Minimally Adequate Mental Health Care and Latent Classes of PTSD Symptoms in
Female Iraq and Afghanistan Veterans

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Abstract

Female veterans of Operations Enduring and Iraqi Freedom, and Operation New Dawn (OEF/OIF/OND) represent a growing segment of Department of Veterans Affairs (VA) health care users. A retrospective analysis used national VA medical records to identify factors associated with female OEF/OIF/OND veterans' completion of minimally adequate care (MAC) for PTSD, defined as the completion of at least nine mental health outpatient visits within a 15-week period or at least twelve consecutive weeks of medication use. The sample included female OEF/OIF/OND veterans with PTSD who initiated VA health care between 2007-2013, and were seen in outpatient mental health ($N = 2183$). Multivariable logistic regression models examined factors associated with completing MAC for PTSD, including PTSD symptom expression (represented by latent class analysis), sociodemographic, military, clinical, and VA access factors. Within one year of initiating mental health care, 48.3% of female veterans completed MAC. Race/ethnicity, age, PTSD symptom class, additional psychiatric diagnoses, and VA primary care use were significantly associated with completion of MAC for PTSD. Results suggest that veterans presenting for PTSD treatment should be comprehensively evaluated to identify factors associated with inadequate completion of care. Treatments that are tailored to PTSD symptom class may help to address potential barriers.

Key words: women, veterans, service utilization, posttraumatic stress disorder

1. Introduction

Among military personnel returning from Afghanistan (Operation Enduring Freedom [OEF]) and Iraq (Operation Iraqi Freedom [OIF] and Operation New Dawn [OND]), studies have consistently demonstrated a high prevalence of mental health disorders, including posttraumatic stress disorder (PTSD) (Hoge et al., 2004; Milliken et al., 2007; Seal et al., 2007; Tanelian and Jaycox, 2008; Hermann et al., 2012). Studies indicate that receiving early and adequate evidence-based treatment for PTSD can reduce symptoms and prevent chronic functional impairment (Foa et al., 2005; Monson et al., 2006; Difede et al., 2014; Gray et al., 2014; Maguen et al., 2014). Ongoing U.S. Department of Veterans Affairs (VA) expansion efforts to improve access to mental health care have included system-wide increases in the number of clinicians trained to administer multiple types of evidence-based psychotherapies for a number of mental health disorders (Mott et al., 2014). Effective evidence-based treatments for PTSD, including Cognitive Processing Therapy and Prolonged Exposure Therapy, have been disseminated throughout the VA and are available to veterans who present for care at most VA facilities (Hermann et al., 2012). However, multiple studies indicate that many newly returning veterans with PTSD do not access treatment, delay treatment, or do not complete a sufficient course of treatment (Seal et al., 2010; Lu et al., 2011), and the majority of patients with new diagnoses of PTSD do not receive psychotherapy (Mott et al., 2014).

The current study examined the possibility that patterns of PTSD symptom endorsement may be related to veterans' use of mental health services for PTSD. Latent class analysis (LCA) has been used in civilian and veteran samples to identify subgroups of individuals who share similar patterns of PTSD symptom endorsement. Previous studies have identified three (Breslau et al., 2005; Ayer et al., 2011; Steenkamp et al., 2012; Steuwe et al., 2012) or four (Geronazzo

Alman et al., 2012; Au et al., 2013; Maguen et al., 2013; Rosellini et al., 2014) latent classes , often characterized by minimal/mild, intermediate, and severe PTSD symptoms. PTSD latent classes have also been distinguished by specific symptom elevations. For example, emotional numbing in PTSD has been associated with latent class membership. Breslau et al. (2005) reported that individuals in a pervasive disturbance symptom class reported higher levels of emotional numbing (Breslau et al., 2005), and individuals in two intermediate symptom classes were distinguished by high and low emotional numbing symptom levels in two recent studies of male and female Iraq and Afghanistan veterans (Maguen et al., 2013; Hebenstreit et al., 2014).

Although the latent structure of PTSD symptoms has been explored in several veteran samples, few studies have focused specifically on female veterans, whose PTSD symptom expression may vary from that of male veterans. Female veterans may be more likely than males to endorse concentration difficulties and distress related to reminders of a traumatic event, while male veterans may be more likely than females to endorse hypervigilance, emotional numbing, and nightmares (King et al., 2013). From a conceptual standpoint, although one study found that the emotional numbing model of PTSD (King et al., 1998) was superior to the dysphoria model (Simms et al., 2002) in male veterans, neither model was superior in female veterans (Hall et al., 2012). Given that the number of female VA patients increased from 159,000 to 360,000 between 2000 and 2012 and is expected to double again within the next 10 years, recent research and policy initiatives have focused on understanding gender differences in VHA utilization and access to care (Frayne et al., 2012). As the representation of female veterans within the VA continues to increase, it is important to examine the clinical presentation of PTSD symptoms within this population, as well as other factors that may relate to female veterans' completion of minimally adequate care for PTSD.

