

Article

Family perceptions of post-deployment healthcare needs of Iraq/Afghanistan military personnel

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ABSTRACT

Nearly 40 000 service members returning from Iraq and Afghanistan have suffered traumatic injuries, with over 300 000 at risk for post-traumatic stress disorder (PTSD) or other psychiatric problems. These veterans face numerous post-deployment health concerns, sharing substantial burdens with their families. Although many rely upon community-based health care, little is known about how these individuals present at family medicine clinics for perceived medical and psychological issues. We surveyed 347 patients during visits at six clinics, and respondents reported whether they, a family member or a close acquaintance had been deployed since 2001. Patients identified traumatic military experiences, plus any attributable health or social problems. The mean patient age was 47.5 years, with 71%

women and 55% Hispanic individuals. Nearly one-quarter reported family members serving overseas while 52% knew someone deployed. Significant events included nearby explosion (21%) or combat injury (9%), along with a variety of other incidents. Among the half of individuals perceiving significant health or social ramifications, the most prevalent consequences were PTSD, depression and alcohol abuse. Divorce or marital problems were noted by 13%, while many reported employment, legal or other difficulties. This study offers insights into post-deployment needs of military personnel and subsequent problems reported by family members. A high prevalence of traumatic combat events translated into serious health needs, plus social disruptions for veterans and their loved ones. As the long-term

problems disclosed by returning service personnel continue to ripple across community clinics and other health systems, effective treatment planning mandates coordinated attention from multiple providers and service organisations.

Keywords: combat disorders, community health veterans, Iraq War 2003, OEF, OIF, social networks

Introduction

The US military presence in Iraq and Afghanistan has continued to intensify since the conflict began in 2001. Nearly two million American service members have been deployed to Operation Enduring Freedom and Operation Iraqi Freedom, or OEF and OIF.¹ Even prior to recent escalations, 650 000 deployed troops have returned to the USA,² with over one million soldiers now completely separated from Department of Defense (DoD) service, making the transition back into civilian life.³ Further complicating their adjustment process and ongoing healthcare challenges, OEF/OIF veterans are generally older than military personnel in previous conflicts, on average five years older than Vietnam era soldiers, and include a high number of individuals with pre-existing medical conditions and risk factors for chronic illness.^{3,4} Although wartime mortality rates have been dramatically reduced, approximately 42 000 of these new veterans have been wounded in combat,⁵ many with severe traumatic injuries requiring prolonged medical treatment and rehabilitation care.

In addition to severe combat trauma injuries and non-battle wounds or burns requiring substantial rehabilitation needs,^{6,7} traumatic brain injury (TBI) is also common in OEF/OIF veterans,⁸ translating into chronic pain problems, poor cognition and lower functional status.⁹ TBI may be compounded by PTSD comorbidity,¹⁰ contributing to a high suicide risk in recently deployed veterans.¹¹ Furthermore, the risk of developing epilepsy after TBI has been estimated at between 25% and 50%,^{12,13} an incidence rate up to three times that found in civilians.¹⁴

Perhaps more significant for family practitioners, the psychological needs of OEF/OIF veterans have been well documented since the seminal work of Hoge and colleagues, who found prevalence rates of PTSD, depression and anxiety ranging up to 17%.¹⁵ Such mental health conditions lead to substantial healthcare utilisation, work absenteeism and social problems.¹⁶ More recent efforts found overall mental illness prevalence rates of 37%, with PTSD diagnoses increasing seven-fold in the two years following

the Iraq invasion.¹⁷ Compared to all Veterans Health Administration (VA) patients, the rate of alcohol abuse (27%) in OEF/OIF veterans is more than double.¹⁸ Mental health disorders frequently exacerbate chronic medical conditions, such as cardiovascular disease,¹⁹ and substantially increase overall treatment needs compared to the needs of veterans without psychological conditions.⁴ Over 40% of military reservists also screen positive for a variety of mental health disorders,²⁰ contributing to poor intrapersonal and social functioning.²¹ Unfortunately, the increasing number of women veterans returning from Iraq and Afghanistan experience high rates of depression and military sexual trauma,^{22,23} and spouses of deployed personnel suffer considerable domestic abuse.²⁴

Yet despite substantial ongoing health care and other needs, the transition rate of recently discharged military personnel into the VA system remains very low. Among veterans of the first Gulf War diagnosed with severe mental illness between 1993 and 1996, only 52% had received VA mental health services by 1998.²⁵ Although expanded policies have increased post-deployment eligibility, only 24% of traumatically injured personnel who were medically discharged between 2003 and 2006 received any VA health care within the first three years.²⁶ This combination of significant morbidity and low transition rates suggests that veterans not seeking care within the VA may be turning to community providers.

