

Self-Reported Mental Health Status and Needs of Iraq Veterans in the Maine Army National Guard

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This study is made possible by a joint partnership of Community Counseling Center and the Maine National Guard.



Acknowledgements

Community Counseling Center would like to thank the following individuals, organizations and groups that were instrumental in the development of this project.

The Maine Army National Guard, who took the time to participate in the survey and provide their honest and thoughtful feedback about their deployment experiences and readjustment process.

The dedicated participants of the Maine National Guard's Military Adjustment Program (MAP), including Joe Wolfberg, Carla Johnson, Marcia Baker and VA and Vet Center staff.

The VA and Vet Center staff, who provide skilled and compassionate services to returning Iraq veterans, as well as expert consultation and advice to other community services providers.

Congressman Tom Allen, Senator Susan Collins, Senator Olympia Snowe and Congressman Michael Michaud for their support and dedication to helping veterans and their families. This project was funded by grants from the Substance Abuse and Mental Health Services Administration (SAMSHA) and Health Resources & Services Administration (HRSA).

Self-reported Mental Health Status and Needs of Iraq War Veterans in the Maine National Guard

Objective

To assess the prevalence of self-reported mental health symptoms and needs among members of the National Guard deployed to the Iraq war and to compare these with the symptoms and needs of Guard members who were deployed elsewhere or who had not been deployed.

Method

In 2006, surveys were completed anonymously by National Guard members in Maine. A total of 532 Guard members were surveyed, of which 292 were Iraq veterans. Most of the Iraq veterans had returned a year before they completed the survey. Of those surveyed, 292 had been deployed to Iraq, 165 had not been deployed, and 75 had been deployed elsewhere (primarily Afghanistan, the Persian Gulf, Hurricane Katrina, Guantanamo Bay, and Bosnia). The main outcome measures were self-reported symptoms of psychiatric conditions, social concerns, and desired social and mental health services.

Results

A total of 25% of Iraq war veterans reported significant problems with PTSD, alcohol, and/or depression. Hypervigilance and flashbacks were seen in 38% and 26% of Iraq veterans, respectively, and Posttraumatic Stress Disorder (PTSD), defined conservatively, was seen in 12.8% of Iraq veterans. Compared to Guard members who had not been deployed, Iraq veterans reported a significantly higher prevalence of problems with anger (43.6% vs. 16.4%), relationship problems (35.5% vs. 15.3%), concentration problems (39.5% vs. 16.1%), physical health concerns (33.9% vs. 20.0%), feeling distant or cut off from others (30.4% vs. 12.7%), emotional numbness (31.1% vs. 11.3%), problems in relationships with children (26.9% vs. 12.4%), sexual problems (22.6% vs. 9.7%), alcohol abuse (23.8% vs. 10.6%), and work stress (43.8% vs. 30.9%). Significant depression was seen in 27.2% of Iraq veterans vs. 17.0% of Guard members who had not been deployed.

Only 15% of Iraq veterans had sought help from a mental health professional, although somewhat higher percentages of veterans indicated at least a moderate likelihood of participating in confidential community services. Iraq veterans indicated that they would be most likely to participate in support groups with other veterans (32%), individual counseling (31%), education regarding war zone stress (31%), education regarding the readjustment process (29%), anger management skills training (29%), couples' communication skills training (28%) and couples/marital counseling (26%). Similar percentages were seen for Iraq veterans' perceptions of the likelihood that a family member would participate in mental health services.

Conclusions

This study provides the first systematic assessment of members of the Maine Army National Guard who were deployed to the Iraq war. Our findings indicate that among these Iraq veterans there was a higher self-reported prevalence of psychiatric symptoms and higher levels of current functional impairment and life stress than among those National Guard members who were not deployed to Iraq. These findings establish the need to address the mental health concerns of Iraq veterans.

