Mental Health Treatment Delay: A Comparison Among Civilians and Veterans of Different Service Eras

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Objective: The study compared delay of treatment for posttraumatic stress disorder (PTSD), major depressive disorder, and alcohol use disorder among post-9/11 veterans versus pre-9/11 veterans and civilians.

Methods: The 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions–III (NESARC-III), a nationally representative survey of U.S. noninstitutionalized adults, was used. Participants included 13,528 civilians, 1,130 pre-9/11 veterans, and 258 post-9/11 veterans with lifetime diagnoses of PTSD, major depression, or alcohol use disorder. Cox proportional hazard models, controlling for relevant demographic characteristics, were used to estimate differences in treatment delay (i.e., time between diagnosis and treatment).

Results: Post-9/11 veterans were less likely to delay treatment for PTSD and depression than pre-9/11 veterans (adjusted hazard ratios [AHRs]=0.69 and 0.74, respectively) and civilians (AHRs=0.60 and 0.67, respectively). No differences in treatment delay were observed between post-9/11 veterans and pre-9/11 veterans or civilians for alcohol use disorder. In an exploratory analysis, post-9/11 veterans with past-year military health care coverage (e.g., Veterans Health Administration) had shorter delays for depression treatment compared with post-9/11 veterans without military coverage, pre-9/11 veterans regardless of health care coverage, and civilians, although past-year coverage did not predict treatment delay for PTSD or alcohol use disorder.

Conclusions: Post-9/11 veterans were less likely to delay treatment for some common psychiatric conditions compared with pre-9/11 veterans or civilians, which may reflect efforts to engage recent veterans in mental health care. All groups exhibited low initiation of treatment for alcohol use disorder, highlighting the need for further engagement efforts.

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Since October 2001, approximately 4 million veterans have been involved in active conflicts in and around Afghanistan and Iraq (1). Post-9/11 veterans have high rates of psychiatric conditions (36.9% to 43%) (2, 3). Three of the most common psychiatric conditions among recent veterans are posttraumatic stress disorder (PTSD), major depressive disorder, and alcohol use disorder (2–7).

Considerable attention has been paid to the unmet treatment needs of post-9/11 veterans (1, 3, 8, 9), aimed at decreasing delays in treatment. In response to high rates of psychiatric diagnoses among post-9/11 veterans and associated difficulties with reintegration (10), the Veterans Health Administration (VHA), the Department of Defense (DoD), veterans service organizations (11), and nongovernmental agencies have made concerted efforts in the past decade to increase veterans' engagement in mental health treatment (1, 12). Recent initiatives include providing mental health treatment outside specialty mental health settings (e.g., primary care–mental health integration [PCMHI]) (13, 14), public awareness campaigns (e.g., the Veterans Crisis Line and the "Make the Connection" Web site) (15), postmilitary discharge outreach (16, 17), increased peer support programs (18), and enhanced eligibility among post-9/11 veterans for VHA benefits for 5 years following discharge (19).

HIGHLIGHTS

- Delay in mental health treatment for military veterans and civilians was examined by using a population-based survey study of 14,916 adults with lifetime diagnoses of PTSD, major depressive disorder, or alcohol use disorder.
- Post-9/11 veterans had significantly shorter delays in treatment for PTSD and major depression, but not alcohol use disorder, compared with pre-9/11 veterans and civilians.
- Post-9/11 veterans with past-year military health care coverage showed the shortest delay in treatment for major depression.
- Post-9/11 veterans with past-year military health care coverage showed the shortest delay in treatment for major depression, compared with civilians, pre-9/11 veterans, and post-9/11 veterans without past-year military health care coverage.

Nonetheless, recent evaluations indicate that there are substantial remaining unmet mental health needs among post-9/11 veterans. For example, 31% of post-9/11 veterans with alcohol use disorder received mental health treatment in the past year (8), and 48% of soldiers screening positive for PTSD after deployment received mental health treatment in the past 6 months (9). Failure to engage in and delay in mental health treatment are common within the general U.S. population. Data collected between 2001 and 2003 in the National Comorbidity Survey Replication indicate that, on average, individuals with PTSD, depression, and alcohol use disorder delay treatment after symptom onset for 12, 8, and 9 years, respectively (20). Treatment delay is associated with persistent symptoms, adverse functional outcomes, and social costs (21, 22). Given substantial changes in policy and initiatives to increase veteran engagement in mental health care, it is important to use recent epidemiological data to understand whether treatment delay among post-9/11 veterans is comparable with delay among veterans of prior service eras and among civilians.

This study compared treatment delay for PTSD, depression, and alcohol use disorder among post-9/11 veterans and veterans of prior service eras and civilians. On the basis of recent initiatives and policy changes aimed at engaging recent veterans in mental health care, we expected shorter treatment delays among post-9/11 veterans compared with pre-9/11 veterans and civilians. We employed data from the National Epidemiologic Survey on Alcohol and Related Conditions–III (NESARC-III), a nationally representative survey of the general U.S. population (23).

METHODS

All procedures for NESARC-III data collection were approved by the institutional review boards of the National Institutes of Health and Westat, Inc. This study was approved by the Institutional Review Board at the U.S. Department of Veterans Affairs Puget Sound Health Care System–Seattle Division.