Unfortunately, far less is known about the experiences and potential impact of post-deployment issues upon family and larger community networks. Family members of deployed personnel have also been found to be at increased risk of depression, substance abuse and other mental health problems during and after deployments,^{27,28} not to mention potentially serious marital or relationship troubles, complicating the process of reintegration into family life.²⁹ Children of military personnel exhibited greater anxiety and more behavioural or emotional problems three years after a parent was deployed, suggesting that detrimental effects to family cohesion may be quite extended.³⁰ While family members are largely ineligible for VA care and therefore more likely to seek care in the community, little evidence documents the healthcare issues of these

patients when seen by primary care providers. The same is true for the over 120 000 civilian contractors deployed in Afghanistan and Iraq. A neglected population typically not eligible for either DoD or VA benefits, as of early 2007 over 4100 contractors had been injured or killed while serving in OEF/OIF combat regions.³¹

Given these potentially complex healthcare needs, the objective of this study was to document the complex post-deployment health needs of veterans (as perceived by their families or social networks) in non-VA primary care clinics, with particular attention to issues surrounding OEF/OIF experiences. As little evidence exists concerning the treatment needs and care being offered to these individuals in non-VA health settings, such findings will inform both the VA and community physicians regarding the prevalence of multiple health problems among their patients as reported by themselves or family members. We believe this is one of the first studies to assess the health and psychosocial challenges presented in community family medicine settings.

Methods

Setting and patient population

The region where study data were collected is home to several military bases, as well as both national guard and reserve units; the local VA hospital and its outpatient facilities have provided care to over 45 000 unique OEF/OIF patients since 2002. Community providers in this area undoubtedly treat a large population of service members, veterans and family members affected by recent deployments. For this naturalistic cohort, a convenience sample of 347 consecutive adult patients was recruited from six community clinics, with the number of participants ranging from 41 to 73 across sites. These urban and suburban practices, all members of the practice-based South Texas Ambulatory Research Network (StarNet), serve a diverse group of primary care patients, in terms of demographic characteristics, insurance coverage and healthcare needs. Given their representative population of community patients, StarNet clinics (60 in total) have frequently participated in research projects targeting a range of chronic health conditions.³²

Data source and study design

Data were collected in the summer of 2009 by a research assistant who spent at least three to four

days in each clinic. Upon being approached in the waiting room and provided with details about the study, patients were invited to complete an anonymous self-administered survey; no personal identifying information was collected at any time. Inclusion criteria were adults over 18 or adult parents of patients attending the clinics who were able to self-administer either an English or translated Spanish language survey. In addition to basic demographics, the brief survey instrument created for this study solicited information on military service history, with particular attention to time spent in Iraq/Afghanistan since the start of the current military conflict in 2001. We asked the respondents about their personal experiences in OEF/OIF combat theatres, or to report on the experiences of family members, friends and co-workers.

In addition to asking about the service capacity (e.g. active duty, reserve, contractor etc.) and length of deployment, survey items sought information concerning exposure to potentially traumatic events such as combat wounds, witnessing a nearby explosion, suffering a traumatic brain injury, other injuries or accidents and the development or worsening of a physical illness, such as diabetes or heart disease. Next, respondents were asked about their perceptions of subsequent post-deployment issues, including medical or mental health conditions, along with any psychosocial disruptions: depression, PTSD, alcohol or drug abuse, divorce or other relationship difficulty, unemployment problems, disability or insurance claim denials, job discipline or legal issues and other self-reported problems. Individuals were also asked whether the reason for this clinic visit was related to deployment health issues, or if they had ever disclosed OEF/OIF experiences to their doctor. Local institutional review board approval was obtained prior to study initiation and recruitment.

Data analysis consisted of descriptive statistics summarising the prevalence of deployment experiences among community clinic patients, including exposure to traumatic events and resulting health problems. Proximity of exposure was defined according to the closeness of familial or social relationships of each patient to the deployed individual. These increasingly broader categories were: 1) personal experiences (i.e. patient was deployed to Iraq/Afghanistan); 2) immediate family member (spouse, parent, children, sibling of deployed individual); 3) extended family (including uncle/aunt, cousin, in-laws, niece/nephew, other generations); and 4) broader social network (e.g. friends, neighbours, co-workers etc.). Analysis and a summary of post-deployment health experiences were provided for the broadest, most inclusive final group. Exploratory bivariate analysis then examined the association between patient sociodemographic characteristics (age,

gender, marital status, ethnicity and education) and the variables describing deployment status, traumatic events and subsequent physical, psychological or social problems.