The recent war in Iraq has raised important concerns regarding the mental health of members of the military deployed to the war zone. Deployment stressors and combat exposure have been shown in other military operations to be associated with significant mental health problems, including Posttraumatic Stress Disorder (PTSD), Alcohol Abuse, and Depression (Prigerson et al., 2001, Iowa Persian Gulf Study Group, 1997; Fontana & Rosenheck, 1994), with higher rates of combat exposure being associated with higher rates of PTSD (Prigerson et al., 2001; Hoge et al, 2004). Several investigations have also found an association between PTSD and functional impairment in a variety of domains, including physical health, violence and criminality, poorer interpersonal functioning in family and social settings, and impairment in occupational functioning (Jordan et al, 1992; Carroll et al, 1985; Golding, 1996; Friedman & Schnurr, 1995). Initial studies of members of the Army and Marines have found that significantly higher percentages of service members met screening criteria for PTSD, depression and anxiety after duty in Iraq than after duty in Afghanistan (Hoge et al, 2004) or the Persian Gulf (Wolfe et al., 1999).

Although discrepant findings exist (Bremner et al., 1996), considerable evidence suggests that rates of PTSD may increase over time following deployment. For instance, rates of PTSD among soldiers returning from the Gulf War increased over a two-year period following their deployment (Southwick et al, 1995), and Prigerson et al. (2001) found that among men reporting combat exposure, 22% experienced at least a 6-month delay in PTSD onset. Grieger et al. (2006) reported that 80% of injured soldiers who screened positive for PTSD or depression at 7 months following injury had screened negative for both conditions at one month. It is therefore important to assess the prevalence of PTSD and other mental health problems for a significant time period after veterans have returned home. To our knowledge, there are no published studies which have investigated the prevalence of mental health symptoms one year or more after members of the military have returned from deployment to Iraq. Further, there are no published studies of the mental health status of members of the National Guard who have returned to their civilian communities and to relative isolation from fellow service members, compared with members of the military who remain with their units upon return to military bases.

The primary objective of this descriptive study was to assess the prevalence of mental health symptoms, impairments in functioning and desired social services of members of the Maine National Guard deployed to the Iraq war. Standardized screening instruments were used for Posttraumatic Stress Disorder, Depression and Alcohol Abuse. Utilizing a self-report survey format, we conducted a cross-sectional investigation of all of the Army National Guard units in Maine. Unlike many studies, which have assessed mental health variables only among veterans seeking treatment at mental health facilities, this research design enabled us to investigate the current mental health status of the overall population of Army National Guard members in the state.

Method

Study population and Survey Methods

Data collection took place between January 2006 and June 2006. Screening surveys were completed anonymously by Army National Guard members in Maine. Research personnel provided a short introduction to the survey. The introduction included the purpose and nature of the survey and emphasized subjects' complete anonymity. It was explained that

the purpose of the survey was to understand Guard members' experiences, in order to develop and provide relevant and effective services. Subjects were given as much time as they needed to complete the survey. The majority of the surveys were completed within 30 minutes. The study was approved by the Institutional Review Board of the University of Southern Maine.

Nineteen Army National Guard units in Maine were surveyed and approximately 95% of Army National Guard members who were in attendance on the survey date were surveyed. This survey captured 62% of the total population of Army National Guard members in Maine who were not currently deployed. The study population is believed to be representative of the larger population of National Guard members. Rates of missing values for individual items were consistently under 5%, with the exception of gender, which was missing for 39% of Guard members, apparently due to the placement of this item on the survey. In addition, four items on the Combat Exposure Scale had rates of missing values between 5% and 10%.

Instrument Development and Definition of Outcomes

The survey was designed to measure a wide range of psychosocial variables, experiences while deployed, as well as current mental health and social service needs. In order to enhance validity and reliability of the data, standardized questionnaires were used to assess Posttraumatic Stress Disorder, depression, and combat exposure. Major Depression was assessed with the 9-item Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, and Williams, 2001). This scale consists of nine signs and symptoms of major depression and is derived directly from the diagnostic criteria of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). A PHQ-9 score of 10 or greater has a sensitivity of 88% and a specificity of 88% for major depression, and PHQ-9 scores of 5, 10, 15, and 20 represent mild, moderate, moderately severe, and severe depression, respectively.

Symptoms of posttraumatic stress disorder were assessed using the 17-item Post-Traumatic Stress Disorder Checklist – Military Version (PCL-M; National Center for PTSD). This scale consists of items which correspond to the DSM-III-R symptoms of PTSD. Many of the items on the PCL-M are worded specifically for traumatic military experiences rather than other traumatic life experiences, and therefore these items were administered only to members of the Army National Guard who had been deployed. For the conservative definition of PTSD to be met, subjects' total score had to be at least a 50 on a scale of 17 to 85, which is a well-established cutoff (Hoge et al., 2004, Weathers et al., 1994).