Sample

The NESARC-III used probability sampling to select a representative sample of noninstitutionalized U.S. residents ages 18 and older who were not on active duty in the military during 2012–2013 (23). Individual counties or groups of contiguous counties served as primary sampling units; census blocks served as secondary sampling units; and households within secondary sampling units served as tertiary sampling units, with eligible adults randomly selected within households (23). Hispanic, black, and Asian respondents were oversampled. The full NESARC-III sample was 36,309 respondents, with a response rate of 60.1%, comparable to other U.S. national surveys (24).

Measures

Psychiatric diagnoses and symptom severity. The Alcohol Use Disorder and Associated Disabilities Interview Schedule–5 (AUDADIS-5) is a validated, in-person diagnostic interview used to measure *DSM-5* criteria for PTSD, major depressive disorder, and alcohol use disorder (25, 26). To receive a lifetime diagnosis of PTSD in NESARC-III, an individual must report witnessing, learning about, or experiencing at least one of 19 potentially traumatic events (criterion A) along with experiencing one or more intrusion symptoms (criterion B), one or more avoidance symptoms (criterion C), three or more negative mood or cognitive changes (criterion D), and three or more increased arousal symptoms (criterion E). This definition requires that more symptoms be present for criteria D and E than does *DSM-5*, which requires only two; however, it has been used in other studies based on NESARC-III (27, 28). Lifetime major depressive disorder and alcohol use disorder diagnoses were assessed with the AUDADIS-5, consistent with *DSM-5* criteria (23, 29). As metrics of severity, counts of lifetime symptoms of each disorder were calculated from a list of potential symptoms (PTSD, N=20; depression, N=9; and alcohol use disorder, N=11).

Treatment delay. Among those meeting lifetime diagnostic criteria for PTSD, major depressive disorder, or alcohol use disorder, a single item assessed age at onset of diagnosis and a separate item assesses age when help was first received for that disorder, if ever. Additional items assessed various types of help received (e.g., inpatient treatment and self-help group). We categorized treatment types into formal (e.g., inpatient treatment) or informal (e.g., self-help group) (see Supplemental Table 1 in the online supplement).

For survival analyses, the dependent variable was the length of time in years between the onset of diagnosis and first receipt of care (formal or informal). Those who did not report ever receiving treatment at the time of the survey were censored. A portion of respondents reported receiving treatment before onset of diagnosis, yielding negative values for estimates of time to treatment (PTSD: N=95, 4.1%; depression: N=552, 7.5%; alcohol use disorder: N=455, 4.6%). To avoid introducing bias through imputation of our dependent variable, negative values were coded as missing. Veteran status (active duty or not) was not associated with likelihood of reporting a negative time to treatment (see Supplemental Table 3 in the online supplement).

Explanatory variables. The primary predictor of interest was veteran status, which was assessed by the question, "Have you ever served on active duty in the U.S. Armed Forces, Military Reserves, or National Guard?" Respondents answering "Yes, on active duty in past, but not now" were classified as veterans. Those indicating having trained in the National Guard and Reserve (N=200) but no other service or those with unknown veteran status (N=8) were excluded from analyses because of ambiguity regarding whether they should be categorized as veterans or civilians. Subsequent items assessed time periods of active duty. Individuals who endorsed any service post-9/11 were categorized as post-9/11 veterans, and those who did not were categorized as pre-9/11 veterans.

TABLE 1. Demographic characteristics of 14,916 survey respondents with PTSD, major depressive disorder, and alcohol use disorder, by veteran and service era status[a]

