

Post-Traumatic Stress Disorder and Service Utilization in a Sample of Service Members from Iraq and Afghanistan

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Objective: The purpose of this study was to evaluate levels of post-traumatic stress disorder (PTSD), depression, alcohol abuse, quality of life, and mental health service utilization among returnees from Operation Enduring Freedom and Operation Iraqi Freedom. **Methods:** One hundred twenty returnees, enrolled for health care at a midwestern Veterans Affairs medical center, completed questionnaires approximately 6 months after their return from deployment. **Results:** PTSD levels (12%) were consistent with previous research while problematic drinking levels were also elevated (33%). PTSD and, to a lesser degree, alcohol abuse were associated with lower quality of life in multiple domains, even when controlling for the influence of depression. Of those screening positive for PTSD, 56% reported using mental health services. Only 18% of those screening positive for alcohol abuse reported using such services. **Conclusions:** PTSD and alcohol problems are prevalent in Operation Enduring Freedom/Operation Iraqi Freedom returnees and associated with lower quality of life. Mental health service utilization is limited, even among returnees enrolled for Veterans Affairs health care.

Introduction

Recent research suggests that the wars in Iraq and Afghanistan pose substantial mental health challenges to American service members, mental health systems, and the public at large. Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) are protracted engagements with frequent surprise attacks in settings where it is difficult to distinguish enemies from civilians. Early work by Hoge et al¹⁻³ suggests that these conflicts are leading to high psychiatric distress rates among returnees including post-traumatic stress disorder (PTSD) and depressive symptoms. These reports also document that substantial proportions of returnees in psychological distress do not seek or receive mental health services.

Chronic combat-related PTSD leads to a host of long-term family and workplace problems.^{4,5} It is also comorbid with other psychiatric and physical disorders.^{6,7} PTSD treatments proven effective in other populations are less effective among those with chronic combat-related PTSD.⁸ The accompanying social, physical, and economic problems all too often cut veterans off from important social support and social incentives that otherwise would facilitate treatment seeking, compliance, and effectiveness.

Timely detection and intervention with returnees suffering from PTSD is thus a high priority. The U.S. Department of Veterans Affairs (VA) is making efforts to avoid past mistakes by

responding quickly and directly to the psychiatric difficulties among OIF/OEF returnees. VA facilities are attempting to give them priority in receiving medical and psychiatric care and to offer programs to increase resilience and provide early and effective treatment. To our knowledge, there are no published reports regarding the success of such programs. However, many returnees appear to be reluctant to seek mental health care, even if they are experiencing distressing psychiatric symptoms.¹

Low mental health service utilization is unfortunately common with PTSD across multiple trauma types and populations.^{5,9,10} Even within VA medical centers, which are typically informed and equipped to deal with post-traumatic stress, PTSD identification and treatment rates within general outpatient medical samples are low.¹¹ Hoge et al¹ found that 6.2% of Afghanistan returnees and 12.2 to 12.9% of Iraq returnees screened positive for PTSD using the Post-Traumatic Symptom Checklist (PCL).^{1,12} Rates for other psychiatric distress (depression or generalized anxiety) were between 6.9 and 7.4% for Afghanistan returnees and between 6.6 and 7.9% for Iraq returnees. However, among those screening positive for mental health problems, only 23% of Afghanistan returnees and 29 to 40% of Iraq returnees reported receiving any mental health services. A subsequent population-based study found rates of PTSD at 9.8% for Iraq and 4.7% for Afghanistan veterans, as well as 19.1 and 11.3% of Iraq and Afghanistan returnees screening positive for either PTSD, depression, suicidal ideation, interpersonal conflicts, or aggressive ideation.² This second study found rates of mental health service utilization of 30.1% for Iraq and 19.1% for Afghanistan returnees. However, only 48 to 56% of individuals specifically referred for mental health care after screening positive for mental health problems actually obtained such care.

An effort is underway to evaluate the mental health problems and service utilization of returnees enrolled at the Minneapolis VA Medical Center (MVAMC). Enrolled returnees are asked to complete questionnaires assessing trauma experiences, post-traumatic stress, other psychiatric symptoms, quality of life, and service utilization. This article is an initial report from this ongoing study. Returnees in this sample have been home at least 6 months longer than those surveyed by Hoge et al.^{1,2} Therefore, their rates of psychiatric distress and or mental health service utilization could be higher (in the case of delayed reactions) or lower (if some recovery has occurred). This report focuses on psychiatric distress levels (specifically PTSD, depression, and alcohol use), functional impairment, and service utilization. Based on the research discussed above, we expected to find elevated PTSD rates and low to moderate levels of mental health service utilization.

