

Mental Health Service Utilization by Iraq and Afghanistan Veterans After Entry Into PTSD Specialty Treatment

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Objective: Use of care by Iraq and Afghanistan veterans was examined after entry into a U.S. Department of Veterans Affairs (VA) specialty outpatient program for treatment of posttraumatic stress disorder (PTSD). Those who had received mental health care before entry (continuing patients) were compared with those who had not (new patients). **Methods:** Regression analyses compared veterans' retention in PTSD programs in the 180 days after program entry for new patients (N=172) and continuing patients (N=422). Two retention measures, total visits and completion of nine or more visits, were developed from VA administrative data. **Results:** New patients completed fewer PTSD visits than did continuing patients (5.2 ± 9.5 versus 8.3 ± 14.3 ; incidence risk ratio=.91, 95% confidence interval [CI]=.85-.97) and were also less likely to complete nine or more visits (OR=.81, CI=.68-.97). **Conclusions:** Contact with providers before entering PTSD specialty care may facilitate veterans' treatment engagement, suggesting the value of repeated attempts at engaging such veterans in treatment. (*Psychiatric Services* 65:1066-1069, 2014; doi: 10.1176/appi.ps.201300117)

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Fifty-eight percent of veterans of Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom (OEF/OIF) receiving health care from the U.S. Department of Veterans Affairs (VA) from 2002 to 2008 were diagnosed as having posttraumatic stress disorder (PTSD), which makes PTSD the most commonly diagnosed mental disorder among OEF/OIF veterans in the VA system (1). Despite recent increases in the provision of PTSD treatment (2,3), research indicates that less than a third of OEF/OIF veterans with PTSD diagnoses who begin outpatient treatment complete an adequate number of psychotherapy sessions (1,4). The substantial rate of discontinuation among OEF/OIF veterans suggests that further examination of PTSD treatment retention could inform VA policies in regard to PTSD treatment.

Prior studies have identified predictors of sustained participation in VA outpatient mental health programs among OEF/OIF veterans with PTSD (1,4). In an analysis of all OEF/OIF veterans receiving one or more new psychiatric diagnoses between 2002 and 2008, Seal and colleagues (1) found that completing at least nine outpatient mental health encounters was related to having received the first PTSD diagnosis at a mental health clinic, having a co-occurring psychiatric disorder, female gender, age >24 years, proximity to a VA clinic, and receipt of care at a VA community outpatient clinic versus a VA hospital. In an analysis of 395 OEF/OIF veterans who screened positive for PTSD and

entered a VA outpatient PTSD treatment program, Lu and colleagues (4) found that completion of nine or more outpatient mental health visits was associated with nonwhite race, urban residence, entering PTSD treatment within 30 days of a positive PTSD screen, and having a co-occurring general medical or mental health condition. These results indicate the importance of access to VA providers, timely referral to a treatment program, geographic proximity to VA clinics, and individual characteristics.

Studies of non-VA settings have found that prior receipt of mental health treatment predicted lower dropout (5) and was associated with greater perceived need for treatment by young adults, even after adjustment for severity, attitudes toward treatment participation, and demographic characteristics (6). These studies suggest that prior treatment experience could increase OEF/OIF veterans' propensity to recognize their need for treatment and their motivation to continue in a program.

The study reported here examined OEF/OIF veterans' participation in VA mental health outpatient care after entry into a VA outpatient PTSD specialty program and compared service use patterns of those who had not received any VA mental health care before entry with those who had. On the basis of research findings from non-VA settings (5,6), we hypothesized that compared with OEF/OIF veterans who were continuing in VA mental health care (continuing patients), veterans newly entering VA mental

health care (new patients) would have fewer PTSD specialty program visits, would be less likely to complete a minimally adequate number of visits, and would use fewer other VA mental health resources after entry into PTSD specialty care.

