for a year of active duty service, although only about 8,700 actually deployed to Vietnam. In contrast, as of November 2006, NGR component troops made up nearly half (46%) of the combat brigades in Iraq. This trend is likely to continue given the military’s sustained high operational tempo. NGR soldiers will likely be called upon to serve not only for local emergencies and natural disasters, but also remain critical to supplementing active forces in OEF and OIF, making repeated extended combat deployments common. Although a growing body of evidence has documented the cumulative impact of trauma exposure, little research has investigated the impact of repeated combat deployments on OEF/OIF soldiers’ mental health. In addition, few studies have examined the relationship between prior combat exposure and other factors that may serve to mitigate or potentiate the impact of prior combat deployment on the mental health of NGR soldiers. 

Combat exposure is associated with considerable risks of postdeployment mental health concerns, including posttraumatic stress disorder (PTSD), depression, substance abuse, and physical health problems. For example, nearly 19% of Vietnam veterans reported lifetime PTSD in the National Vietnam Veterans Readjustment Study. Similarly, as many as 17–19% of active duty component soldiers screened positive for PTSD, depression, or anxiety upon returning from OEF/OIF. Some reports indicate that NGR troops are at increased risk for the development of emotional or psychological complications compared to active duty troops. The risk for the development of psychiatric disorders appears to increase at a greater rate for NGR soldiers in the months and years following deployment. For example, Milliken and colleagues found that rates of PTSD and depression more than doubled among NGR component soldiers between initial Post-Deployment Health Assessment and the Post-Deployment Health Reassessment conducted about 6 months later. The increase in emotional problems over time for NGR soldiers exceeded the rates found in regular active duty component service members. In a three-wave longitudinal study of 2,949 Gulf War I veterans, Wolfe and colleagues found that NGR soldiers were at increased risk for developing PTSD over time. Initially at time 1, when soldiers were assessed about 4–5 days following their return from deployment to Gulf War I, NGR status was not associated with PTSD symptoms. However, NGR status independently contributed to the development of PTSD 2 years later in this same cohort.
Following deployment, NGR component soldiers may face unique reintegration challenges as they transition from warfighter back to civilian roles. Compared to active duty soldiers, NGR soldiers tend to be older and may be more likely to have left family and civilian work responsibilities outside the military. As a result, NGR troops may face significantly greater familial and occupational strain both during and following deployment, and these challenges may contribute to NGR soldiers’ elevated risk for mental health difficulties postdeployment. For instance, postdeployment stressful life events (e.g., occupational or legal difficulties, marital disruptions) have been shown to be associated with higher rates of PTSD and depression. Further, because they are not embedded with their military units following a combat deployment, NGR personnel may also have lower levels of support from social and occupational peers, which may also increase risk for PTSD.

Sustained military operations in Iraq and Afghanistan have led to increased numbers of military personnel serving multiple combat tours. Two reports have addressed the issue of multiple deployments among active duty soldiers and Marines, but reached different conclusions. The third iteration of the Mental Health Advisory Team (MHAT-III) examined 1,122 soldiers and Marines during their deployment to Iraq. Service members with previous OIF deployments were found to have significantly higher levels of acute stress (posttraumatic stress symptomatology) than those on their first deployment. Active duty soldiers with previous OIF deployments were also at greater risk for developing other psychiatric complications. Specifically, they reported greater concerns about deployment length, family separation, and boredom/repetitive work as well as significantly lower levels of unit morale than those on their first deployment.

On the other hand, Killgore and colleagues reported findings that seem to contradict the MHAT-III. In their sample of 2,068 active duty soldiers who were about to be deployed to Iraq, they found that the 8.3% of soldiers with previous combat deployments (in the first Gulf War, Somalia, or OIF) did not report higher rates or levels of PTSD symptoms. Prior combat service was associated with lower levels of affective symptoms and higher levels of somatic symptoms. They hypothesized that these findings indicated possible repression of distress with accompanying somatic amplification in soldiers about to be reexposed to combat situations. The timing of data collection (during versus before deployment) may account for the discrepant findings between the two studies, although MHAT-III hypothesized that increased psychiatric symptomatology found in previously deployed soldiers was the result of preexisting symptoms of PTSD, rather than the development of symptoms during the current deployment. The definition of prior deployment (only OIF versus prior combat deployment to OIF, Somalia, or the first Gulf War) may have also affected the findings. It is possible that combat conditions and psychological demands of deployments to Somalia (a peacekeeping mission) and the first Gulf War (involving 40 days of aerial assaults and 5 days of ground combat) may be quite different from those of the sustained military operations in OEF and OIF. Clearly, more work is needed in examining the effects of multiple combat deployments in troops during and after combat tours. Additionally, we are aware of no studies on the effect of multiple combat deployments on NGR soldiers as they prepare for deployment.