	PTSD (N = 2,335)						Major depressive disorder (N= 7,406)						Alcohol use disorder (N= 9,943)					
	Veterans						Veterans						Veterans					
	Pre-9/11 (N=172)		Post-9/11 (N=57)		Civilians (N=2,106)		Pre-9/11 (N=414)		Post-9/11 (N=92)		Civilians (N=6,900)		Pre-9/11 (N=879)		Post-9/11 (N=211)		Civilians (N=8,853)	
Variable	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Male	140	84.7	41	69.8	496	26.0	346	86.9	63	74.0	1,914	30.3	801	93.0	163	79.4	4,567	55.3
Age																		
18–29	1	.6	22	35.7	494	25.3	1	.2	37	36.1	1,524	22.4	0	—	83	35.0	2,722	30.4
30–44	26	14.2	23	42.8	703	30.8	58	14.2	41	46.3	2,128	28.1	137	16.3	87	43.8	2,946	31.7
45–64	102	55.0	12	21.5	747	36.4	243	55.0	13	13.4	2,522	38.3	468	47.8	39	19.8	2,750	32.8
≥65	43	30.2	0	—	162	7.5	112	30.5	1	4.2	726	11.1	274	35.9	2	1.4	435	5.1
Race-ethnicity																		
Non-Hispanic white	105	69.7	28	64.6	1,178	68.4	292	80.1	55	70.2	4,296	73.8	615	81.5	128	70.9	5,411	73.4
Non-Hispanic black	42	15.7	16	19.5	420	11.4	73	9.8	18	11.1	1,090	8.6	165	9.5	36	10.6	1,511	8.9
Non-Hispanic other	13	9.0	2	3.7	105	6.1	20	5.0	2	1.9	370	5.6	41	4.0	10	4.0	439	5.5
Hispanic	12	5.5	11	12.2	403	14.2	29	5.1	17	16.8	1,144	12.0	58	5.0	37	14.6	1,492	12.3
Income <$20,000	51	24.1	10	16.2	821	31.2	104	20.6	15	12.6	1,982	22.3	209	16.5	33	11.4	2,325	20.0
Married	74	59.1	20	35.1	802	47.7	170	55.1	38	44.1	2,909	52.6	428	64.8	99	53.3	3,758	52.9
Age at symptom onset (M±SD)	26.04±15.24		23.02±11.35		23.43±17.52		37.17±17.21		24.99±11.39		28.58±17.02		29.83±18.42		24.50±11.55		25.79±13.08	
Sought treatment	116	64.7	43	79.8	1,197	58.3	278	69.4	67	76.3	4,646	69.3	272	26.3	45	17.5	1,738	19.2
Type of treatment received																		
Formal	115	64.2	43	79.8	1,170	56.7	274	68.6	65	74.8	4,561	68.2	233	22.3	33	11.9	1,445	16.0
Informal	42	24.9	16	35.9	332	15.8	78	19.4	19	19.9	1,070	14.6	235	22.7	31	12.9	1,404	15.2
Age at first treatment (M±SD)	35.18±23.65		28.22±14.18		27.40±22.48		40.23±20.04		26.99±12.61		30.89±20.19		32.76±24.96		24.90±9.93		28.98±28.52	
Treatment delay (M±SD years)[a]	9.35±19.31		4.77±11.00		5.31±16.10		4.98±14.13		1.89±5.23		3.92±11.35		8.72±19.09		3.53±11.00		6.17±21.77	
N of symptoms (M±SD)	16.04±3.14		16.19±3.18		15.61±3.52		7.47±1.48		7.41±1.85		7.47±1.55		6.05±3.38		5.42±3.28		5.68±3.49	
VHA/TRICARE coverage in the past 12 months	80	46.3	35	61.2	0	—	144	31.4	50	57.2	0	—	284	29.4	116	57.6	0	—

[a] Computed only for those who reported seeking help. Individuals may be counted in more than one diagnosis category.

TABLE 2. Predictors of treatment delay by 14,916 survey respondents with PTSD, major depressive disorder, and alcohol use disorder[a]

	PTSD (N=2,162)		Major depressive disorder (N=6,663)		Alcohol use disorder (N=9,300)	
Predictor	AHR	95% CI	AHR	95% CI	AHR	95% CI
Veteran status						
Specification 1 (reference: post-9/11)						
Civilian	.60	.47–.76	.67	.53–.85	1.19	1.78–1.81
Pre-9/11	.69	.49–.96	.74	.56–.98	1.16	.73–1.83
Specification 2 (reference: civilian)						
Post-9/11	1.67	1.31–2.13	1.49	1.18–1.90	.84	.55–1.27
Pre–9/11	1.15	.87–1.51	1.10	.95–1.29	.97	.79–1.20
Male gender (reference: female)	.92	.79–1.08	.71	.65–.76	1.36	1.19–1.55
Age group (reference: 18–29)						
30–44	.89	.76–1.05	1.07	.99–1.16	.86	.71–1.06
45–64	.72	.60–.86	.89	.82–.97	.97	.80–1.17
≥65	.38	.28–.52	.69	.61–.79	.77	.58–1.02
Race-ethnicity (reference: non-Hispanic white)						
Non-Hispanic black	.72	.61–.86	.65	.59–.71	1.15	.96–1.37
Non-Hispanic other	.81	.62–1.06	.68	.59–.79	1.42	1.11–1.82
Hispanic	.72	.61–.86	.68	.62–.74	1.04	.88–1.24

[a] Results are from Cox proportional hazards models (N=14,088) that controlled for age, gender, and race-ethnicity. Sample sizes for Cox models are reduced from the full sample because of missingness for one or more modeled variables. Smaller adjusted hazard ratios (AHRs) reflect longer delays in seeking treatment, and larger AHRs reflect shorter delays.

Given that efforts by the VHA and DoD may have contributed to increased probability of treatment for post-9/11 veterans, in exploratory analyses we included a survey item that asked respondents whether they were enrolled in VHA, CHAMPVA, or CHAMPUS/TRICARE in the past 12 months. This variable, referred to as VHA/TRICARE, was set to zero for civilian respondents. All post-9/11 veterans are eligible for VHA for 5 years after discharge. CHAMPVA is available only to dependents of veterans and thus is not a relevant response option for veterans. TRICARE is available only to retired military personnel. Because almost none of the post-9/11 veterans were over age 65 and relatively few were between 45 and 64, the VHA/TRICARE variable mostly represents enrollment in VHA. For the pre-9/11 veteran groups, this variable likely represents a combination of VHA enrollment and TRICARE coverage. The VHA/TRICARE variable does not indicate whether veterans actually use VHA/TRICARE services. Thus analyses including VHA/TRICARE coverage were considered exploratory. We created a five-level variable reflecting VHA/TRICARE coverage, veteran status, and era of service (civilians, pre-9/11 veterans with or without past year VHA/TRICARE coverage, and post-9/11 veterans with or without past year VHA/TRICARE coverage).

