Recent Trends in the Treatment of Posttraumatic Stress Disorder and Other Mental Disorders in the VHA

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Objective: **This study proposed to evaluate Veterans Health Administration (VHA) specialty mental health care workload for treating posttraumatic stress disorder (PTSD) and other mental disorders between 2005 and 2010 in comparison with results from 1997 to 2005. The 2005–2010 time frame represents a period of increased utilization of services by recently returning veterans and of program expansion within VHA.** ***Methods:*** **VHA administrative databases were queried for all veterans receiving specialty mental health treatment annually between 2005 and 2010. Veterans were categorized by military service era (WWII or Korea, Vietnam, post-Vietnam, Persian Gulf War [including operations in Iraq and Afghanistan], and peacetime or other), diagnosis (PTSD or a non-PTSD mental disorder), and deployment to Iraq or Afghanistan.** ***Results:*** **The total number of veterans served per year increased by 623,326 (117.6%) between 1997 and 2010. Veterans with PTSD increased at a greater rate since 2005 compared with veterans with other mental disorders. Vietnam veterans constituted a majority of all veterans treated for PTSD or for other mental disorders, and the number of Vietnam veterans treated for PTSD continues to grow. The number of visits per veteran with PTSD increased between 2006 and 2010, reversing previous trends. The rate of increase has been highest for Iraq and Afghanistan veterans.** ***Conclusions:*** **Both the number treated and treatment intensity have increased for veterans with PTSD who served in current conflicts, which might be expected, and in the Vietnam era, now 30 years past. A reversal of past declines in treatment intensity coincides with an increase in PTSD treatment funding and program expansion since 2005. (*Psychiatric Services* in Advance, March 15, 2012; doi: 10.1176/appi.ps.201100432)**

Exposure to combat in Iraq or Afghanistan is associated with an increased risk of mental disorders, such as posttraumatic stress disorder (PTSD), and an elevated use of mental health services after returning from deployment (1–3). One mission of the Veterans Health Administration (VHA) is to provide mental health services to eligible veterans with military-related mental health problems. In the past, the VHA provided mental health services to eligible Vietnam veterans by establishing community-based outreach and service programs and expanding general mental health services, including specialized PTSD treatment programs (4).

Several years ago, in 2005, the Government Accountability Office voiced a concern that the VHA might not have adequate capacity to address the mental health needs of veterans from the recent conflicts in Iraq and Afghanistan (5). Among several other responses, these questions prompted a research study of VHA specialty mental health service utilization from 1997 to 2005 (6). This study revealed a 7% annual growth in users of VHA specialty mental health services. While the number of Persian Gulf–era veterans with a diagnosis of PTSD utilizing specialty mental health services increased by 8,000 per year on average, the growth in utilization by veterans with PTSD from earlier eras increased by 22,000 per year (including 18,000 Vietnam-era veterans per year). In addition, the intensity of treatment as measured by average number of mental health visits per veteran per year decreased, apparently in response to the increased demand. These findings emerged in the context of a 2.5% decline in the total population of Vietnam-era veterans and a 134% increase in Gulf War–era veterans over the same period (7).

Since fiscal year (FY) 2002, almost 1.2 million service members who served in Iraq or Afghanistan have left active duty and become eligible for health care through the VHA. As

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of March 2010, 48% of these veterans had sought VHA care (8). VHA responded with hundreds of millions of dollars to enhance mental health program funding, including tens of millions of dollars for PTSD services (6) and for national provider training programs in evidence-based psychotherapies for PTSD (9).

This study evaluated trends in workload and treatment intensity of VHA mental health services between 2005 and 2010 during the expansion of VHA specialty mental health programs for recently returning veterans and, with data not previously available, specifically assessed the workload accounted for by veterans who have deployed to Iraq or Afghanistan. Data were compared with those from a similar study of FYs 1997 through 2005. Although efforts have been made to expand VHA services in primary care and in readjustment counseling centers, this study focused exclusively on services in specialty mental health care settings.