Results

The total study population ($n=347$) was slightly younger, but otherwise well representative of patients seeking care at community clinics in this area.³² One hundred and three patients declined participation (two out of three women) giving a refusal rate of 23%. The average age was 47.5 (sd 15.5), with the cohort defined by a high proportion of women (71%), Hispanics (56%), and married individuals (65%), with over half having obtained some college education. Fourteen percent had themselves served in the military, and only two patients (0.6%) reported personal military service or other official duties in Iraq/Afghanistan since 2001. The prevalence of OEF/OIF service experience increased steadily as the degree of family or social network expanded, from 12% stating an immediate family member was deployed, to 31% when extended family members were also included. Finally, when respondents who shared information concerning a close friend or other acquaintance were included, over half of the study participants (181, or 52%) personally knew someone previously deployed or still serving in OEF/OIF combat regions. Therefore, the following results primarily reflect the experiences and health issues of veterans as described by their social support networks rather than personal accounts of veterans themselves. Over 80% of those deployed were active duty personnel, with the large majority spending one to two years or more overseas. See Table 1 for full details on patient characteristics, including OEF/OIF deployment information.

Examining the exposure to potentially traumatic events within the 181 deployed individuals, we observed that a high prevalence (35%) had been exposed to a serious combat incident. Witnessing a nearby explosion was the most common incident, an event reported by 38 people (21% of exposed denominator). Combat injuries and motor vehicle accidents or other non-combat injuries were reported by 9% and 6%, respectively, followed by several individuals claiming new or deteriorating illnesses related to a loved one's deployment. Although only two individuals reported suffering traumatic brain injuries, 13 respondents (7%) listed multiple serious combat events suffered in Iraq or Afghanistan (see Table 2).

When asked about the direct consequences of OEF/OIF service, respondents also perceived a significant amount of post-deployment health issues, psychological distress and problems of social disruption. As presented in Table 3, these ramifications affected 44% of all deployed individuals ($n=101$), most frequently psychological problems (depression or PTSD) and divorce or other relationship issues, each noted by 23 patients (13%). As before, experiencing multiple post-deployment health concerns was quite prevalent (9%); other frequently reported problems included employment difficulty (6%) and either alcohol or drug abuse (4%), along with a variety of other concerns. In separate questions, 33 (18%) patients also stated that the reason for their current clinic appointment was specifically due to deployment issues, while ten (6%) actually disclosed OEF/OIF experiences to their doctor.

Finally, the analysis of bivariate differences revealed a couple of significant associations between demographic factors and either deployment status, exposure to combat events, or post-deployment health issues. Notably, Hispanics were significantly more likely to report knowing someone who had been deployed (56% compared to 44% for other individuals), while these individuals more frequently experienced subsequent health issues (47% versus 39%, both $p<0.01$); the latter was particularly true for depression/PTSD and employment problems. In addition, respondents with lower educational attainment (no college) were slightly more likely to know someone deployed (53% vs 47%, $p<0.05$) and reported a greater prevalence of overall health concerns (45% vs 41%, $p<0.1$). No ethnic or educational differences were observed with regard to the risk of experiencing a traumatic event, nor were there any effects of marital status or gender on knowing someone who was deployed, experiencing a traumatic event, or suffering health or social problems.

Discussion

This descriptive study provided a rare glimpse into the post-deployment experiences and health needs of patients presenting in community primary care clinics. Although only a couple of study patients had actually been deployed in OEF/OIF regions themselves, over half of our cohort knew someone who served in these combat regions. Nearly 70% of respondents described deployments lasting for at least a year, representing a potentially significant burden on spouses, children, caretakers, friends or other members of the social support network. Furthermore, the extent of traumatic events experienced by those

Table 1 Descriptive information on study population ($n=347$)