Demographic covariates. Demographic characteristics that could not be influenced by military service (age, gender, and race-ethnicity) and that have been previously linked with treatment seeking (30, 31) were included as covariates. Sensitivity analyses included other demographic characteristics that could be influenced by military service (marital status and income).

Analysis Procedures

All analyses were adjusted for clustering, oversampling, and nonresponse and were weighted to represent the U.S. noninstitutionalized population, accounting for the complex survey design of NESARC-III. Survival analysis was used to model delay in treatment, while accounting for individuals who had not received treatment at the time of the survey (right-censoring) (32). Cox proportional hazard models were constructed by using the "svycoxph" function in the "survey" package in R (33, 34). A lower cumulative hazard represents a longer delay in treatment. Models were run separately for each diagnostic category (PTSD, depression, and alcohol use disorder) by using the subsample of individuals who met criteria for a lifetime diagnosis of the given disorder. An individual could be present in more than one subsample.

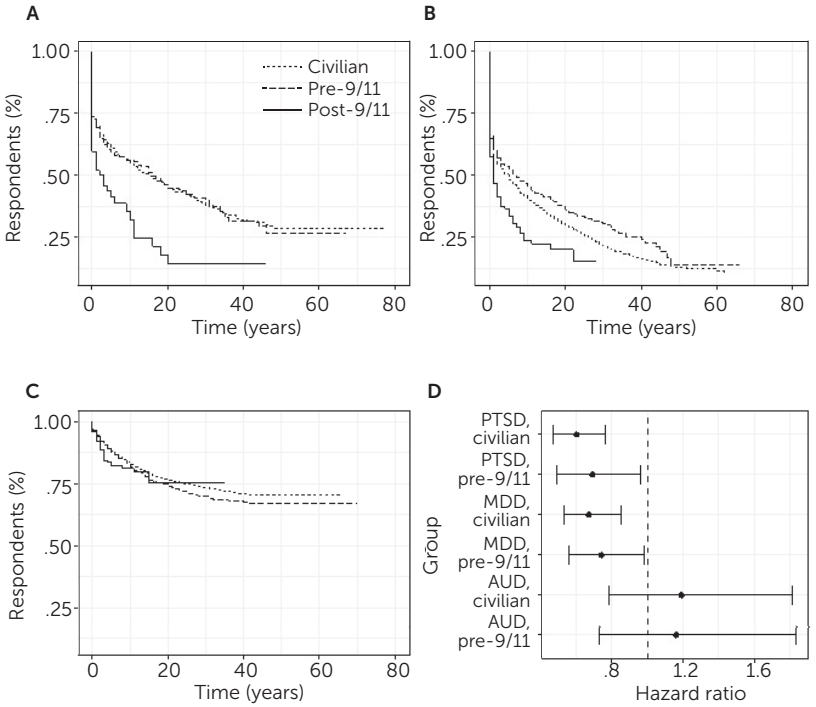
Subsequent sensitivity analyses assessed several potential sources of bias by controlling for additional demographic covariates that could be influenced by military service (marital status and income); restricting the sample to male respondents to account for the possibility that the increasing representation of women in the military influenced patterns of treatment among recent veterans (31); restricting treatment to formal care only, to assess exposure to more effective treatments; controlling for the co-occurrence of the other psychiatric disorders of interest (PTSD, depression, and alcohol use disorder), given that comorbidity has been associated with reduced treatment delay (31); and controlling for severity of PTSD, depression, and alcohol use disorder to rule out the possibility that differences in treatment delay were driven by differences in severity (22).

A final set of models examined the relationship between past-year VHA/TRICARE coverage and treatment delay to explore the possibility that treatment delay was influenced by efforts within VHA- or TRICARE-affiliated clinics to engage recent veterans in mental health treatment.

RESULTS

The sample included 14,916 unique respondents, including those with a lifetime diagnosis of PTSD (N=2,335), major

FIGURE 1. Delay in treatment seeking for posttraumatic stress disorder (PTSD), major depressive disorder (MDD), and alcohol use disorder (AUD), by veteran and service era status[a]



[a] The survival curve depicts Kaplan-Meier estimates of the length of time in years between the onset of (A) PTSD, (B) MDD, and (C) AUD and first receipt of care among 14,088 survey respondents, by veteran status and era of service (pre- or post-9/11). The values on the vertical axis indicate the percentage of respondents who have not received care by a given point in time. The (D) forest plot displays hazard ratios (HRs) and 95% confidence intervals indicating the instantaneous risk of receipt of treatment. HRs below 1 indicate that the comparison group delayed treatment longer than post-9/11 veterans. HRs are from Cox proportional hazard models adjusted for age, gender, and race-ethnicity.

depressive disorder (N=7,406), and alcohol use disorder (N=9,943). A majority of the sample were civilians (N=13,528), with 1,130 pre-9/11 veterans and 258 post-9/11 veterans (Table 1). Across all three groups, most respondents with lifetime PTSD received treatment for PTSD (58.3%–79.8%, in weighted percentages), and the majority with lifetime major depressive disorder received treatment for depression (69.3%–76.3%). Consistent with prior reports, a considerably smaller percentage of respondents with alcohol use disorder received treatment for alcohol use disorder (17.5%–26.3%) (23). (See Supplemental Table 2 in the online supplement for comparisons between pre-9/11 veterans, post-9/11 veterans, and civilians on the probability of ever receiving treatment.)