The present study addresses these gaps in the literature by examining levels of mental health symptoms (posttraumatic stress, depressive, and somatic) and risk and resilience factors (unit support, perceived military preparedness, and concerns about family disruptions from the deployment) among NGR soldiers with and without prior OEF/OIF combat deployments.

**METHOD**

**Procedures**

Soldiers from a National Guard Brigade Combat Team, who were deployed to Iraq in March 2006, voluntarily completed a survey at Camp Shelby, Mississippi 1 month before deployment. Participants were recruited through unit announcements and flyers. Soldiers were provided a description and overview of the study and informed that their participation in the study was voluntary and confidential. After providing written informed consent, soldiers completed the survey in group classrooms under standardized conditions with an investigator present to answer questions. The institutional review board at the Minneapolis Veterans Affairs Medical Center and the Minnesota National Guard command approved all procedures and materials.

**Participants**

Participants were 522 male and female National Guard soldiers from the 1st Brigade Combat Team of the 34th Infantry Division (1/34 BCT) who had completed approximately 6 months of training at Camp Shelby, Mississippi before being deployed to Iraq. The demographic profile of the study sample was very similar to that of the 1/34 BCT as a whole. Participants were primarily male (88.5%; n = 462), most were Caucasian (91.8%; n = 479), and nearly half of the participants were married (45.5%; n = 237). The mean age of participants was 29.1 (SD = 8.6), with 60% (n = 313) of soldiers between the ages of 18 and 29. The majority of participants were enlisted personnel (90.2%, n = 471), with 9.8% (n = 51) reporting a rank of officer or warrant officer. In terms of educational attainment, 26.6% (n = 139) reported a high school diploma, 41.2% (n = 215) reported some college, and 30% (n = 157) reported a college or graduate degree. Twenty-nine soldiers (5.6%) reported at least one prior deployment to OIF or OEF. Sample demographics for soldiers with and without a prior deployment to OEF or OIF are presented in Table I.

**Measures**

**Risk and Resilience Factors**

Scales from the Deployment Risk and Resilience Inventory (DRRI) were used to assess key psychosocial resilience and risk factors for military personnel deployed to the Iraqi
Impact Of Prior OEF/OIF Deployment

TABLE I. Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Prior Deployment (n = 522)</th>
<th>No Prior Deployment (n = 493)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>29.7 (7.8)</td>
<td>29.0 (8.7)</td>
</tr>
<tr>
<td>Marital Status (% married)</td>
<td>55.2%</td>
<td>44.8%</td>
</tr>
<tr>
<td>Ethnicity (% Caucasian)</td>
<td>93.1%</td>
<td>91.7%</td>
</tr>
<tr>
<td>Rank (% enlisted)</td>
<td>82.8%</td>
<td>90.7%</td>
</tr>
</tbody>
</table>

TABLE II. Predeployment Symptoms by Prior Deployment Status

<table>
<thead>
<tr>
<th>Measure</th>
<th>Prior Deployment Status</th>
<th>No Prior Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prior Deployment</td>
<td>No Prior Deployment</td>
</tr>
<tr>
<td>PCL</td>
<td>31.2 (14.5)**</td>
<td>25.9 (9.6)</td>
</tr>
<tr>
<td>BDI-II</td>
<td>9.1 (9.2)*</td>
<td>5.8 (6.6)</td>
</tr>
<tr>
<td>PRIME-MD</td>
<td>3.9 (3.3)*</td>
<td>2.8 (2.9)</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01. PCL, PTSD Checklist; BDI-II, Beck Depression Inventory II; PRIME-MD, Somatic Symptom Count from PRIME-MD.

TABLE III. Risk and Resilience Factors by Deployment Status

<table>
<thead>
<tr>
<th>Scale</th>
<th>Prior OEF/OIF Deployment</th>
<th>No Prior Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Social Support</td>
<td>36.6 (12.2)</td>
<td>40.9 (9.7)*</td>
</tr>
<tr>
<td>Life/Family Disruption</td>
<td>27.6 (9.5)</td>
<td>28.9 (7.4)</td>
</tr>
<tr>
<td>Preparedness</td>
<td>33.0 (8.7)</td>
<td>34.5 (7.3)</td>
</tr>
</tbody>
</table>

*p < 0.05.
relationships between risk and resilience factors as measured by the DRRI subscales (Preparedness, Concern for Family Disruption, and Unit Social Support) and symptom measures (PTSD, depressive and somatic symptoms, or physical health complaints). Correlations between current symptoms and risk and resilience factors are presented in Table IV. Symptoms of PTSD and depression as well as somatic complaints present before deployment were significantly associated with soldiers’ perceptions of being less prepared for deployment, having greater concerns about the impact of deployment on life and family, as well as reporting lower perceived social support by their unit.