Methods

Data source and sample

Data were based on the VHA Patient Treatment File, including all inpatient episodes, and the Outpatient Encounter File, which documents all outpatient clinic visits. The sample included all veterans who received at least one VHA specialty mental health inpatient or outpatient service visit as defined by inpatient bed section codes and by applicable specialty mental health clinic stop codes. Mental illness diagnoses were based on *ICD-9* codes 290.00–312.99, excluding code 305.1 (nicotine dependence), and code 331.xx. Data represent yearly utilization in FYs (October 1–September 30) 2005–2010. This study expanded methods from Rosenheck and Fontana (6), which evaluated FYs 1997, 1999, 2001, 2003, and 2005. The average number of visits per veteran was calculated as the average number of mental health specialty clinic stops per veteran in a given fiscal year. The study was approved and a waiver of informed consent was obtained from the institutional review board at the VA Connecticut Healthcare System and the Yale University School of Medicine.

Measures

Each veteran in each year was categorized as either having received a diagnosis of PTSD (*ICD-9* code 309.81) on at least one occasion or a diagnosis of any other mental disorder (*ICD-9* codes 290.00–312.99, excluding code 305.1 [nicotine dependence], and code 331.xx), excluding PTSD. Veterans were further categorized by one of six military service eras as recorded on the first outpatient encounter for each veteran in each year: World War II or Korean War (1941–1955), Vietnam (1964–1975), post-Vietnam (1975–1991), Gulf War (1991–present), or peacetime and other eras. Veterans classified as serving in the Gulf War era, beginning in August 1991 and continuing to the present, were further categorized as having deployed in support of operations in Iraq (Operation Iraqi Freedom [OIF]), Afghanistan (Operation Enduring Freedom [OEF]), or both. These distinctions were based on an administrative database obtained through a data use agreement between the investigators, VHA Central Office Patient Care Services, and the Department of Defense.

Analysis

All veterans who received specialty mental health services were stratified by FY, diagnosis category (PTSD diagnosis or mental disorders other than PTSD), military service era, and OEF/OIF deployment status to indicate Gulf War service. Because each analysis was computed with a complete (100%) sample, inferential statistics were not applied. Data management and statistical analysis were performed with SAS, version 9.2.

Results

Change in patient load

The total number of veterans who received at least one VHA specialty mental health contact increased by 623,326 (117.6%) between 1997 and 2010, an annualized growth rate of 9.0% per year over 13 years (Table 1). The number of veterans with a diagnosis of PTSD increased by 346,781 (249.4%, or 19.2% per year) over this period, whereas those who received a mental illness diagnosis other than PTSD showed a smaller increase, 276,545 individuals (70.7%, or 5.4% per year) (Table 1). There was an annualized growth of 14.8% per year for treated veterans with a diagnosis of PTSD between 2005 and 2010, compared with 12.6% per year between 1997 and 2005. Of those receiving any mental health diagnosis in specialty mental health programs, 63.1% received PTSD diagnoses between 2005 and 2010, compared with 47.4% between 1997 and 2005.

Of veterans with a diagnosis of PTSD, most had served in the Vietnam era, accounting for over 50% of the total in each year between 1997 and 2010 (Figure 1). OEF/OIF veterans first received a diagnosis of PTSD through a VHA specialty mental health setting in FY 2001 (N=195). This number increased to 99,872 in FY 2010, which represents an increase from .1% of veterans with a PTSD diagnosis in 2001 to 20.6% of veterans with a PTSD diagnosis in 2010.

Veterans of the Vietnam and the Gulf War eras (including OEF/OIF veterans) showed the highest rate of growth in the number treated over time among those with diagnosed PTSD. Veterans from OEF/OIF with PTSD increased by a total of 86,069 (623.5%, or 124.7% per year) since 2005, while Vietnam-era veterans with PTSD increased by 69,824 (36.9%, or 7.4% per year). Veterans from the Vietnam and Gulf War eras also displayed the greatest increase in mental disorders other than PTSD, although these increases were at lower rates compared to those with PTSD. Veterans from OEF/OIF with other mental disorders increased by 39,145 (411.1%, or 82.2% per year) since 2005, whereas Vietnam-era veterans with other mental disorders increased by 50,246 in the same period (21.7%, or 4.4% per year).