Methods

Administrative data for health care utilization were used to identify 1,084 OEF/OIF veterans with a PTSD diagnosis (*ICD-9-CM* 308.4 and 309.81) who in fiscal year 2009 entered a VA PTSD specialty program at VA medical centers or stand-alone VA outpatient clinics in the mid-Atlantic service region (the VA Capitol Health Care Network). We excluded 55 veterans who separated from the military less than 180 days before PTSD program entry, three veterans who died during the study period, 242 veterans who had received services at any PTSD specialty outpatient program in the 180 days before program entry, and 190 veterans who had no PTSD diagnosis within 30 days before or after program entry. The final sample consisted of 594 veterans. The study period was defined as 180 days after veterans' date of PTSD program entry. The study was approved by the University of Maryland Institutional Review Board.

The main dependent variable was retention in a PTSD specialty program during the 180 days after entry. Retention in the program was defined in two ways: number of visits and nine or more visits. The evidence-based psychotherapies for PTSD widely implemented in the VA require a minimum of nine sessions (7). Thus most research on VA PTSD treatment has used nine sessions as an indicator of minimally adequate treatment (1). The 180-day time frame was chosen because a course of evidence-based psychotherapy for PTSD can be completed in less than 180 days if there are no significant lapses in attendance. Utilization rates of other mental health services and psychotropic medications after program entry were also examined.

The independent variable of interest was a binary indicator for new patients—veterans who had not used any VA outpatient mental health services and had not received any psychotropic

medications in the 180 days before PTSD program entry. New patients were compared with continuing patients—those who had received outpatient mental health care or a psychotropic medication before PTSD program entry.

Covariates included demographic characteristics (age, race-ethnicity, and gender), marital status, co-occurring mental health diagnoses in the 180 days before PTSD program entry, number of years between the date of military discharge and program entry, number of years between first PTSD diagnosis and program entry, distance (miles) between the veteran's residence and the nearest VA facility (measured by zip code), and a VA service-connected disability rating $\geq 50\%$. Service-connected disability benefits are paid to veterans with disabilities resulting from conditions incurred or exacerbated during active military service. Data on race were missing for 93 veterans. Missing observations for race were multiply imputed. Co-occurring mental health conditions included the following categories based on *ICD-9* codes: depression or dysthymia (293.83, 296.2, 296.3, 296.9, 300.4, 301.12, 309.0, 309.1, and 311), psychotic disorder (295.x, 296.0, 296.4–296.8, 297.x, and 298.x), other anxiety disorders (300, 300.0, 300.2, and 300.3), and alcohol and other substance use disorders (303.9, 304.x, and 305.x except 305.1). Mild traumatic brain injury as noted in patients' charts was also included.

A random-effects negative binomial regression was used to estimate the number of PTSD specialty program visits. Random effects were specified at the site level. This model assumed equal variances for the random effects. Coefficients in this model are reported as incidence risk ratios (IRRs), calculated as $\exp(\beta)$, where β is the estimated coefficient. The IRR can be interpreted as the ratio of the expected number of visits in the group of interest compared with the reference group. A random-effects logistic regression was used to estimate odds ratios (ORs) for the probability of completing nine or more visits. The covariance matrix for the site-level random effects was specified as having equal variances and one common pairwise covariance.

Results

The sample was predominantly male ($N=524$, 88%) and unmarried ($N=339$, 57%), with a service-connected disability rating of $<50\%$ ($N=325$, 55%). The sample included Caucasians ($N=266$, 45%), African Americans ($N=213$, 36%), Asian Americans ($N=11$, 2%), American Indians or Alaska Natives ($N=6$, 1%), and Native Hawaiians or other Pacific Islanders ($N=5$, $<1\%$). [A table presenting sample data is available in an online data supplement to this report.]