As defined by multiple prior studies, minimally adequate care (MAC) for PTSD refers to the completion of a minimum number of mental health visits within a one-year period (Seal et al., 2010; Lu et al., 2011; Spoont et al., 2011). Several factors have been associated with veterans' completion of MAC. For example, the presence of mental health comorbidity in those with PTSD and older patient age have been associated with increased likelihood of completing MAC for PTSD among OEF/OIF veterans (Seal et al., 2010). In keeping with prior studies as well as guidelines for evidence-based psychotherapies for PTSD, we defined MAC for PTSD as one or both of the following: completion of nine or more outpatient mental health visits (Foa et al., 2005; Monson et al., 2006; Lu et al., 2011) within any 15-week period (Seal et al., 2010); or at least twelve consecutive weeks of treatment with a medication endorsed by VA/DoD PTSD practice guidelines. These medications include selective serotonin reuptake inhibitors (SSRI; Wang et al., 2002; Seal et al., 2010; Department of Veterans Affairs and Department of Defense, 2010), venlafaxine, and/or mirtazapine (Department of Veterans Affairs and Department of Defense, 2010).

Our goal was to identify the association of PTSD symptom classes with completion of MAC for PTSD within the first year of mental health outpatient treatment. In addition to PTSD symptom class, the current study assessed the following factors as predictors of MAC for PTSD: (1) sociodemographic factors (e.g., age, race, ethnicity, marital status), (2) military service factors (e.g., branch of service, number of deployments), (3) access/temporal factors (e.g., distance to closest VA facility, type of nearest VA facility, frequency of primary care utilization, time from the end of most recent deployment to the onset of outpatient mental health services), and (4) clinical factors (e.g., number of comorbid mental health diagnoses, PTSD symptom class).

2. Methods

2.1. Study population

We examined administrative data from 2,183 Iraq and Afghanistan female veterans who were new users of VA health care (after their most recent deployment), had an initial mental health outpatient visit (including integrated primary-mental health care) between October 1, 2007 and July 31, 2012, had a diagnosis of PTSD (309.81; International Classification of Diseases, Ninth Revision) that was recorded at two or more clinical encounters, completed the PTSD checklist (PCL) within 30 days of their first outpatient mental health visit, and had been in the VA system for at least one year by July 31, 2013. The study was approved by the Committee on Human Research, University of California, San Francisco and the Human Research Protection Program at the San Francisco VA Medical Center.

2.2. Data source

The VA OEF/OIF/OND Roster includes information on veterans' demographic characteristics as well as aspects of their military service, such as their rank and the branch of the military with which they served. The Roster was linked to two other national administrative databases: (1) the VA National Patient Care Database (NPCD) to obtain information on VA clinic visits, associated clinical diagnoses, and additional race/ethnicity data, and (2) the VA Corporate Data Warehouse (CDW) to obtain pharmacy data and PTSD checklist results.

The VA National Patient Care Database includes data from outpatient and inpatient visits to any of the approximately 150 VA hospitals and over 900 VA clinics nationwide. The electronic record includes the date of the visit, a code designating the type of visit, patient race and ethnicity, and the diagnosis(es) associated with the visit classified using the International Classification of Diseases, Ninth Revision Clinical Modification (ICD-9-CM) codes. Visits to

mental health outpatient services were identified using clinic stop codes (Cohen et al., 2010; Seal et al., 2010; Maguen et al., 2012). Mental health outpatient services included visits to primary care-mental health integrated care clinics. Fee basis codes designated care rendered at non-VA facilities reimbursed by VA, but did not capture all non-VA care (e.g., privately insured). Data on the distance to and type of nearest VA medical facility based on each veteran's zip code (in Roster) were calculated by the VA Planning Systems Support Group. Medication use data and PTSD checklist screening results were extracted from the VA Corporate Data Warehouse (CDW), a national data repository comprising data from several Veterans Health Administration (VHA) clinical and administrative systems, including the Mental Health Assessment.