On the basis of unadjusted Kaplan-Meier models, median survival time (time at which 50% had received treatment) was shortest among post-9/11 veterans for PTSD (median=2.5 years versus 16.0 years for pre-9/11 veterans and 15.0 years for civilians) and for depression (1.0 years versus 7.0 years and 5.0 years, respectively). Median survival times could not be computed for alcohol use disorder, given that fewer than 50% of members in each group ever received treatment .

Cox proportional hazard models included 14,088 respondents with complete data (828 respondents were excluded, largely because of missing treatment data). Several demographic variables were associated with treatment delay (Table 2). In particular, men showed longer delays for depression treatment and shorter delays for alcohol use disorder treatment than women. Older individuals showed longer delays for PTSD and depression treatment than younger individuals. Black and Hispanic individuals showed longer delays for PTSD and depression treatment than non-Hispanic white individuals.

When post-9/11 veterans were specified as the reference group (specification 1), post-9/11 veterans with PTSD were less likely to delay PTSD treatment than both pre-9/11 veterans (adjusted hazard ratio [AHR]= 0.69, 95% CI=0.49–0.96) and civilians (AHR=0.60, 95% CI=0.47–0.76) (Table 2, Figure 1), after the analyses were adjusted for age, gender, and race-ethnicity. Similarly, post-9/11 veterans with depression were less likely to delay depression treatment than both pre-9/11 veterans (AHR=0.74, 95% CI=0.56–0.98) and civilians (AHR=0.67, 95% CI=0.53–0.85). No differences in treatment delay were observed between post-9/11 veterans and pre-9/11 veterans or civilians for alcohol use disorder. In models with civilians as the reference group (specification 2), pre-9/11 veterans and civilians did not differ in treatment delay for any of the three disorders.

In a series of five sensitivity analyses, post-9/11 veterans were less likely to delay PTSD and depression treatment than both pre-9/11 veterans and civilians, with one exception (Table 3). There was no difference between post-9/11 veterans and pre-9/11 veterans in delay of formal— as opposed to formal or informal—depression treatment.

In exploratory analyses, past-year VHA/TRICARE coverage was not associated with PTSD treatment delay (see Supplemental Table 4 in the online supplement). In particular, no differences were found in PTSD treatment delay between post-9/11 veterans with and without past-year VHA/TRICARE coverage (specification 1). Post-9/11 veterans with and without past-year VHA/TRICARE delayed PTSD treatment less than civilians did (AHR=1.70, 95% CI=1.24–2.34, and AHR=1.62, 95% CI=1.16–2.27, respectively) (specification 2).

TABLE 3. Association between veteran and service era status and treatment delay in five sensitivity models, by psychiatric condition[a]

	PTSD		Major depressive disorder		Alcohol use disorder	
Model and predictor	AHR	95% CI	AHR	95% CI	AHR	95% CI
Additional covariates[b]						
Civilian	.61	.48–.78	.67	.53–.85	1.15	.75–1.75
Pre-9/11 veteran	.69	.49–.98	.74	.56–.98	1.13	.72–1.79
Males only						
Civilian	.58	.42–.81	.64	.48–.86	1.40	.85–2.29
Pre-9/11 veteran	.57	.38–.88	.70	.49–.99	1.43	.84–2.44
Formal treatment[c]						
Civilian	.58	.46–.74	.67	.53–.86	1.28	.80–2.06
Pre-9/11 veteran	.68	.48–.95	.76	.58–1.01	1.29	.77–2.15
Comorbidity[d]						
Civilian	.59	.47–.76	.68	.54–.87	1.24	.81–1.88
Pre-9/11 veteran	.68	.48–.96	.73	.55–.96	1.17	.74–1.85
Symptom severity[e]						
Civilian	.60	.47–.76	.68	.53–.87	1.05	.66–1.68
Pre-9/11 veteran	.66	.47–.93	.73	.55–.97	1.06	.64–1.75

[a] Post-9/11 veterans are the reference group in all models. Previously modeled demographic variables (age, gender, race-ethnicity) were included in all sensitivity analyses but are not displayed. Adjusted hazard ratios (AHRs) were controlled for age, gender, and race-ethnicity. Smaller AHRs reflect longer delays in seeking treatment, and larger AHRs reflect shorter delays.
[b] Includes income and marital status.
[c] Excludes self-help groups and other informal treatment.
[d] Lifetime diagnosis of ≥1 of the other 2 psychiatric conditions; for example, the PTSD model included variables for the presence of major depressive disorder and/or alcohol use disorder.
[e] N of symptoms.