Continuing patients ($N=422$, 71%) did not differ from new patients ($N=172$, 29%) on demographic variables. However, continuing patients had a significantly greater mean \pm SD number of years between military discharge and PTSD program entry than new mental health patients (3.57 ± 1.62 versus 3.24 ± 1.60 ; $t=2.23$, $df=592$, $p=.03$), as well as a greater number of years between first PTSD diagnosis and program entry (1.17 ± 1.37 versus $.32 \pm .80$; $t=9.31$, $df=592$, $p<.001$). Approximately half the veterans ($N=326$, 55%) had a PTSD diagnosis with no co-occurring psychiatric diagnosis. Depressive disorder was the most common co-occurring diagnosis in both groups, followed by a substance use disorder.

Overall, veterans completed a mean of 7.4 ± 13.2 PTSD program visits, and 134 veterans (23%) completed nine or more visits. Continuing patients completed a greater number of visits than did new patients (8.3 ± 14.3 versus 5.2 ± 9.5 visits, $p=.002$). Twenty-seven percent of the sample ($N=161$) did not have any program visits after the initial session ($N=43$, or 25% of new patients and $N=118$, or 28% of continuing patients).

Compared with new patients, continuing patients had significantly more visits to other outpatient mental health programs (5.8 ± 8.1 versus 3.9 ± 6.4 ; $\chi^2=14.77$, $df=1$, $p<.001$) and more residential treatment bed-days (14.9 ± 37.6 versus 4.0 ± 19.0 ; $\chi^2=5.87$, $df=1$, $p=.015$). Continuing patients also had more psychotropic medication possession days (75.6 ± 60.5 versus 34.9 ± 47.0 ; $\chi^2=24.24$, $df=1$, $p<.001$). However, outpatient substance use treatment visits and inpatient mental health bed-days did not differ significantly between the groups. [A table summarizing these and other findings is included in the online supplement.]

Table 1

Regression analyses of predictors of completion of PTSD specialty program visits in the 180 days after program entry among 594 Iraq and Afghanistan veterans

Characteristic	Total visits				≥9 visits			
	Incidence risk ratio	95% CI	z	p	OR	95% CI	z	p
New patient (reference: continuing patient)	.91	.85–.97	–2.89	.004	.81	.68–.97	–2.28	.023
Male (reference: female)	.89	.82–.97	–2.70	.007	.97	.77–1.22	–.25	.806
Married (reference: not married)	.96	.90–1.02	–1.32	.187	.81	.69–.95	–2.67	.008
Black (reference: not black)	1.31	1.23–1.39	8.80	<.001	1.31	1.11–1.54	3.29	.001
Service-connected disability rating ≥50% (reference: <50%)	1.33	1.25–1.41	9.54	<.001	1.93	1.67–2.25	8.64	<.001
Age	1.01	1.00–1.01	3.87	<.001	1.03	1.02–1.03	6.05	<.001
Co-occurring disorder (reference: none)								
Psychotic disorder ^a	1.58	1.38–1.81	6.62	<.001	1.30	.91–1.86	1.44	.149
Depression	1.16	1.08–1.25	4.18	<.001	.98	.81–1.18	–.23	.819
Other anxiety disorder	1.12	.99–1.28	1.77	.077	.79	.54–1.17	–1.18	.240
Substance use disorder	1.32	1.16–1.49	4.30	<.001	1.38	1.00–1.91	1.94	.052
2 co-occurring disorders	1.30	1.18–1.43	5.45	<.001	1.39	1.10–1.75	2.78	.005
≥3 co-occurring disorders	1.76	1.39–2.22	4.75	<.001	3.40	2.01–5.76	4.55	<.001
Mild traumatic brain injury (reference: none)	.92	.81–1.03	–1.46	.146	.63	.45–.89	–2.65	.008
Years between military discharge and PTSD program entry	.98	.97–1.00	–1.87	.062	.98	.94–1.02	–.89	.373
Years between first PTSD diagnosis and PTSD program entry	.89	.87–.92	–8.67	<.001	.81	.76–.86	–6.24	<.001
Miles between veteran's residence and nearest VA facility	.96	.94–.99	–2.56	.010	.93	.86–1.00	–2.08	.038