2.3. Study variables

Our primary outcome variable was the completion of MAC for PTSD. We applied broad thresholds to determine completion of MAC for PTSD in order to account for scheduling delays that may have prevented veterans from beginning and completing treatment, such as clinic availability, scheduling conflicts, and occasional missed appointments. We examined visits that occurred within the full calendar year following diagnosis, and allowed for the minimum nine mental health outpatient visits to take place within a 15-week period. We also included 12 consecutive weeks of medication use (including an SSRI, venlafaxine, or mirtazapine) in our definition of MAC for PTSD in order to account for veterans who preferred to use medication as an initial treatment approach. Because of a high degree of overlap with patients being prescribed medication and also receiving psychotherapy, we chose to include both in the definition of MAC rather than artificially separating them into two separate MAC variables.

This study used four distinct classes of PTSD that were identified in the current sample by Hebenstreit, Madden, and Maguen (2014) using the seventeen symptoms from the PCL.

These PTSD symptom classes were used as a predictor of completing MAC for PTSD, and included the following: 1) the High Symptom class (50% of the sample) was the most symptomatic class, with a very high probability of endorsing PTSD symptoms except for having flashbacks, amnesia and feelings of a foreshortened future; 2) the Intermediate Symptom class (20.6% of sample) was characterized by symptoms of reexperiencing (particularly intrusive memories and psychological reactivity), as well as avoidance, and some symptoms of increased arousal (particularly insomnia); 3) the Intermediate Symptom with High Emotional Numbing class (20.8%) showed similar overall symptom severity, but diverged sharply from the Intermediate Symptom class by having a very high probability of endorsing symptoms of having diminished interest, feeling detached and restricted affect. The Intermediate Symptom with High Emotional Numbing Class was also highly likely to endorse irritability and concentration problems, while the Intermediate Symptom class was less likely to do so. Finally, 4) the Low Symptom class (8.6%) was characterized by a very low probability of endorsing all of the 17 PTSD symptoms, except for insomnia and irritability.

Several other variables were included as predictors of MAC completion. We used the OEF/OIF/OND Roster to obtain dates of birth, gender, marital status, component type (active duty component versus National Guard or Reserve), military rank (enlisted versus officer), service branch (Army, Air Force, Marines, Navy/Coast Guard), number of deployments (veterans were categorized as having been deployed once or more than once), and date of the end of last deployment. Race/ethnicity is a composite variable with the following values: White, Black, Hispanic, Asian/Pacific Islander, or other/unknown. Race and ethnicity data comes primarily from the OEF/OIF/OND Roster and secondarily from VA inpatient and outpatient encounters data. We merged the VA and Roster data such that Roster race/ethnicity data took

precedence, unless it was missing/unknown, in which case VA race/ethnicity data was used, if it existed. We allowed the Roster race/ethnicity to take precedence because this was the source of all other demographic and military data for our study. Veterans were categorized by whether they had none, one, or two or more comorbid mental health diagnoses, which were obtained from encounter diagnoses. Mental health diagnoses included depression (293.83, 296.20–296.25, 296.30–296.35, 300.4, and 311), PTSD (309.81), other anxiety disorders (300.00–300.09, 300.20–300.29, and 300.3), adjustment disorders (308, 309.0–309.9, excluding 309.81), alcohol use disorders (305.00–305.03 and 303), and drug use disorders (305.20–305.93 and 304).

We controlled for several organizational factors that may have been related to use of mental health care. Data were obtained on the distance to (in miles), and type of, nearest VA facility (VA medical center vs. VA community-based outpatient clinic). As a broad measure of primary care service use, regular use was defined as a mean of ≤ 6 months between visits. This variable was calculated during the time period between the end of last deployment and the end of the study period, and the time frame was selected based on patient-level descriptive analyses indicating that the median time between primary care visits was less than six months.

2.4. Data analysis

This study utilized latent classes of PTSD symptoms that were identified in a previous LCA of the sample (Hebenstreit et al., 2014). The aim of LCA is to uncover latent classes that explain the observed relationships between multivariate categorical variables (e.g., PTSD symptoms) by clustering individuals such that the within-cluster responses are statistically independent (Hagenaars and McCutcheon, 2002). For the present study, bivariable and multivariable logistic regressions examined latent classes of PTSD symptoms as well as key demographic, military, temporal and clinical characteristics as predictors of completing MAC for

PTSD during the first year. Adjusted odds ratios were calculated using all listed variables. To strike a balance between maximizing the number of comparisons between pairs of latent classes while focusing on the most relevant comparisons, analyses were completed using two different PTSD latent class reference groups (“Low” and “Intermediate”). Descriptive statistics and logistic regression analyses were carried out with SAS (Version 9.3, Cary, NC).