Past-year VHA/TRICARE coverage was associated with depression treatment delay, however. Specifically, post-9/11 veterans without past year VHA/TRICARE coverage showed longer delays in treatment for depression compared with post-9/11 veterans with past-year VHA/TRICARE coverage (AHR=0.56, 95% CI=0.35–0.90 (specification 1). In fact, only post-9/11 veterans with past-year VHA/TRICARE coverage delayed depression treatment less than civilians (AHR=1.89, 95% CI=1.43–2.49) (specification 2). No differences were observed in alcohol use disorder treatment delay between veterans with and without past-year VHA/TRICARE coverage.

DISCUSSION

To better understand patterns of mental health treatment among post-9/11 veterans, this study examined data from NESARC-III, a nationally representative sample of the U.S. population. We compared the degree to which post-9/11 veterans delay treatment for common psychiatric conditions versus treatment delay among pre-9/11 veterans and civilians. Results indicated that post-9/11 veterans are less likely than both pre-9/11 veterans and civilians to delay mental health treatment for PTSD and depression.

The differences were clinically meaningful. Median time to PTSD treatment was 2.5 years for post-9/11 veterans, compared with 16.0 years and 15.0 years, respectively, for pre-9/11 veterans and civilians. Median time to depression treatment was 1.0 years for post-9/11 veterans, compared with 7.0 years and 5.0 years, respectively, for pre-9/11 veterans and civilians. This pattern was not present for alcohol use disorder, for which all three groups reported low rates of treatment engagement.

Results for PTSD and depression were largely consistent across sensitivity analyses, suggesting that shorter treatment delay for post-9/11 veterans is not attributable to differences in demographic factors, symptom severity, or psychiatric comorbidity. However, there was no significant difference between pre- and post-9/11 veterans in delay of formal depression treatment. It may be that efforts to engage recent veterans in mental health treatment have placed greater emphasis on the need for formal treatment of PTSD than for depression.

The increased engagement in PTSD and depression treatment among post-9/11 versus pre-9/11 veterans could be attributable to a host of recent historic, cultural, and policy changes. A new policy requiring universal mental health screening postdeployment may have contributed to reduced treatment delay for post-9/11 veterans (35). Screening efforts may have improved detection of postdeployment mental health concerns and increased engagement in treatment (9, 17).

Other potential contributors are efforts by the VHA and other organizations to engage post-9/11 veterans in treatment (1, 12, 35, 36). These include educational public health initiatives, dissemination of educational resources for community providers, creation of programs targeting reintegration and mental health among returning veterans, suicide hotlines, and development of veteran-specific mobile health resources (16, 36–39). Although not designed specifically for post-9/11 veterans, efforts to improve detection of mental health concerns in VHA primary care settings (40) and integration of mental health services in these settings (PCMHI) may also have increased engagement (41).

Findings from exploratory analyses partially supported the possibility that past-year VHA/TRICARE coverage may be associated with decreased treatment delay for post-9/11 veterans. Post-9/11 veterans reporting no past-year VHA/TRICARE coverage delayed depression treatment longer than post-9/11 veterans reporting past-year VHA/TRICARE coverage. Past-year VHA/TRICARE coverage was not, however, associated with treatment delay for PTSD or alcohol use disorder. These analyses should be interpreted cautiously, given the small number of post-9/11 veterans with VHA/TRICARE coverage.

Although post-9/11 veterans experienced shorter treatment delays for PTSD and depression compared with civilians and pre-9/11 veterans and high rates of treatment receipt (74.8%−79.8%), engagement with alcohol use

disorder treatment for post-9/11 veterans was low (17.5%). This finding, which is consistent with previous reports (17, 23), is concerning, given the morbidity and mortality associated with alcohol use disorder (42, 43). Several factors may help explain low rates of treatment engagement among both veterans and civilians with alcohol use disorder. A study of over 22 million Americans with current substance use disorders who had not sought care in the past year found the most commonly stated reasons were feeling unready to stop drinking and a lack of health insurance or means to pay for treatment (44). Lack of problem recognition and stigma are also common reasons for not seeking substance abuse treatment (8, 45, 46). A review of 17 population studies indicated that alcohol misuse is less likely to be perceived as a mental illness and is more stigmatized than other psychiatric disorders (47), which may account for the lower rate of treatment engagement across our sample for alcohol use disorder compared with PTSD and depression. Limited alcohol use disorder treatment across multiple studies suggests that future research and clinical efforts to engage individuals in treatment are critically important. Future research could also explore why recent veterans are not seeking treatment faster for alcohol use disorder compared with veterans of earlier eras, unlike the pattern for PTSD and depression.

Although racial-ethnic differences were not the focus of this study, longer delays for PTSD and depression treatment were found for individuals from racial-ethnic minority groups compared with non-Hispanic whites. This finding is consistent with broader literature on mental health disparities indicating that individuals from racial-ethnic minority groups are less likely to engage in and more likely to delay mental health treatment (20). Future studies could examine risk and protective factors associated with treatment delay among members of racial-ethnic minority groups and interventions to increase engagement.