Trauma exposure was measured by the 7-item Combat Exposure Scale (CES; Keane et al., 1989), which assesses level of exposure to specific military stressors. This scale was administered only to Guard members who had been deployed.

Alcohol abuse was measured with a two-item screening instrument (Brown et al., 2001). At least one positive response to the questions "Have you been using alcohol more than you meant to?" or "Have you been feeling like you wanted or needed to cut down on your drinking?" detected current alcohol use disorders with nearly 80% sensitivity and specificity in young and middle aged adults (Brown et al., 2001).

Additional items were developed to assess subjects' perceived difficulties in relationships and at work, as well as physical health concerns. Subjects were asked whether they had been bothered by a particular problem over the previous month, and if so, whether they had been bothered a little bit, moderately, quite a bit, or extremely. Results were scored as positive if a subject endorsed an item at least at the moderate level. Guard members' perceptions of the degree to which their service was valued by local Iraqi civilians and by civilians in their home communities were assessed with the questions "Overall, how appreciated do you feel your service was by local Iraqi civilians/by civilians in your home community". The response format was a continuous scale from 1 ("Not at all appreciated") to 7 ("Very appreciated"), which was collapsed into three categories: not appreciated (1-2), moderately appreciated (3-5), and very appreciated (6-7). Concerns about future deployment and self-reported likelihood of participating in a variety of mental health and social services were also assessed.

Guard members were asked how likely they would be to participate in a variety of mental health and social services if the services were offered in a confidential community setting, as well as how likely they thought a family member (e.g., spouse, partner, child, or parent) would be to participate in such services. They were also asked whether they had already received help from a mental health professional, defined as a "counselor, clergy member, doctor, etc", and if not, they were asked the reason. The survey was pilot tested with twelve National Guard members who were not part of the study population. Information from the pilot testing was used to refine the survey.

Results

A total of 532 subjects completed the survey – 292 had been deployed to Iraq, 165 had not been deployed, and 75 had been deployed elsewhere (Hurricane Katrina, the Persian Gulf, Bosnia, Afghanistan, Guantanamo Bay, Vietnam, and Kosovo). There were not sufficient numbers of veterans from any of these other sites to analyze their data separately or draw conclusions about their mental health issues. Therefore, results for all deployments other than Iraq were analyzed as a group. Among those who had been deployed to Iraq, the majority (87.7%, n=254) had returned between February 2005 and April 2005, and thus had returned approximately one year prior to survey administration. Of the remaining Iraq veterans, 10.0% (n=29) had returned between February 2004 and April 2004, while 2.3% (n=7) had returned in February 2006 and March 2006. Six Guard members (2.1% of those who had been deployed to Iraq) had been deployed twice to Iraq.

Demographic characteristics of the three groups of Army National Guard members were similar (Table 1). The vast majority (94.2%, n=499) of all Guard members were white, with no significant racial or ethnic differences between groups. Of the Army National Guard members who had been deployed to Iraq, 26% were over 40 years of age; 67.7% had a least some college education, while 13% had at least a bachelor's degree.

Table 1. Characteristics of National Guard Sample

	Iraq veterans (n=292)	Other deployment (n=75)	Not deployed (n=165)	Iraq veterans- Army ‡
	%	%	%	
Male†	92.2	89.4	82.8	
Married/partnered	65.2	66.7	53.3	
Have children	61.8	73.3	50.9	
Age:				
18-29	42.1	26.7	46.7	
30-39	31.4	41.3	18.2	
40+	25.9	32.0	34.5	
Education:				
Not high school grad	.3	2.7	2.4	
High school grad	30.3	30.7	36.4	
Some college	54.9	45.3	38.8	
Bachelor's degree	10.0	17.3	12.1	
Graduate degree	2.8	4.0	9.7	
Combat exposure:				
Saw dead bodies or body parts	72.4	49.3	----	95
Wounded or injured	11.0	4.0	----	14
Know someone who was killed or seriously injured	70.2	37.0	----	86
Sexually harassed or assaulted	2.8	1.3	----	
Went on combat patrol or other very dangerous duty	84.3	52.2	----	
Were under enemy fire	80.6	45.6	----	86
Surrounded by the enemy	31.8	15.9	----	
Saw someone hit by incoming or outgoing rounds	57.5	14.7	----	
Fired rounds at the enemy	33.3	20.0	----	77
In danger of being injured or killed (i.e., ambushed, near miss, pinned down, overrun, etc.)	79.2	38.8	----	
Had members of unit who were killed, wounded, or MIA	69.3	24.6	----	