3. Results

The current study examined completion of MAC in female veterans who returned from recent military service in Iraq and Afghanistan. The sample had a median age of 29 years (*IQR*: 20-66); 1105 (51%) were white, 591 (27%) were black, 302 (14%) were Hispanic, 93 (4%) were Asian/Pacific Islander, and 92 (4%) were other/unknown race/ethnicity (see Table 1 for additional demographic information). Of the 2,183 women Veterans in the study, 1055 (48.3 %) completed minimally adequate care within the first year of initiating mental health care. Among participants who completed minimally adequate care with 50.0% met criteria based on outpatient mental health visits alone, 38.3% met criteria based on medication use alone, with 11.7% meeting criteria for both outpatient mental health visits and medication use. In the adjusted regression models, more frequent (versus less frequent) primary care utilization, greater mental health comorbidity (one or more comorbidities versus no comorbidities), and high symptom PTSD latent class (versus Low Symptom class) were associated with greater likelihood of completing MAC for PTSD (Table 2). Black or Hispanic race/ethnicity (vs. white race) and younger age (ages 18-24 vs. ages 25-29, 30-39, and 40 or older) were associated lower likelihood of engaging in MAC for PTSD within the first year (Table 2). When the analyses were repeated using the Intermediate Symptom class as a reference group, a significant unadjusted odds ratio

suggested that the Intermediate with High Emotional Numbing class was less likely than the Intermediate Symptom class to complete MAC for PTSD (Table 3).

4. Discussion

Among 2,183 female Iraq and Afghanistan veterans in the current study who were new VA patients on or after October 1, 2007, 48.3% completed minimally adequate care within the first year of initiating mental health care. This is consistent with previous findings indicating that the majority of veterans with new diagnoses of PTSD do not receive minimally adequate treatment after an initial diagnosis (Lu et al., 2011; Seal et al., 2010; Spoont et al., 2010). . Given our flexible approach to determining MAC for PTSD (e.g., including both pharmacotherapy and psychotherapy), the fact that the majority of veterans did not complete adequate treatment is concerning and suggests that further investigation of the variables that influence treatment completion may help target efforts to increase utilization and access to care among female veterans.

Several factors in the current study were independently associated with having completed MAC for PTSD within the first year. For example, we found that Black and Hispanic race/ethnicity were each associated with decreased likelihood of engaging in MAC for PTSD in comparison to white female veterans. Minority race/ethnicity has been associated with lower likelihood of receiving MAC for serious mental illness and depression (Wang et al., 2002; Busch et al., 2004) and PTSD (Roberts et al., 2011) as well as longer delay in initiating mental health care and engaging in MAC for mental health problems (Maguen et al., 2012). Although further research is required in Hispanic female veterans, some evidence suggests that many Hispanic patients may express a preference for psychotherapy rather than pharmacotherapy for PTSD (Eisenman et al., 2008), with other research indicating that Hispanic ethnicity is not associated

with mental health treatment use among veterans with PTSD (Spoont et al., 2009). Other studies have suggested Black women are at risk for not beginning, or not completing, treatment for PTSD. For example, one recent study found that Black women were less likely to start Cognitive Processing Therapy for PTSD after completing the initial pretreatment assessment sessions (Iverson et al., 2011), while another found that Black women were less likely than White women to complete PTSD treatment (Lester et al., 2010). The current study included medication use in our definition of MAC for PTSD, and so these results may partially reflect racial and ethnic differences in the utilization of specific types of treatment. For example, Spoont et al. (2009) found that Black veterans were no less likely than Whites to receive an initial prescription for depression medication, but were less likely to receive at least four consecutive monthly prescriptions. Taken together, the current study's findings suggest that cultural factors may play an important role in understanding PTSD treatment utilization in racial and ethnic minority female veterans. Findings also suggest that minority women may benefit from outreach efforts as well as efforts to meet their treatment preferences and to support them through treatment completion.