**DISCUSSION**

Overall, in the current study, the majority of National Guard soldiers reported low levels of psychiatric symptoms. These findings suggest that most National Guard soldiers were in good mental health before their current deployment to OIF. However, results of this study found elevated PTSD and depressive symptoms as well as greater somatic complaints before current OIF deployment among National Guard soldiers who had already served a prior OEF/OIF combat deployment. Soldiers previously deployed to OEF/OIF also reported greater perceptions of being less prepared for deployment, being less interested in the face of deployment, or that the extensive efforts on the part of medical personnel have ensured the medical readiness of deploying troops. On the other hand, the low rates of predeployment psychiatric symptoms documented here may suggest that military screening programs and training are effective in preventing soldiers with severe distress from reaching the point of imminent deployment in most cases. Although soldiers who were previously deployed to OEF/OIF did report more symptoms across all symptom domains assessed, there were relatively small differences across the groups that may not result in noticeable performance differences for those soldiers with prior deployment experiences. On the other hand, these findings raise important questions about the cumulative effects of repeated deployments for National Guard soldiers and whether repeated combat deployments have the potential to erode the well-being and readiness of our nation’s military personnel. Questions remain regarding whether soldiers with prior deployment experiences. On the other hand, these findings raise important questions about the cumulative effects of repeated deployments for National Guard soldiers and whether repeated combat deployments have the potential to erode the well-being and readiness of our nation’s military personnel. Questions remain regarding whether soldiers with prior deployment experiences.

Results of this study have a number of important implications for training and intervention with military personnel before deployment. On the one hand, the findings suggest that the vast majority of National Guard soldiers in our sample, even those with prior deployments, were not reporting clinically significant levels of psychiatric or emotional problems before deployment. It may be that most military personnel are resilient in the face of deployment, or that the extensive efforts on the part of medical personnel have ensured the medical readiness of deploying troops. On the other hand, the low rates of predeployment psychiatric symptoms documented here may suggest that military screening programs and training are effective in preventing soldiers with severe distress from reaching the point of imminent deployment in most cases. Although soldiers who were previously deployed to OEF/OIF did report more symptoms across all symptom domains assessed, there were relatively small differences across the groups that may not result in noticeable performance differences for those soldiers with prior deployment experiences. On the other hand, these findings raise important questions about the cumulative effects of repeated deployments for National Guard soldiers and whether repeated combat deployments have the potential to erode the well-being and readiness of our nation’s military personnel. Questions remain regarding whether soldiers with prior deployment experiences.

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**TABLE IV.** Associations between Risk and Resilience Factors and Predeployment Symptoms

<table>
<thead>
<tr>
<th>Variable</th>
<th>BDI-II</th>
<th>PRIME-MD</th>
<th>DRRI Preparedness</th>
<th>DRRI Unit Social Support</th>
<th>DRRI Life/Family Disruption</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCL</td>
<td>0.74*</td>
<td>0.51*</td>
<td>−0.23*</td>
<td>−28*</td>
<td>0.27*</td>
</tr>
<tr>
<td>BDI-II</td>
<td>0.57*</td>
<td>0.51*</td>
<td>−0.30*</td>
<td>−0.42*</td>
<td>0.24*</td>
</tr>
<tr>
<td>PRIME-MD</td>
<td>−0.20*</td>
<td>−0.42*</td>
<td>−0.23*</td>
<td>−0.23*</td>
<td>0.25*</td>
</tr>
<tr>
<td>DRRI Preparedness Subscale</td>
<td>0.51*</td>
<td>−0.23*</td>
<td></td>
<td></td>
<td>−0.23*</td>
</tr>
<tr>
<td>DRRI Unit Social Support Subscale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>−0.24*</td>
</tr>
</tbody>
</table>

*p < 0.001. PCL, PTSD Checklist; BDI-II, Beck Depression Inventory 2; PRIME-MD, Somatic Symptom Count from PRIME-MD; DRRI, Deployment Risk and Resilience Inventory.
follow this cohort and examine the impact of previous combat experience as well as a range of other risk and resilience factors on soldiers’ postdeployment functioning over time.

Conclusions drawn in the current report have several limitations. Participants were self-selected and although demographically quite similar to the overall brigade, participants may have differed systematically from nonparticipants in terms of psychiatric symptoms or risk and resiliency factors. The number of soldiers with previous OEF/OIF combat deployments was small in the current predeployment sample, limiting the scope and confidence of analyses. Data were collected near the end of a 6-month validation training period during which troops’ readiness for deployment was evaluated by medical personnel. It is possible that military screenings may have affected the whole sample and population from which it was drawn. Data were self-reported and hence susceptible to recall errors and information biases. Although valid and reliable, the measures utilized in this predeployment survey relied on self-report instruments. Future research should incorporate “gold standard” clinical interviews that allow for careful diagnosis of PTSD, depression, substance abuse, and other postdeployment mental health problems. Finally, this report details only a single time point of assessment, and so cannot rule out possible longer-term deterioration or improvement in soldiers with multiple deployments over time.

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