Change in intensity of treatment

Intensity of treatment was defined by the number of treatment visits in a VHA specialty mental health treatment setting per veteran per year (Table 2). The intensity of treatment for those with a diagnosis of PTSD decreased from an average of 24.5 visits per veteran in 1997 to 9.8 visits per veteran in 2006 and then increased over the next four years, to 14.8 visits per year by 2010, still less than 1997 levels. The intensity of

Table 1

Veterans with at least one specialty mental health service visit for posttraumatic stress disorder or other mental health disorder for fiscal years (FYs) 1997–2010

Diagnosis and service era	Patients treated by VHA annually[a]														Average annualized % increase, FYs 2005–2010
	FY 1997[b]		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		FY 2010		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Posttraumatic stress disorder															
All eras	139,062	26.2	279,256	33.8	300,323	35.2	343,900	37.9	379,732	39.5	422,248	41.0	485,843	42.1	11.7
Peacetime	6,107	1.2	9,615	1.2	11,012	1.3	18,948	2.1	15,865	1.7	17,200	1.7	19,517	1.7	18.4
WWII or Korea	23,102	4.4	26,718	3.2	25,189	3.0	24,521	2.7	22,791	2.4	21,083	2.1	20,020	1.7	–5.6
Vietnam	91,043	17.2	189,309	22.9	196,886	23.0	211,829	23.3	224,773	23.4	237,760	23.1	259,133	22.5	6.5
Post-Vietnam	10,506	2.0	23,034	2.8	24,870	2.9	28,326	3.1	32,347	3.4	36,841	3.6	35,727	3.1	9.4
Gulf War	8,304	1.6	30,580	3.7	42,366	5.0	60,276	6.6	83,956	8.7	109,364	10.6	151,446	13.1	37.8
OEF/OIF[c]	—	—	13,803	1.7	24,737	2.9	40,166	4.4	61,350	6.4	80,543	7.8	99,872	8.7	49.9
Other mental disorder															
All eras	391,205	73.8	546,997	66.2	554,154	64.9	564,782	62.2	582,392	60.5	606,772	59.0	667,750	57.9	4.1
Peacetime	44,954	8.5	53,037	6.4	51,736	6.1	50,080	5.5	50,644	5.3	48,715	4.7	43,825	3.8	–3.7
WWII or Korea	104,055	19.6	92,870	11.2	87,132	10.2	80,411	8.9	72,612	7.6	66,096	6.4	66,512	5.8	–6.4
Vietnam	151,065	28.5	231,201	28.0	233,340	27.3	236,475	26.0	240,071	25.0	245,957	23.9	281,447	24.4	4.1
Post-Vietnam	70,033	13.2	112,436	13.6	114,973	13.5	119,690	13.2	126,641	13.2	135,339	13.2	137,983	12.0	4.2
Gulf War	21,098	4.0	57,453	7.0	66,973	7.8	78,126	8.6	92,424	9.6	110,665	10.8	151,466	12.0	19.2
OEF/OIF[c]	—	—	9,521	1.2	15,445	1.8	20,422	2.3	28,632	3.0	36,110	3.5	48,666	4.2	39.1

[a] Percentages are proportions of total served by Veterans Health Administration (VHA) specialty mental health care.
[b] Data for FYs 1998–2004 are reported elsewhere (6).
[c] Operation Enduring Freedom/Operation Iraqi Freedom data were available for FYs 2001–2010 only and represent a subset of Persian Gulf War–era veterans.