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Methods

Procedures

OIF/OEF returnees who enrolled for MVAMC care as they went through the process of deactivation (Guard and Reserves) or discharge (regular service) were contacted by telephone and asked to participate in a study of adjustment and reactions to deployment. Our sample more closely approximates a community sample than a clinical sample. Fewer than one-half had actually used any VA services at the time of recruitment into the study. At the request of the VA Institutional Review Board, we specifically excluded the very small group of veterans receiving VA mental health services (<2%) from recruitment. Those who agreed were sent a questionnaire, a cover letter explaining the study, and informed consent materials. They were called again to answer any questions about the study or the consent. They were given \$25 upon the return of their questionnaires. The study was approved by the institutional review board at the MVAMC.

Instruments

Participants completed measures of post-traumatic stress, depression, alcohol use, and quality of life. They also were asked about their use of mental health services before, during, and after deployment, including their use of psychotropic medications, individual therapy services, group therapy, marriage or family therapy, and debriefing. PTSD was assessed using the PCL,¹² a 17-item self-report questionnaire assessing each of the core symptoms of PTSD. The PCL has established validity and reliability.^{12,13} Following previous research, we used a cutoff of 50 to identify likely PTSD cases.¹ Depression was assessed using 7 items from the Beck Depression Inventory (BDI).¹⁴ The 7 items were chosen to reduce scale length and participant burden and were internally consistent in the present sample ($\alpha = 0.81$). Hazardous drinking was assessed using the Alcohol Use Disorders Identification Test (AUDIT)¹⁵ that assesses problematic drinking behavior with 10 items, and has an established cutoff for probable problem drinking of 8.^{16,17} Quality of life was assessed using the Medical Outcome Study Short Form-36 (SF-36).¹⁸ The SF-36 assesses quality of life in 8 domains with 36 multiple choice items. It is widely used and has established reliability and validity in medical and psychiatric groups.¹⁹ It has been used extensively to assess quality of life among those suffering from anxiety disorders, including PTSD.^{20,21}

Participants

Data collection began in February 2005. Since that time, 521 returnees enrolled at the medical center have been identified as OEF/OIF returnees who had come back within the 6-month time frame. We were able to contact 240 (46%) to request participation in a study of adjustment following deployment. Those we could not reach either had insufficient or inaccurate contact data (e.g., telephone numbers) or failed to return repeated phone calls. Of the 240 contacted, 220 (92%) agreed to participate and were mailed surveys. Thus far, 120 (55%) have returned completed surveys. The majority served in the Army (91%, with 19% of soldiers from the regular Army, 49% in the Army National Guard, and 32% from the Army Reserves). The others were in the Marines (5%), Air Force (2%, with 33% serving

in the Air National Guard and 66% in the regular Air Force), and Navy (2%, 50% from the Reserves and 50% from regular service). Self-identified military roles were combat (34%), combat support (50%), or service support (15%). All were deployed as part of OIF/OEF and served in Iraq (64%), Afghanistan (12%), or elsewhere in the Persian Gulf (24%). Their median age was 27.5 years (range, 19–54). The majority were male (86%). Twelve percent reported no college education, 49% reported some college, 29% reported a 2- or 4-year degree, and 10% reported a graduate degree. Fifty-four percent were single, 38% married, and 8% divorced. As noted above, at the request of a human subjects committee, we did not recruit returnees who were currently enrolled in mental health services at this VA in our recruitment. Thus, this is a sample of returnees enrolled for care at the VA but not receiving mental health services from VA clinics at the time of the study.

Results

The means for the three main symptom measures were: AUDIT, 6.48 (SD = 5.26); PCL 35.00 (SD = 13.24); and BDI 2.63 (SD = 2.69). Established cutoffs were used for classifying participants into PTSD-positive and -negative groups on the PCL¹ and hazardous drinking positive and negative groups on the AUDIT.¹⁵ As only a subset of items from the BDI was used in this survey, cutoff scores were not available for classifying participants into groups based on depression. Three respondents failed to provide complete data on either the PCL ($n = 2$) or the AUDIT ($n = 1$). Percentages below are based on the subset of 117 respondents with complete data. Overall, 39% screened positive for problems with alcohol or PTSD. Seven (6%) screened positive for problems with PTSD only, 32 (27%) for problems with hazardous alcohol use only, and 7 (6%) for problems with both. PTSD symptoms significantly correlated with alcohol use levels ($r = 0.32$, $p < 0.001$), and depressive symptoms ($r = 0.61$, $p < 0.001$). The correlation between depressive symptoms and alcohol use was lower but also significant ($r = 0.19$, $p < 0.05$).