Limitations of this study included a modest number of veterans, particularly post-9/11 veterans, affecting our ability to detect small effects and the accuracy of observed effects. We also lacked information regarding where treatment was received, limiting our ability to draw conclusions regarding which engagement efforts were responsible for reduced treatment delay among post-9/11 veterans. Likewise, the VHA/TRICARE variable likely reflected different levels of access for pre-9/11 and post-9/11 veterans, and service connection, another aspect of access, was not assessed. The cross-sectional nature of the study increased risk of recall biases (e.g., inaccuracies in recalling age at symptom onset and treatment initiation for more temporally distant events), which may be larger for pre-9/11 veterans. Despite these limitations, the study had several strengths, including a large and nationally representative sample of the U.S. population, assessment of *DSM-5* diagnoses of psychiatric conditions prevalent among veterans and for which evidence-based treatments are available, and inclusion of a number of sensitivity analyses to increase confidence in the pattern of findings.

CONCLUSIONS

Post-9/11 veterans were less likely than pre-9/11 veterans and civilians to delay mental health treatment for PTSD and depression. Efforts in the past decade by the VHA, DoD, and nongovernmental organizations may have been influential in promoting mental health treatment engagement for this recent generation of military service members.

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REFERENCES

1. National Academies of Sciences, Engineering, and Medicine: Evaluation of the Department of Veterans Affairs Mental Health Services. Washington, DC, National Academies Press, 2018
2. Elbogen EB, Wagner HR, Johnson SC, et al: Are Iraq and Afghanistan veterans using mental health services? New data from a national random-sample survey. Psychiatr Serv 2013; 64:134–141
3. Seal KH, Metzler TJ, Gima KS, et al: Trends and risk factors for mental health diagnoses among Iraq and Afghanistan veterans using Department of Veterans Affairs health care, 2002–2008. Am J Public Health 2009; 99:1651–1658
4. Fulton JJ, Calhoun PS, Wagner HR, et al: The prevalence of posttraumatic stress disorder in Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) veterans: a meta-analysis. J Anxiety Disord 2015; 31:98–107
5. Kok BC, Herrell RK, Thomas JL, et al: Posttraumatic stress disorder associated with combat service in Iraq or Afghanistan: reconciling prevalence differences between studies. J Nerv Ment Dis 2012; 200:444–450