† Gender distribution based on a 61% response rate (n=211)

‡ Reported by Hoge et al., 2004

Markedly high numbers of Army National Guard members who had been deployed to Iraq reported combat experiences, and substantially greater numbers of Iraq veterans than Guard members deployed elsewhere reported such experiences (Table 1). Approximately 81% of Iraq veterans had been under enemy fire, 70% knew someone who was killed or injured, and 79% had been in danger of being injured or killed. For comparison purposes, combat exposure data from a large population of Army veterans (Hoge et al., 2004) are also reported in Table 1. On the Combat Exposure Scale (CES), 35.4% of our population of Iraq veterans received scaled scores in the “moderate” range of combat and 21.9% scored in the “moderate-heavy” and “heavy” ranges of combat; overall, 57.3% of Iraq veterans experienced at least a moderate level of combat exposure. In comparison, only 15.3% of Guard members deployed elsewhere experienced this level of combat exposure - 8.5% scored in the “moderate” range and 6.8% scored in the “moderate-heavy” and “heavy” ranges of combat. A total of 19.7% of Iraq veterans and 8.0% of Guard members deployed elsewhere indicated that they were planning on leaving the military because of being deployed or concerns about being deployed.

National Guard members who had been deployed to Iraq reported significantly more current problems across a variety of life domains than those who had not been deployed or were deployed elsewhere (Table 2). High numbers of Iraq veterans reported significant relationship difficulties with their spouse or partner, as well as difficulty relating to civilian friends. Iraq veterans were significantly more likely than those who had not been deployed to report physical health concerns and difficulty relaxing and having fun in life. Job dissatisfaction and financial stress were more of a problem for Iraq veterans than for the other Guard members as well.

Table 2. Life Stress among Iraq Veterans

	Iraq veterans (n=292)	Other deployment (n=75)	Not deployed (n=165)
	% ¹	% ¹	% ¹
Physical health concerns or problems	33.9	27.4	20.0***
Not able to relax	40.1	35.6	26.1
Not having fun in life	34.5	28.8	24.3**
Stress in relationship with spouse/partner ^a	35.5	23.0	15.1***
Sexual concerns or problems	22.6	12.2	9.7**
Stress in relationship(s) with children ^{aa}	26.9	15.3	12.4***
Difficulty relating to civilian friends	33.4	16.4	12.1***
Workplace stress	43.8	34.2	30.9
Dissatisfaction with job	30.1	21.9	21.8
Job not available upon return from Iraq	9.3	-----	-----
Fired or laid off since returning from Iraq	6.9	-----	-----
Financial stress	44.2	38.3	37.6
Problems finding employment	15.1	19.1	15.2

***p<.01; **p<.001 (Pearson chi-square, 2-sided)

¹ Percent of subjects who responded “moderately”, “quite a bit”, or “extremely”

^a Among those who reported living with a spouse/partner

^{aa} Among those who reported that they had at least one child

Overall, 24.7% of Iraq veterans met conservative screening criteria for either Posttraumatic Stress Disorder, Major Depression, or Alcohol Abuse, compared with 11.0% of Guard members deployed elsewhere and 6.1% of Guard members who had not been deployed (p=.000). Results of the assessment of posttraumatic stress symptoms as measured by the Post Traumatic Stress Disorder Checklist – Military Version (PCL-M; Table 3) indicated a significantly higher prevalence of PTSD symptoms among Iraq veterans than Guard members deployed elsewhere or Guard members who had not been deployed. Most notably, Iraq veterans were significantly more likely than those deployed elsewhere to report hyperarousal and intrusive symptoms, such as flashbacks, hypervigilance, difficulty concentrating and being easily startled. The most frequently reported symptom among the Iraq veterans was anger and irritability, while having been deployed elsewhere did not increase the prevalence of this symptom over the levels reported by Guard members who had not been deployed. Large numbers of Iraq veterans also reported emotional numbing and feeling distant from others.