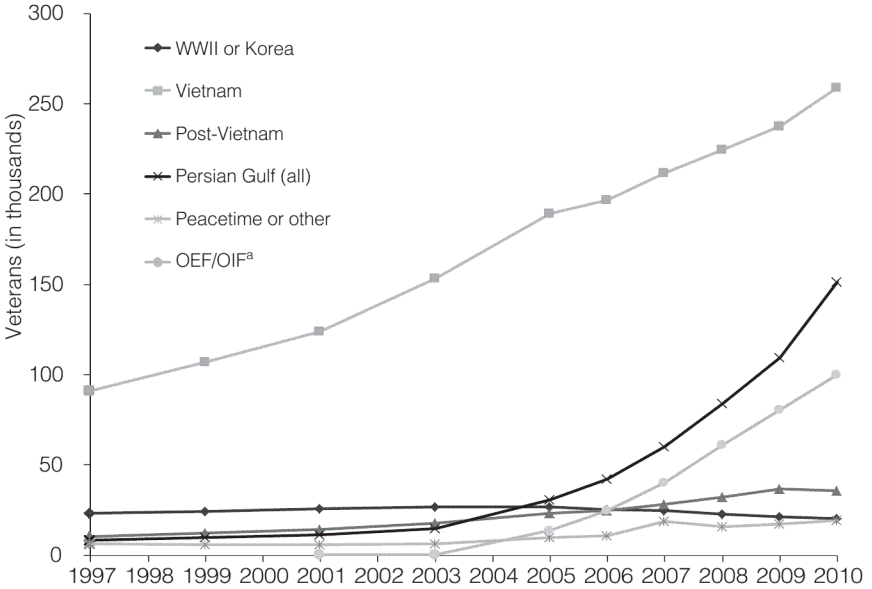
treatment for those with mental disorders other than PTSD decreased from 15.8 visits per veteran in 1997 to 10.9 visits per veteran in 2005 and then remained relatively stable, with an average of 10.0 visits per veteran over the next five years. For veterans who deployed to OEF/OIF, veterans with PTSD averaged more visits per veteran per year for 2005–2010 (9.7 visits per veteran) compared with veterans with other mental disorders (5.5 visits per veteran) (Table 2).

Veterans from the post-Vietnam era with PTSD had the largest average number of specialty mental health visits per veteran between 2005 and 2010, an average of 21.7 visits (Figure 2 and Table 2). This rate is much higher than those for veterans with PTSD from the WWII and Korea era and from OEF/OIF, who had the least average number of visits per veteran, at 8.0 and 9.7 visits, respectively. All eras showed a decline in the number of visits per veteran from 1997 to 2005, with an average decline of 43.8% for the entire group. Veterans with a diagnosis of PTSD from the OEF/OIF era have had the greatest rate of growth in visits per veteran since 2005, 48.4%, culminating in 11.4 visits per veteran in 2010.

Compared with veterans serving in other eras, veterans from the post-Vietnam era with non-PTSD mental

Figure 1

Veterans with a posttraumatic stress disorder diagnosis in Veterans Health Administration specialty mental health programs, fiscal years 1997–2010



[a] OEF/OIF, Operation Enduring Freedom and Operation Iraqi Freedom

Table 2

Outpatient mental health visits per year for veterans with posttraumatic stress disorder or other mental health disorder, fiscal years 1997–2010