Associations between positive screens for hazardous drinking or PTSD and quality of life are shown Table I. PTSD-positive returnees also reported less quality of life (more impairment) in the areas of emotional role limitation, energy, emotional well-being, social functioning, physical role limitation, and general health. In contrast, hazardous drinking was associated with lower quality of life in emotional well-being only. When depression's overlap with PTSD was statistically controlled (using analysis of covariance), the differences between PTSD-positive and -negative groups remained significant in social functioning ($F(1,114) = 7.77$, $p < 0.01$), and emotional well-being ($F(1,114) = 4.55$, $p < 0.05$).

Mental health service use by PTSD and hazardous drinking status is shown in Table II. In the sample as a whole, some form of mental health care since returning home was reported by 62%. This included medication (11% of the sample), individual therapy (13%), group therapy (12%), marital or family therapy (10%), chemical dependency treatment (2%), and/or briefings/debriefings (51%). Many reported receiving more than one type of service. The reported frequency of briefings/debriefings is likely an underestimate, as follow-up contacts with many returnees suggest that they did not realize that certain outprocessing sessions they underwent upon return (which in fact

TABLE I
MEANS AND SDS ON QUALITY OF LIFE SUBSCALES (SF-36) BASED ON PTSD AND HAZARDOUS DRINKING CLASSIFICATION

	Mean (SD)	Mean (SD)	Test Statistic (df)
	PTSD negative	PTSD positive	
Emotional well-being	70.30 (16.32)	48.57 (24.45)	$t(116) = 4.28, p < 0.001$
Energy	54.66 (19.47)	37.50 (22.08)	$t(116) = 3.05, p < 0.01$
General health	66.01 (20.78)	47.86 (23.18)	$t(116) = 3.03, p < 0.01$
Pain	71.08 (23.61)	58.21 (24.50)	$t(116) = 1.91, NS$
Physical functioning	85.26 (21.16)	79.17 (18.10)	$t(116) = 1.03, NS$
Emotional role limitation	76.38 (34.50)	45.24 (40.52)	$t(115) = 3.10, p < 0.01$
Physical role limitation	76.46 (37.02)	50.00 (42.74)	$t(115) = 2.46, p < 0.05$
Social functioning	75.72 (21.53)	46.43 (27.05)	$t(116) = 4.63, p < 0.001$
	Hazardous drinking negative	Hazardous drinking positive	
Emotional well-being	70.47 (17.15)	62.60 (20.86)	$t(117) = 2.20, p < 0.05$
Energy	54.68 (20.45)	49.75 (19.11)	$t(117) = 1.27, NS$
General health	65.82 (22.41)	60.38 (19.75)	$t(117) = 1.30, NS$
Pain	69.65 (25.52)	67.63 (22.15)	$t(117) = 0.43, NS$
Physical functioning	83.45 (23.26)	85.68 (16.41)	$t(117) = -0.54, NS$
Emotional role limitation	71.31 (37.64)	74.36 (34.59)	$t(116) = -0.43, NS$
Physical role limitation	71.47 (40.44)	73.75 (37.96)	$t(116) = -0.29, NS$
Social functioning	73.58 (24.84)	66.25 (24.71)	$t(117) = 1.52, NS$

NS, not significant.

TABLE II
SIX-MONTH PREVALENCE RATES OF SERVICE UTILIZATION BY PROBLEM STATUS

	PTSD -	PTSD +	Hazardous Drinking -	Hazardous Drinking +
Medication	0.08	0.39 ^a	0.12	0.08
Individual therapy	0.09	0.46 ^b	0.12	0.13
Group therapy	0.10	0.31 ^c	0.13	0.11
Marital/family therapy	0.09	0.15	0.11	0.08
Chemical dependency treatment	0.02	0.00	0.01	0.03
Briefing or debriefing	0.49	0.69	0.53	0.50

All χ^2 statistics had $df = 1$ and were tested with Fisher's exact test due to low cell frequencies. All comparisons not reported were nonsignificant.

^a $\chi^2 = 10.78, p < 0.01$.

^b $\chi^2 = 13.98, p < 0.01$.

^c $\chi^2 = 4.66, p < 0.10$.

were debriefings) would be described by that label. A positive PTSD status was significantly associated with use of psychiatric medications and individual therapy and there was a trend ($p < 0.10$) for higher group therapy participation. Hazardous drinking was not associated with greater mental health service use, including chemical dependency treatment.

Logistic regression was used to examine the relative contributions of depression, post-traumatic stress, and alcohol use in predicting service utilization. Briefing/debriefing use was not included in this analysis due to the ambiguous nature of the term "briefing/debriefing" and because such mandatory debriefings do not represent voluntary access to mental health care. Those receiving any individual, group, or medication treat-

ment for mental health since returning from deployment were coded as 1; all others were coded as 0. Independent variables were the total scores on the measures of depression, PTSD, and hazardous alcohol use. The resulting regression model correctly classified 77.2% of cases, which was significant ($\chi^2 = 9.23, df = 3, p < 0.05$). Of the three predictors, only depression was independently associated with mental health service use (Wald statistic = 4.14, $p < 0.05$).