Patient characteristic	Mean (sd) n	%
Age, mean	47.5 (15.5)	–
Women	232	66.9
Race/ethnicity ^a		
White	136	39.2
Hispanic	193	55.6
African-American	14	4.0
Other	16	4.6
Marital status		
Single/never married	64	18.4
Married	210	60.5
Divorced/separated	55	15.9
Widowed	18	5.2
Health status, very good or excellent	147	42.3
Education		
<High school	30	8.6
High school graduate or GED	60	17.3
Some college or college graduate	187	53.9
Graduate school or degree	70	20.2
OEF/OIF exposure category		
Patient (first-person experience)	2	0.6
plus immediate family members	35	8.0
plus extended family members	103	23.6
plus friend, neighbour, co-worker, other	181	52.2
OEF/OIF service capacity ^{a,b}		
Active duty	148	81.7
Reserve or National Guard	36	19.9
Civilian contractor, journalist, other	15	8.3
Total time spent deployed for OEF/OIF ^b		
<6 months	7	3.9
6 months to 1 year	51	28.2
1–2 years	78	43.1
>2 years	45	24.8

^a Total more than 100%, since several patients selected multiple categories

^b Of those reporting time deployed in Iraq/Afghanistan ($n=181$), including experiences shared by either the patient, or their family members/extended social network

Table 2 Prevalence of self-reported exposure to traumatic combat events, among all deployed individuals ($n=181$)

Exposure or traumatic event	n^* (%)
No reported injury or event	117 (64.6)
Nearby explosion	38 (21.0)
Combat injury	17 (9.4)
Other injury or accident	10 (5.5)
Development or worsening of physical illness	6 (3.3)
Traumatic brain injury	2 (1.1)
Multiple events reported	13 (7.2)

* Total more than 100% as patients could report multiple events

Table 3 Prevalence of self-reported post-deployment health or social problems, among all deployed individuals ($n=181$)

Exposure or traumatic event	n^* (%)
No health or other problem reported	101 (56.4)
Depression or PTSD	23 (12.7)
Divorce, separation, or relationship problems	23 (12.7)
Employment problems	10 (5.5)
Alcohol or drug abuse	7 (3.9)
Legal problems	2 (1.1)
DoD/VA/disability claim or insurance denial	1 (0.6)
Other health issue or problem	13 (7.2)
Multiple problems reported	17 (9.4)

* Total more than 100% as patients could report multiple health or other problems

deployed and the high prevalence of associated health and social problems suggest that tremendous chronic treatment needs may be presented to primary care providers who are perhaps not specifically trained or experienced in the multiple medical and psychological sequelae stemming from wartime service. A sizable number of individuals in this cross-

sectional cohort described explosions or combat injuries, and multiple events. The high prevalence of perceived depression or PTSD, divorce and other health or social problems associated with deployment is rather striking within this clinical sample already engaged in primary care treatment.

Following deinstitutionalisation efforts in the mid-1990s,³³ the VA greatly expanded its outpatient clinics into community settings, with documented success in terms of access, quality of care and patient satisfaction.³⁴⁻³⁷ However, despite significant efforts to ensure a seamless transition for recent 'wounded warriors', many OEF/OIF veterans are nevertheless not seeking care within the VA system. Hence, a substantial number of veterans and their families will continue pursuing care within community health systems. In a companion study exploring the community providers' perspective, these family physicians reported treating a high number of recently discharged veterans and their families, observing numerous significant health problems. They also expressed a clear desire for more medical education in appropriately caring for their deployed patients, particularly in the areas of PTSD and the lingering effects of trauma injuries.³⁸

The relatively high number of clinic patients sharing observations regarding PTSD and other psychological problems is notable. Combined with severe traumatic wounds, burns and other issues such as substance abuse, such mental health concerns present a challenge to the primary care provider, potentially impeding effective treatment. While clinicians routinely provide excellent care for medical issues, the presence of serious psychiatric problems represents a unique challenge. Even within the VA, with its integrated system and specially trained clinicians, less than 10% of OEF/OIF veterans diagnosed with PTSD receive sufficient care per recommended guidelines.³⁹ Another intriguing finding was the moderate but significant subgroup differences in deployment, potential trauma and health needs. In addition to some effect of lower education, Hispanic patients experienced a greater burden of deployment and combat events with more subsequent health or social problems. Finally, the low disclosure rates of talking to their physician about their deployment experiences (6%) raise implications for the appropriate recognition and treatment of relevant health concerns.