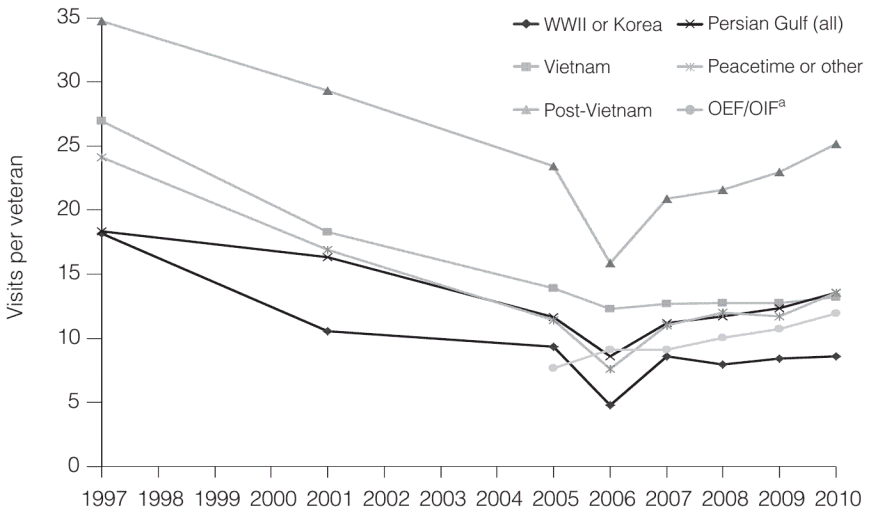
Diagnosis and service era	Average number of visits							Average annualized change (%)				
	1997	2005	2006	2007	2008	2009	2010	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010
Posttraumatic stress disorder												
All eras (average)	24.5	13.9	9.8	12.9	13.2	13.6	14.8	–29.4	30.9	2.5	3.3	8.6
Peacetime or other	24.1	11.4	7.6	11.0	12.0	11.7	13.5	–33.5	44.7	9.1	–2.5	15.7
WWII or Korea	18.2	9.4	4.8	8.6	8.0	8.4	8.6	–48.7	79.2	-7.6	5.7	2.4
Vietnam	26.9	13.9	12.3	12.7	12.8	12.7	13.2	–11.5	3.3	0.6	–.2	3.8
Post-Vietnam	34.8	23.4	15.9	20.9	21.6	23.0	25.2	–32.6	31.4	3.3	6.4	9.5
Gulf War	18.4	11.6	8.6	11.2	11.7	12.4	13.5	–36.7	30.2	4.5	5.6	9.6
OEF/OIF[a]	—	7.7	9.1	9.1	10.0	10.8	11.4	18.7	–.3	10.2	7.1	10.9
Other mental disorder												
All eras (average)	15.8	10.9	10.2	9.8	10.2	10.0	10.0	–6.0	–4.0	4.0	–2.3	.6
Peacetime or other	15.9	7.8	8.2	8.5	8.7	7.4	7.9	5.3	3.7	2.4	–14.9	6.2
WWII or Korea	10.5	9.4	5.7	3.9	4.6	4.6	4.5	–39.1	–32.3	20.0	.2	–3.5
Vietnam	21.0	12.5	12.6	12.1	12.8	12.2	11.9	.6	–4	5.5	–4.7	–2.5
Post-Vietnam	21.1	16.1	14.9	16.0	16.4	16.7	16.6	–7.7	7.4	2.3	2.0	–.5
Gulf War	10.6	8.4	9.6	8.5	8.5	8.9	9.3	13.7	–11.5	–.4	4.7	4.4
OEF/OIF[a]	—	4.8	5.2	5.3	5.5	6.0	6.1	7.7	3.1	2.8	8.6	2.7

[a] Operation Enduring Freedom/Operation Iraqi Freedom data were available for fiscal years 2001–2010 only and represent a subset of Persian Gulf War–era veterans.

disorders had the greatest average number of specialty mental health visits (16.1 visits per veteran) between 2005 and 2010, although they had fewer visits compared with their post-Vietnam–era counterparts with PTSD. WWII and Korea veterans and veterans from OEF/OIF with a non-PTSD mental disorder had the fewest, with 5.4 and 5.5 visits per veteran, respectively (Table 2). The number of mental health visits per veteran over the entire period indicated a yearly decrease for veterans of all service eras except for those serving in OEF/OIF or in the post-Vietnam era. OEF/OIF veterans with a mental disorder other than PTSD also had the greatest rate of growth in visits per veteran, 27.3%, since 2005.