Table 3. Percentages of National Guard Who Reported Symptoms of, and Met Screening Criteria for Posttraumatic Stress Disorder, Major Depression, and Alcohol Abuse

	Iraq Veterans (n=292)	Other deployment (n=75)	Not deployed (n=165)	Iraq Veterans- population Army‡	National (approx %)
Posttraumatic Stress Disorder Symptoms:	%¹	%¹	%¹		
Repeated disturbing memories, thoughts, or images of a stressful military experience	26.3	11.9***	-----		
Repeated disturbing dreams of a stressful military experience	17.6	7.5*	-----		
Suddenly acting or feeling as if a stressful military experience were happening again	11.4	6.0**	-----		
Feeling very upset when something reminded you of a stressful military experience	21.2	10.4**	-----		
Having physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful military experience	19.0	7.5***	-----		
Being super alert or watchful or "on guard"	37.5	19.4**	-----		
Feeling irritable or having angry outbursts	43.6	19.7	16.4***		
Feeling jumpy or easily startled	35.3	18.1	13.4***		
Having difficulty concentrating	39.5	26.8	16.1***		
Trouble falling or staying asleep	36.0	28.2	27.2		
Feeling emotionally numb or being unable to have loving feelings for those close to you	31.1	16.7	11.3***		
Feeling distant or cut off from other people	30.4	23.9	12.7***		
Loss of interest in activities you used to enjoy	31.1	25.4	19.7		
Avoiding thinking about or talking about a stressful military experience or avoiding having feelings related to it	20.8	10.4**	-----		
Avoiding activities because they reminded you of a stressful military experience	15.6	10.4*	-----		
Feeling as if your future will somehow be cut short	16.3	9.0	-----		
PTSD (conservative definition; PCL-M >=50)	12.8	7.7	-----	12.9	2-4
Depression symptoms:	%²	%²	%²		
Little interest or pleasure in doing things	12.2	5.8	6.3*		
Feeling tired or having little energy	28.2	22.2	13.0***		
Trouble concentrating on things, such as reading the newspaper or watching television	20.3	8.4	8.2**		
Feeling bad about yourself - or that you are a failure or have let yourself or your family down	12.6	7.0	8.2		
Poor appetite or overeating	17.6	10.7	9.1		
Feeling down, depressed, or hopeless	12.5	8.5	10.0		
Trouble falling asleep or staying asleep, or sleeping too much	22.3	17.1	15.8		
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	8.7	7.0	6.9		
Thoughts that you'd be better off dead, or of hurting yourself	10.3†	6.0†	7.0†		4-6
Moderate to severe depression (PHQ-9 severity rating)	27.2	20.9	17.0**		13-16
Major Depression (significant social/occupational impairment ³)	7.2	4.3	4.8	7.9	4-9
Alcohol abuse symptoms:	%	%	%		
Have you used alcohol more than you meant to?	17.9	8.3	7.0**	24.2	
Have you felt you wanted or needed to cut down on your drinking?	20.4	15.5	8.6**	20.6	
Alcohol abuse problem (Yes to one or both items)	23.8	15.5	10.6*		
(Yes to both items)	14.8	8.5	5.3**		7.5

¹ Percent of subjects who responded "moderately", "quite a bit", or "extremely"

² Percent of subjects who experienced the symptom more than half the days in the last two weeks

³ Percent of subjects who responded "very difficult", or "extremely difficult"

*p<.05; **p<.01; ***p<.001 (Pearson chi-square, 2-sided)

† Percent of subjects who experienced this symptom at least several days in the last two weeks

‡ Hoge et al., 2004

Significant group differences were also seen among individual items on the PHQ-9 (Table 3). Relative to Guard members who were not deployed or deployed elsewhere, Iraq veterans reported less interest or pleasure in doing things, and greater difficulty with energy and concentration. Suicidal thoughts were reported by 10.3% of Iraq veterans, 6.0% of Guard members deployed elsewhere, and 7.0% of Guard members who had not been deployed. Overall, 8.0% of the Iraq veterans reported that their symptoms of depression made it at least somewhat difficult to function at home, at work, or with other people, vs. 4.9% of Guard members deployed elsewhere and 2.2% of Guard members who had not been deployed ($p=.000$).