Discussion

This study examined mental health functioning, quality of life, and mental health service utilization in OIF/OEF returnees enrolled for medical care at a large midwestern VA medical center. PTSD prevalence, as suggested by the PCL, was 12%, which is consistent with other reported rates from 6 to 12%.¹⁻³ In previous reports, higher rates of PTSD (10–12%) were found in samples of personnel who served in Iraq and lower rates in those who served in Afghanistan.¹ Thus, the 12% rate of PTSD in this broader sample of mixed OEF and OIF returnees may be seen as high until one considers that this is a volunteer sample drawn from service members enrolled for VA care. Higher levels of distress may predict VA care enrollment and/or an increased likelihood of volunteering for a study such as ours, despite the fact that less than one-half had actually received any VA care and that we excluded those few veterans receiving VA mental health care. The small group excluded due to current VA mental health service involvement made up less than 2% of those considered for contact and is unlikely to have significantly impacted the rates reported here. In any case, these results highlight the mental health difficulties of a group of participants who were not actively receiving mental health care through the VA despite any symptoms they may have been having. Rates of risky drinking, not assessed in earlier reports, were relatively high, with 33% of respondents reporting levels that are classified as "hazardous"

using the AUDIT. This exceeds what is typically found with this instrument in other veteran samples (e.g., 17% in one study²²) and the rates of "high-risk drinkers" (2.6%) found in a large scale study of active duty military personnel.²³

Mental health service use was somewhat higher than in previous reports. Among those screening positive for PTSD, 56% reported receiving individual therapy, group therapy, and/or psychiatric medication since their return. The higher service utilization rates may be due to the sampling strategies mentioned above, but could also reflect the longer time that these returnees have been home. Service utilization rates for risky drinkers were much lower, with only 18% reporting receipt of any mental health services, and only 3% reporting receiving chemical dependency treatment. The logistic regression analysis indicated that it is the general distress and negative effect expressed through depressive symptoms, rather than PTSD per se, that independently led to seeking services. This suggests that those suffering from PTSD symptoms without the negative affect and accompanying symptoms of depression may be less likely to seek services.

This is the first study we are aware of that examined the impact of depression, alcohol problems, and PTSD on quality of life in a sample of OIF/OEF returnees. As expected, PTSD was associated with reported reductions in quality of life across several domains, including general health, energy, emotional well-being, emotional role limitation, physical role limitation, and social functioning. In contrast, risky drinkers reported lower levels of quality of life only in the area of emotional well-being. Presumably PTSD, with its wide ranging and immediate impact in the affective, cognitive, and interpersonal realms is more limiting, at least initially, than risky drinking. When the association between PTSD and depression was statistically controlled, PTSD was still independently associated with difficulties in social functioning, emotional role limitation, and emotional well-being. These findings are significant in suggesting that the elevated PTSD levels are associated with functional impairments that could benefit from psychiatric or psychosocial treatments.

These early findings indicate several directions for follow-up work. Clearly, returnees' problems may extend beyond PTSD into areas such as depression and alcohol abuse. The scope of returnees' problems needs to be defined broadly. We need to identify the services being provided for them and their effectiveness. Although studies such as this can document the presence of self-reported distress at the time of assessment, they cannot determine the course and long-term impact of reported symptoms. Thus, it is unclear at this time how many of those reporting PTSD symptoms now will continue to report such symptoms in 6 months or 1 year and to what extent treatment will improve outcomes over time. It is also unclear, although likely, whether comorbid alcohol use early on will lead to worse outcomes, with or without treatment, for those with PTSD. Longitudinal data with assessment at multiple time points in multiple domains of functioning will allow exploration of such important questions.

This study demonstrates that a substantial portion of those screening positive for PTSD (56%) are using some form of mental health service. A separate and equally important question is to what extent such services reduce PTSD symptoms and the ac-

companying impairments. Future studies can explore the types and effectiveness of services used by OIF/OEF returnees in psychiatric distress. Clearly, work is needed to develop and investigate methods for engaging distressed returnees in effective services. Finally, more work is needed to examine environmental factors that may affect postdeployment distress and impairment, such as family interactions, social support, and societal acceptance.

The representativeness of this volunteer sample is unknown and we cannot make direct inferences regarding adjustment to those who have not enrolled for VA care or those who did not return questionnaires. The fact that rates of self-reported PTSD are comparable to previous surveys^{1,2} suggests our sample is representative in terms of post-traumatic stress. Regardless, these findings do underscore the ongoing need for evaluation, treatment, and outreach to returnees dealing with post-traumatic, depressive, and alcohol-related problems.

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