Figure 2

Treatment intensity (number of visits per veteran per year) of veterans with a posttraumatic stress disorder diagnosis, fiscal years 1997–2010



[a] OEF/OIF, Operation Enduring Freedom and Operation Iraqi Freedom

Multiplying the number of veterans from Table 1 by the average number of visits per veteran from Table 2 shows a remarkable growth in total VHA specialty mental health services delivered, from 10.2 million visits in 1997, to 10.5 million in 2005, to 15.7 million in 2010, a 54% increase over 13 years, or 4.5% annually. Total visits for PTSD patients increased by 1.6% annually from 1997 to 2005, but by 19.6% annually from 2005 to 2010—a marked increase that kept ahead of the increase in numbers of veterans.

Discussion

This study evaluated VHA patient workload and treatment intensity for veterans with PTSD or other mental disorders who were diagnosed in VHA specialty mental health clinics between 2005 and 2010. These data were compared with trends from 1997 through 2005. The number of patients treated in VHA specialty mental health clinics has steadily increased since 1997 while the subset with a diagnosis of PTSD has increased at an even greater rate, especially since 2005. Vietnam veterans continue to make up the greatest percentage of veterans with a diagnosis of any mental disorder since 1997, and the number of new patients from

this group has continued to increase, three decades after the end of the Vietnam conflict (6). Not surprisingly, OEF/OIF veterans had a much higher rate of increase in any mental disorder category compared with veterans from other eras. These increases are in the context of an overall slight decline in the total national population of Vietnam veterans and an increase in OEF/OIF veterans since the conflicts began in 2003. Whereas the intensity of specialty mental health treatment for all mental disorders declined between 1997 and 2005, treatment intensity for those with a diagnosis of PTSD increased between 2005 and 2010, although not to 1997 levels. Those from the post-Vietnam era have consistently received more treatment for both PTSD and non-PTSD disorders, but the rate of increase in treatment intensity has been higher for OEF/OIF veterans. These results indicate that changes in health care delivery at VHA have produced increases in treatment intensity for veterans from both current and earlier conflicts.

An increase in VHA patients with a diagnosis of PTSD in any service era could be the result of an increase in PTSD symptoms, greater access to care, or both. Clinical research would not have predicted such long-term effects, and one can only speculate as to why, 30 years after combat ended, Vietnam veterans might be experiencing new or increased symptoms or a greater need for treatment. The increases in mental health services have emerged in the context of an overall 9% increase in VHA service use by Vietnam-era veterans since 1997 (7) and are especially stark when compared with the 8.8% decrease in the overall veteran population since 1997 (7). One possible explanation is that media accounts of recent combat or the stress of aging and retirement have rekindled old PTSD symptoms and have led more veterans to seek help (10).

Reductions in health services in general and in mental health services specifically across the United States may also be leading more veterans to seek services through the VHA as they approach retirement (11). Increases in funding and mental health service programming associated with the VHA's Mental Health Strategic Plan (12), which restructured and expanded mental health services across VHA starting in 2005, may have allowed more individuals to access care and thus increased PTSD diagnosis rates (13). In addition, changes in VHA disability policy allowing for disability compensation for diabetes and other disorders among Vietnam veterans exposed to Agent Orange may have contributed to greater use of VHA services. Most recently, the Secretary of Veterans Affairs reduced documentation requirements for PTSD compensation, which may have led additional Vietnam-era veterans to seek VHA services in the last year of this study period (14).

Our previous study showed a small increase in Gulf War–era veterans with a diagnosis of PTSD between 2003 and 2006 (6). The study reported here extended this assessment to 2010 and specifically evaluated workload accounted for by veterans who deployed to OEF/OIF, finding a much greater increase in veterans seeking treatment for both PTSD and other mental disorders over the past four years. The trend reflects the 32% increase in individuals who served in OEF/OIF and left active duty between 2005 and 2010 as the conflict in Iraq peaked and as the one in Afghanistan intensified (8). The mental health care of recently returning veterans has been a high priority in the VHA system (12). Returning veterans are screened for PTSD symptoms and other mental disorders both on active duty (15) and when initiating care at the VHA (16). These initiatives attempt to increase access for returning veterans throughout the VHA and have likely been a factor in helping over 50% of OEF/OIF veterans receive care at VHA (8). The success of these strategies is suggested by the increase in rates of diagnosed mental disorders observed among OEF/OIF and Vietnam veterans. These strategies may have allowed a growing number of Vietnam veterans to receive treatment for these disorders as well.