Among Iraq veterans, 23.8% screened positive for alcohol abuse (at least one positive response on the two-item screen), vs. 15.5% of Guard members deployed elsewhere and 10.6% of Guard members who had not been deployed. One in five Iraq veterans (20.4%) reported that they wanted or needed to cut down on their drinking, compared to 15.5% of Guard members deployed elsewhere and 8.1% of those who had not been deployed ($p=.006$). For comparison purposes, data from a recent study of Iraq veterans in the Army are also reported in Table 3 (Hoge et al., 2004), as are reported national figures for the incidence of PTSD, Depression, and Alcohol Abuse.

Overall, 30.3% of Iraq veterans felt their service was very appreciated by Iraqi civilians, 51.4% felt that their service was moderately appreciated and 18.2% felt that it was not appreciated. In contrast, 61.3% of Iraq veterans felt their service was very appreciated by civilians in their home communities, with an additional 31.6% indicating that they felt moderately appreciated and only 7.1% indicating that they felt their service was not appreciated by civilians in their home communities.

For all groups, relatively small percentages of Guard members indicated that they had received help from a mental health professional for concerns such as those listed on this survey. Only 15.4% of Iraq veterans indicated that they had sought help; similarly, 15.1% of Guard members deployed elsewhere and 13.9% of Guard members who had not been deployed indicated that they had sought help from a mental health professional. Among Guard members who had not sought help, 62.8% of Iraq veterans indicated that they felt they did not need any help, vs. 58.1% of Guard members deployed elsewhere and 83.8% of Guard members who had not been deployed.

Percentages of Iraq veterans who indicated at least a moderate likelihood of participating in confidential community services are presented in Table 4. Services that veterans were most interested in participating in included support groups with other veterans (32.2%), individual counseling (31.2%), education regarding war zone stress (31.2%), education regarding the readjustment process (29%), anger management skills training (28.5%), couples' communication skills training (28.4%) and couples/marital counseling (25.7%). Similar numbers were seen for Iraq veterans' perceptions of the likelihood that a family member would participate in services (Table 4). The greatest level of interest was in couples' counseling (29.0%). No significant differences were seen among family counseling, individual counseling, support groups, and education regarding readjustment.

Table 4. Iraq veterans' self-reported likelihood of participating in confidential community services (n=292)

Type of service	"Slightly likely" %	"Moderately likely" %	"Quite likely" or "Extremely likely" %
Education regarding the readjustment process	26.0	20.5	8.5
Education regarding war zone stress	26.7	22.6	8.6
Support group with other Iraq war veterans	23.6	20.9	11.3
Individual counseling	23.6	16.8	14.4
Employment counseling	15.8	15.8	7.9
Anger management skills training	19.9	16.1	12.4
Alcohol or drug counseling	13.0	7.9	4.1
Sexual harassment/assault counseling	11.6	7.5	1.7
Couples'/marital counseling	16.8	16.1	9.6
Couples' communication skills training	16.4	17.5	10.9
Parenting skills training	16.4	13.4	5.5
Family counseling	16.8	12.0	9.3
Linking together with other families of veterans	19.9	14.0	6.5
Family weekend workshops	18.2	9.9	6.9
<u>Services for a family member²</u>			
Support group for family members of veterans	23.8	17.2	8.3
Individual counseling	19.7	15.2	9.6
Education regarding readjustment issues	18.3	16.9	8.3
Family counseling	19.0	16.6	9.3
Couples'/marital counseling	17.9	15.5	13.5

Note. Response format: not at all likely, slightly likely, moderately likely, quite likely, extremely likely

² Iraq veterans' perceived likelihood that a family member would participate in these confidential community services

Comments

To our knowledge, this is the first report of the prevalence of mental health problems among members of the Maine Army National Guard deployed to Iraq. This study investigated a population of active National Guard troops, approximately half of whom had been deployed to Iraq and had returned at least a year prior to being assessed. We found a number of highly significant differences between Guard members who had been deployed to Iraq and those who had not been deployed to Iraq on important psychiatric and behavioral variables. Our results indicate that members of the Maine Army National Guard who had been deployed to Iraq had a higher self-reported incidence of PTSD, Depression, and Alcohol Abuse, and that 25% met conservative screening criteria for at least one of these disorders. The most prevalent psychological symptoms involved hyperarousal (e.g., agitation, anger, hyperalertness, difficulty concentrating) as well as emotional numbing, representing both aspects of the clinical picture of Posttraumatic Stress Disorder. These difficulties likely contributed to the markedly high reported rates of relationship problems, problems with children, difficulty relating to civilian friends, and workplace stress.