This study reflects the perceptions of family members or other individuals concerning the lingering health and psychological needs of OEF/OIF veterans themselves seeking care from community providers. In comparison to the substantial literature documenting the medical and psychosocial problems of veterans, there is a relative paucity of information concerning how such treatment needs and cumulative

social burdens ripple across the community and translate into family clinics. For example, two-thirds of spouses and children of military personnel suffering combat injuries experience significant post-deployment family distress,⁴⁰ while families dealing with OEF/OIF polytrauma issues face substantial coping, rehabilitation and social service needs.⁴¹ As less than 40% of OEF/OIF veterans have yet to enrol for VA care eligibility,⁴² a reasonable and important line of inquiry would follow where these individuals are pursuing necessary care along with the extent of family support.

The VA itself has recently implemented several steps to improve the diagnosis and coordination of care for OEF/OIF veterans with multiple medical and mental health needs. For example, in 2005, new prompts in the electronic medical record offer reminders about routine screening for PTSD, depression, alcohol, infectious disease and chronic symptoms; this was expanded in 2007 to include a TBI reminder. These facilitations are designed to target specific OEF/OIF treatment needs while suggesting the interconnection of many co-morbidities requiring attention,⁴³ such as TBI, epilepsy, chronic pain, psychological disorders and cognition problems.^{13,44}

The above panoply of serious needs presented by returning veterans comprises a complex treatment scenario increasingly observed by family practitioners. While community clinics often lack the resources to implement systematic changes to substantially improve care coordination for multiple needs, smaller focused efforts can yield benefits. Although clinicians face an already overwhelming agenda,⁴⁵ short screening questions should be considered for all patients with OEF/OIF connections to improve detection of PTSD and other psychological problems while encouraging positive treatment-seeking attitudes.⁴⁶ To foster more open disclosure, initiating conversations concerning military experiences and traumatic events, whether personal exposure or effects observed by family members, can help establish solid communication between patient, provider and support network while enhancing care coordination of chronic conditions over time.⁴⁷ Family focused therapy and active involvement in the rehabilitation process can help reduce stressors and improve physical or mental health outcomes,⁴⁸ as can efforts to encourage social support for returning soldiers.⁴⁹ The latter cannot be underestimated, as better engaging family members in the care of affected military personnel can substantially improve family functioning and outcomes.^{50,51} Other potential interventions are basic education on stress management to affected military personnel, as well as providing information on how to support returning veterans (e.g. a nationwide system of veteran centers available as community resources),

and adopting a more comprehensive, holistic approach to rehabilitation and ongoing chronic care.^{52,53}

Limitations of this descriptive study include utilising a fairly small number of primary care clinics in one geographic area. Yet we note that the six study clinics are quite representative of typical family medicine clinics and their patient populations. Secondly, it should be noted that the described health problems are perceived concerns, rather than documented clinical diagnoses; therefore, the actual prevalence of medical or psychological conditions might be over- or underestimated. The same might be offered for patient accuracy when sharing retrospective, second-hand information on the deployment experiences and ramifications of other individuals, especially as the social network is extended outside the immediate family. However, such disclosures among nearly 200 individuals in a single community directly affected by recent military service and subsequent serious health concerns provide telling insights into how widely OEF/OIF participation and its after-effects permeate throughout a community and its healthcare system. As such, in addition to presenting the VA with estimates on veterans potentially seeking care outside its own system, these results offer primary care providers an important glimpse of the array of health and other services required by an increasing population of post-deployment individuals and their families, not to mention the cumulative social burden of trauma pertaining to military service.

Further research in both community primary care and mental health settings is undoubtedly needed to reveal the full impact of the current conflicts on the health and social functioning of OEF/OIF veterans, and the need for broader support networks across society as a whole. These efforts should particularly target family members and wider social support networks,⁵⁴ along with more 'invisible' personnel such as civilian contractors, journalists and other non-military personnel, addressing gaps in our knowledge of healthcare needs and utilisation patterns within the VA and other health settings. Though not by design, community clinics are rapidly filling an important niche as a vital safety net for post-deployment health needs. As primary care providers across multiple health systems continue to confront the medical and social consequences of a decade-long, continuing OEF/OIF conflict, undoubtedly the prevalence and range of problems observed here will be magnified. The microcosm presented here offers a glimpse of the complex treatment challenges inherent in these relatively young patients with years of chronic health issues ahead of them. Efforts to better coordinate care among a variety of community resources, including the VA's own outreach programmes and veteran centers, while encour-

aging further medical education tailored to this multimorbid population will translate into improved ongoing care for recently deployed patients and their extended social networks.

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CONFLICTS OF INTEREST

None.

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