One concern voiced in the prior study in regard to the decline in the treatment intensity for veterans with PTSD and other diagnosed mental disorders was that the increased patient load from veterans of earlier eras may serve as a competing demand on health care providers, lowering treatment intensity especially for those returning from recent conflicts (6). For example, specialty mental health treatment intensity for veterans with PTSD from the post-Vietnam era was twice that of recently returning veterans. This treatment pattern may be due to a high comorbidity of substance use disorders within this group, which may require more frequent visits (17), or may have to do with an all-volunteer force more likely to use VHA services, a pattern similar to what is seen among OEF/OIF veterans.

In 2003, then-President Bush's New Freedom Commission on Mental Health recommended, "a fundamental transformation of the nation's mental health care" (18). Responding to this directive as well as to the pressure of an aging patient population and the return of combat veterans from recent conflicts, the VHA initiated a Mental Health Strategic Plan (12), which added hundreds of millions of dollars to mental health program funding, including tens of millions of dollars for PTSD services (www.ptsd.va.gov) (6). This funding came with dramatic initiatives aimed at increasing the capacity of and access to mental health services, improving the integration of mental health and primary care, emphasizing recovery and rehabilitation, and disseminating evidence-based models of care (13). As an example, VHA has nationally disseminated training programs in specialized evidence-based PTSD psychotherapies for providers (9) and hired 3,900 new providers (19). This study clearly depicts an increase in overall specialty mental health services and in per-patient treatment intensity since this funding influx, especially for OEF/OIF veterans, who have shown the greatest rate of change. Recent data indicate that OEF/OIF veterans may have fewer overall treatment visits for PTSD in the first year after receiving a PTSD diagnosis and may drop out of treatment sooner than Vietnam veterans, but this difference was no longer statistically significant after analyses controlled for age and comorbid conditions (20). In addition, although services have been expanded in pri-

mary care and readjustment counseling centers, this study focused only on services in specialty mental health settings and did not address utilization in these other settings.

There are several limitations to the use of administrative data in tracking the treatment of mental disorders in the VHA. VHA administrative data do not allow for the evaluation of specific types of treatment given to veterans or of the outcomes of treatment. We assessed treatment intensity as the number of visits per veteran as a marker for the quality of care, given that one might reasonably expect the outcome of care to improve with the number of treatment contacts. Psychotherapy forms an important basis of treatment for PTSD (21), and research suggests that a minimum of nine to 15 sessions of psychotherapy may be required for half of the clients to be considered recovered (22). This finding suggests that OEF/OIF veterans may not receive the optimal numbers of visits. However, OEF/OIF veterans are younger and more likely to be employed or in school. Therefore, a higher proportion may be obtaining treatment outside of the VHA after diagnosis. The extent to which the use of specialty mental health services has been offset by delivery of services in primary care settings could not be evaluated here and is an important issue for future study. In addition, the severity and chronicity of mental illness cannot be determined from these data. Because the intensity of treatment might depend on these factors, we cannot fully gauge the appropriateness of treatment intensity for this population. Finally, although this study included OEF/OIF veterans, those who have experienced combat stress could not be specifically identified.

Conclusions

This study evaluated trends in specialty mental health care utilization among veterans with PTSD and other mental disorders during a time of expansion of services in VHA coincident with military operations in Iraq and Afghanistan. The number of veterans seeking VHA specialty mental health treatment for PTSD and non-PTSD disorders continues to rise, as have funding and services provided to them. Although veterans returning from current conflicts showed the greatest increase in rates of PTSD, veterans from prior service eras formed the bulk of those treated. After an expansion of funding and programs for VHA mental health treatment, there has been an increase in treatment intensity for PTSD. These results underscore the need for continued monitoring of VHA mental health workload, especially for the specific services delivered.

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