Members of the Maine Army National Guard who had been to Iraq reported a high level of combat exposure, with approximately 80% reporting that they had been shot at, had been in danger of being injured or killed, and/or had experienced very dangerous duty. This level of exposure had likely not been anticipated by many National Guard members as part of their service. It is interesting to note that our findings regarding mental disorders were

comparable to Hoge et al.'s (2004) findings among members of the Army and Marines following deployment to Iraq. Hoge et al. (2004) reported that 12.9% of Army personnel and 12.2% of Marines deployed to Iraq met the conservative definition of PTSD as measured by the PCL-M; results for PHQ-9 depression screening among the Army and Marines were also virtually identical to our findings (7.9% of Army and 7.1% of Marine personnel met the conservative definition of depression), as well as results of alcohol screening for Army personnel (approximately 22% screened positive). This lends validity to the present findings and suggests that National Guard members who have been deployed to Iraq do not differ significantly from members of the Army and Marines in terms of the degree to which they have been affected by war zone stressors.

The rates of mental disorders identified in the present study are substantially higher than those reported in other recent military conflicts. Studies of veterans of the Persian Gulf War have shown a prevalence of PTSD of between 2 and 10 percent (Iowa study, 1997; Kang et al., 2003); PTSD among veterans of Afghanistan has been reported to be approximately 6% (Hoge et al., 2004), while the base rate for PTSD in the general population has been reported to be approximately 2 to 4 percent (Narrow et al., 2002). Rates of current PTSD among Iraq veterans are most comparable to those reported among Vietnam veterans, which have been shown to be approximately 15% (Zatzick et al., 1997). Fortunately, in contrast to the experience from those who served in Vietnam, the majority of Iraq veterans in our study felt their service was very appreciated by civilians in their home communities.

While 25% of Iraq veterans had at least one potentially diagnosable mental health condition, and considerably greater numbers were suffering from significant mental health symptoms, only 15% had sought help from a mental health professional. In fact, there was not a significant difference between Iraq veterans and those who had not been deployed in terms of percentages who reported that they had sought help from a mental health professional. Of the Iraq veterans who had not sought help, 62.8% noted that the reason was that they felt they did not need help, suggesting that large numbers of Iraq veterans (37.2%) may perceive that they do need help and may potentially be open to receiving services under the right circumstances. When asked the likelihood of participating in confidential services in the community, approximately 30% indicated at least a moderate degree of likelihood of participating in such services. Additional research is needed to clarify ways of decreasing stigma and increasing openness and motivation among service members to participate in treatment for psychological difficulties.

Due to practical limitations on the length of the survey, we were not able to include a measure of response bias. The anonymity of the surveys likely decreased response bias; however, the culture of the military may have nonetheless contributed to a tendency toward underreporting or minimization of symptoms. To the degree that this was the case, the present results may underestimate Guard members' levels of distress or functional impairment.

Given the varying nature of work assignments and locations of activity between National Guard units in the war zone, we would hypothesize that rates of mental health issues would vary across units. Unfortunately, our subject population was not large enough to investigate differences between specific units, and thus the results represent an average across units.

We also were not able to assess the mental health status of specific groups of Guard members who had been deployed to sites other than Iraq due to insufficient numbers, and for the same reason we were not able to examine racial, ethnic or gender differences within the veteran population.

This study confirms the existence of significant psychological and behavioral problems among Iraq veterans approximately one year after their return from deployment. These findings have important implications for mental health care and for insuring that adequate resources are available to meet the needs of returning Iraq veterans. Failure to provide such services will have serious societal consequences, given the significant associations between mental disorders such as PTSD, Depression, and Alcohol Abuse, and social, physical, and occupational impairment (e.g., impairments in physical health, increased sick days and health care utilization, violence and criminality, impaired occupational functioning, and poorer functioning in family and social settings; Jordan et al, 1992; Carroll et al, 1985; Golding, 1996; Friedman & Schnurr, 1995; Kroenke, Spitzer, & Williams 2001). Increasing access to mental health services and decreasing barriers to receiving mental health treatment must become important societal priorities in order to prevent the destructive effects of untreated mental health problems among veterans.