^a Schizophrenia, schizoaffective disorder, bipolar disorder, and other psychotic conditions

The IRR for new patients indicates that they completed on average 91% of the visits completed by continuing patients (IRR=.91, $p=.004$) (Table 1). This suggests that those already connected with the mental health treatment system and those who had more severe and complex conditions completed more PTSD visits on average. A likelihood ratio test indicated that site-level random effects were statistically significant ($\chi^2=1,675.60$, $df=1$, $p<.001$). This indicates that PTSD visit completion varied among VA sites of care. Clients of one site, in particular, completed more PTSD visits, on average, than clients at the other sites. This difference may be related to the presence at this site of a PTSD residential program, which may facilitate use of outpatient PTSD treatment.

New patients were less likely than continuing patients to complete nine or more PTSD program visits (OR=.81, $p=.023$). Although the other results of the logistic regression model were similar to the results of the negative binomial regression, there were some differences. In the logistic model, being male and having a co-occurring psychotic disorder, depression, or a substance use disorder were not significantly associated with the likelihood of completing nine or more visits. Also, two

variables were associated with a lower likelihood of completing nine or more visits—being married (OR=.81, $p=.008$) and having a history of mild traumatic brain injury (OR=.63, $p=.008$).

Discussion

This study of OEF/OIF veterans offers evidence of greater treatment retention among continuing patients than among new patients in VA mental health care. In the 180 days after entry into a PTSD specialty program, continuing patients had a significantly greater number of PTSD program visits, other outpatient mental health (non-PTSD) visits, residential mental health treatment bed-days, and psychotropic medication possession days than did patients new to VA mental health care. Continuing patient status was also a significant predictor of receipt of minimally adequate treatment.

These results suggest that veterans' previous involvement in mental health treatment was associated with PTSD treatment attendance. One interpretation is that successful participation in therapy often requires a series of attempts at, and returns to, treatment. Thus it is important for service providers and systems to make proactive, continued attempts to engage OEF/OIF veterans who have discontinued

an initial course of treatment. Also, it may be unrealistic to expect mental health care systems to achieve high utilization rates when a significant number of patients are new to treatment, as in the VA. Results suggest that service use by new OEF/OIF patients may improve in subsequent treatment episodes.

Several significant predictors of PTSD treatment engagement were identified, in addition to being a continuing patient. Notably, a longer delay between initial PTSD diagnosis and PTSD program entry was associated with completion of fewer PTSD program visits. These results may reflect a negative consequence of referral delays; veterans may be less likely to engage in treatment if there is an extensive wait. It is also worth noting that "persistent avoidance of stimuli associated with the trauma" is a cardinal symptom of PTSD (8) and that this experiential avoidance may help account for the relationship between delayed entry and fewer program visits (that is, veterans who delay treatment entry may also attend fewer sessions, avoiding discussion of traumatic experiences).

This study had several limitations common to studies employing administrative data. First, it employed correlational analysis, and assumptions about causation cannot be made.

Second, it was not possible to determine the content of veterans' PTSD program visits (such as empirically validated psychotherapies and medication). Third, we were unable to determine veterans' use of services outside the VA system. Finally, this study categorized an individual as having a coexisting mental disorder if he or she had received treatment in the 180 days before PTSD program entry, and it is likely that in some cases the PTSD diagnosis replaced the previous diagnosis rather than existing with it concurrently.

Conclusions

Most OEF/OIF veterans entering PTSD specialty care had previously received other VA mental health treatment, and these veterans had greater odds than new patients of receiving minimally adequate treatment. Results suggest the importance of proactive, repeated efforts to engage OEF/OIF veterans with PTSD in treatment after initial treatment withdrawal,

because they may demonstrate improved participation in subsequent treatment episodes.

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