6. Ramchand R, Rudavsky R, Grant S, et al: Prevalence of, risk factors for, and consequences of posttraumatic stress disorder and other mental health problems in military populations deployed to Iraq and Afghanistan. Curr Psychiatry Rep 2015; 17:37
7. Thomas JL, Wilk JE, Riviere LA, et al: Prevalence of mental health problems and functional impairment among active component and National Guard soldiers 3 and 12 months following combat in Iraq. Arch Gen Psychiatry 2010; 67:614–623
8. Burnett-Zeigler I, Ilgen M, Valenstein M, et al: Prevalence and correlates of alcohol misuse among returning Afghanistan and Iraq veterans. Addict Behav 2011; 36:801–806
9. Hoge CW, Grossman SH, Auchterlonie JL, et al: PTSD treatment for soldiers after combat deployment: low utilization of mental health care and reasons for dropout. Psychiatr Serv 2014; 65: 997–1004
10. Sayer NA, Noorbaloochi S, Frazier P, et al: Reintegration problems and treatment interests among Iraq and Afghanistan combat veterans receiving VA medical care. Psychiatr Serv 2010; 61:589–597
11. Veterans and Military Service Organizations. Washington, DC, US Department of Veterans Affairs, Office of the Secretary, 2017. https://www.va.gov/vso/index.asp
12. Karlin BE, Ruzek JI, Chard KM, et al: Dissemination of evidence-based psychological treatments for posttraumatic stress disorder in the Veterans Health Administration. J Trauma Stress 2010; 23: 663–673
13. Cornwell BL, Brockmann LM, Lasky EC, et al: Primary care-mental health integration in the Veterans Affairs health system: program characteristics and performance. Psychiatr Serv 2018; 69: 696–702
14. Zivin K, Pfeiffer PN, Szymanski BR, et al: Initiation of primary care–mental health integration programs in the VA health system: associations with psychiatric diagnoses in primary care. Med Care 2010; 48:843–851
15. Industry Recognizes VA Campaigns for Raising Public Awareness for Veterans Mental Health Care. Washington, DC, US Department of Veterans Affairs, Office of Public and Intergovernmental Affairs, Sept 19, 2012. https://www.va.gov/opa/pressrel/pressrelease.cfm?id=2384
16. Straits-Tröster KA, Brancu M, Goodale B, et al: Developing community capacity to treat post-deployment mental health problems: a public health initiative. Psychol Trauma 2011; 3:283–291
17. Vanneman ME, Harris AHS, Chen C, et al: Postdeployment behavioral health screens and linkage to the Veterans Health Administration for Army Reserve component members. Psychiatr Serv 2017; 68:803–809
18. Hebert M, Rosenheck R, Drebing C, et al: Integrating peer support initiatives in a large healthcare organization. Psychol Serv 2008; 5: 216–227
19. Health Benefits: Returning Servicemembers (OEF/OIF/OND). Washington, DC, US Department of Veterans Affairs, Jan 15, 2019. https://www.va.gov/healthbenefits/apply/returning_service-members.asp
20. Wang PS, Berglund P, Olfson M, et al: Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry 2005; 62:603–613
21. Kessler RC, Foster CL, Saunders WB, et al: Social consequences of psychiatric disorders, I. educational attainment. Am J Psychiatry 1995; 152:1026–1032
22. Wang PS, Angermeyer M, Borges G, et al: Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World Psychiatry 2007; 6:177–185
23. Grant BF, Goldstein RB, Saha TD, et al: Epidemiology of *DSM-5* alcohol use disorder: results from the National Epidemiologic Survey on Alcohol and Related Conditions–III. JAMA Psychiatry 2015; 72:757–766
24. American Community Survey, 2012. Suitland, MD, Bureau of the Census, 2013
25. Hasin DS, Shmulewitz D, Stohl M, et al: Procedural validity of the AUDADIS-5 depression, anxiety and post-traumatic stress disorder modules: substance abusers and others in the general population. Drug Alcohol Depend 2015; 152:246–256
26. Hasin DS, Greenstein E, Aivadyan C, et al: The Alcohol Use Disorder and Associated Disabilities Interview Schedule–5 (AUDADIS-5): procedural validity of substance use disorders modules through clinical re-appraisal in a general population sample. Drug Alcohol Depend 2015; 148:40–46
27. Goldstein RB, Smith SM, Chou SP, et al: The epidemiology of *DSM-5* posttraumatic stress disorder in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions–III. Soc Psychiatry Psychiatr Epidemiol 2016; 51: 1137–1148
28. Lehavot K, Katon JG, Chen JA, et al: Post-traumatic stress disorder by gender and veteran status. Am J Prev Med 2018; 54:e1–e9
29. Smith SM, Goldstein RB, Grant BF: The association between post-traumatic stress disorder and lifetime *DSM-5* psychiatric disorders among veterans: data from the National Epidemiologic Survey on Alcohol and Related Conditions–III (NESARC-III). J Psychiatr Res 2016; 82:16–22
30. Hale AC, Sripada RK, Bohnert KM: Past-year treatment utilization among individuals meeting *DSM-5* PTSD criteria: results from a nationally representative sample. Psychiatr Serv 2018; 69:341–344
31. Olfson M, Liu SM, Grant BF, et al: Influence of comorbid mental disorders on time to seeking treatment for major depressive disorder. Med Care 2012; 50:227–232
32. Hosmer DW, Lemeshow S, May S: Applied Survival Analysis: Regression Modeling of Time-to-Event Data, 2nd ed. Hoboken, NJ, Wiley, 2008
33. Lumley T: Survey: Analysis of Complex Survey Samples. r Package, Version 3.32. Vienna, R Foundation for Statistical Computing, 2017
34. R: A Language and Environment for Statistical Computing. Vienna, R Foundation for Statistical Computing, 2018
35. Hoge CW, Auchterlonie JL, Milliken CS: Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. JAMA 2006; 295:1023–1032
36. Sherman MD, Larsen JL: Family-focused interventions and resources for veterans and their families. Psychol Serv 2018; 15: 146–153
37. Danish SJ, Antonides BJ: What counseling psychologists can do to help returning veterans. Couns Psychol 2009; 37:1076–1089
38. Knox KL, Kemp J, McKeon R, et al: Implementation and early utilization of a suicide hotline for veterans. Am J Public Health 2012; 102(suppl 1):S29–S32
39. SAMHSA's Efforts to Support Veterans and Military Families. Rockville, MD, Substance Abuse and Mental Health Services Administration, Oct 12, 2018. https://www.samhsa.gov/veterans-military-families/samhsas-efforts
40. Seal KH, Bertenthal D, Miner CR, et al: Bringing the war back home: mental health disorders among 103,788 US veterans returning from Iraq and Afghanistan seen at Department of Veterans Affairs facilities. Arch Intern Med 2007; 167:476–482
41. Bohnert KM, Pfeiffer PN, Szymanski BR, et al: Continuation of care following an initial primary care visit with a mental health diagnosis: differences by receipt of VHA primary care--mental health integration services. Gen Hosp Psychiatry 2013; 35:66–70
42. Kendler KS, Ohlsson H, Karriker-Jaffe KJ, et al: Social and economic consequences of alcohol use disorder: a longitudinal cohort and co-relative analysis. Psychol Med 2017; 47:925–935
43. Lozano R, Naghavi M, Foreman K, et al: Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012; 380:2095–2128

44. Han B, Hedden SL, Lipari R, et al: Receipt of Services For Behavioral Health Problems: Results From the 2014 National Survey on Drug Use and Health. Rockville, MD, Substance Abuse and Mental Health Services Administration, 2015
45. Probst C, Manthey J, Martinez A, et al: Alcohol use disorder severity and reported reasons not to seek treatment: a cross-sectional study in European primary care practices. Subst Abuse Treat Prev Policy 2015; 10:32
46. Kiernan MD, Osbourne A, McGill G, et al: Are veterans different? Understanding veterans' help-seeking behaviour for alcohol problems. Health Soc Care Comm (Epub ahead of print, May 31, 2018)
47. Schomerus G, Lucht M, Holzinger A, et al: The stigma of alcohol dependence compared with other mental disorders: a review of population studies. Alcohol Alcohol 2011; 46:105–112