We found that patients with one or more mental health comorbidities were more likely to complete MAC for PTSD than patients with no comorbid mental health diagnoses. Other studies of utilization in OEF and OIF veterans with PTSD have found that comorbidities are associated with earlier initiation of mental health treatment (Cohen et al., 2010), as well as a greater likelihood of attending any follow-up mental health treatment and engaging in MAC (Seal et al., 2010). The presence of other psychiatric diagnoses in addition to PTSD may indicate greater clinical need and functional impairment, increasing the likelihood that patients will seek and complete adequate treatment. We also found that patients in the High Symptom PTSD latent

class were more likely to complete MAC for PTSD than those in the Low Symptom class, which may support the explanation that greater symptom severity can increase the likelihood of treatment completion. In comparison to women ages 18-24, veterans in all other age groups (ages 25-29, 30-39, and 40 and older) were more likely to complete MAC for PTSD. This is consistent with previous studies indicating that older age is associated with increased likelihood of completing MAC for PTSD in a large sample of male and female OEF/OIF veterans (Seal et al., 2010), and was associated with a larger number of PTSD clinic visits among recently diagnosed veterans (Lu et al., 2011)

Veterans who utilized primary care at least semiannually were more likely to complete MAC for PTSD than veterans who utilized primary care less frequently. This may reflect a higher level of general use of VA care, suggesting that veterans who use VA services regularly for other medical issues are more likely to use VA mental health services, and vice versa. Because we included 12 consecutive weeks of medication use in our definition of MAC for PTSD, it is also possible that some of the women in the study were prescribed medication by their primary care provider.

Finally, unadjusted comparisons indicated that veterans in the Intermediate with High Emotional Numbing class were less likely than those in the Intermediate Symptom class to complete MAC for PTSD. While both Intermediate classes may report similar overall PTSD symptom severity, the High Emotional Numbing class was characterized by greater reports of diminished interest, feeling detached, and restricted affect. Due to increased emotional numbing, patients in this class may have more difficulty with identifying PTSD as a source of functional impairment or recognizing their own need for clinical services, as well as difficulty with experiencing emotions in session. Patients with increased emotional numbing may benefit from

motivational interventions geared towards helping them to engage in treatment, as well as a focus on behavioral activation. Compared to the Intermediate class, patients in the Intermediate with High Emotional Numbing class also showed higher reported levels of irritability and concentration problems, which may interfere with their ability to complete treatment-related assignments, to adhere to a medication treatment regimen, or to tolerate the emotional distress associated with treatment. As a result, the High Emotional Numbing class may present differently from a clinical standpoint, and may require different approaches to treatment.

When interpreting these findings, there are a number of limitations to consider. First, clinic stop codes are frequently used to measure of service utilization for VA clinics as well as fee-basis care, but do not provide information about the content of psychotherapy sessions or mental health visits. Therefore it was not possible to determine the types of PTSD treatments that were administered during mental health outpatient visits, nor was it possible to determine whether PTSD was the primary, secondary, or only diagnosis associated with each visit. In addition, we were not able to examine many organizational factors that may influence use of mental health services. For example, we controlled for the distance to the nearest VA as well as the nearest facility type, but were not able to account for factors such as differences between VHA facilities, receipt of care at multiple and/or more distant VHA locations, or frequent patient relocation. Future exploration of these and other VHA organizational factors may enhance our understanding of MAC for PTSD.

Because the study identified PTSD latent classes based on PCL item responses, the sample was restricted to women who had completed the PCL within 30 days of the first outpatient mental health visit, and whose PCL responses were recorded in the national VA database. Our sample did not include patients who did not have a PTSD diagnosis associated

with at least two clinical visits, and we were not able to examine possible differences between women with and without a PCL in their records. Therefore, the results may not reflect female veterans who did not seek mental health treatment, who were not assessed or diagnosed with PTSD, or who did not complete at least two VA visits. We also examined data from female veterans who had been diagnosed with PTSD based on a clinician diagnosis rather than a gold standard measure of PTSD. Although not the focus of this investigation, the impact of medical comorbidity profiles on mental health utilization in those with PTSD may be an important future area of investigation. Finally, the study sample included veterans of Iraq and Afghanistan, and the results may not be generalizable to female veterans from other service eras.

Our findings suggest that multiple factors are related to completion of MAC for PTSD in female OEF/OIF/OND veterans and have important implications for mental health care. These results suggest that a comprehensive evaluation of veterans presenting for PTSD treatment should include the identification of factors that are associated with a risk of not engaging in MAC for PTSD so that providers can proactively take steps to address potential barriers to care. As the number of female veterans continues to grow, longitudinal analysis may provide additional information about the stability of the relationships between these factors and completion of MAC for PTSD over time, as well as evaluating other relationships that may emerge later during the years following initial outpatient mental health engagement.

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Table 1. Demographic and military service characteristics for total sample (N = 2,183)

Variable	N	%
Age at first outpatient visit (years)		
18-24	408	18.7
25-29	756	34.6
30-39	608	27.9
40+	411	18.8
Race/ethnicity		
White	1105	50.6
Black	591	27.1
Hispanic	302	13.8
Asian/PI	93	4.3
Other/Unknown	92	4.2
Marital status		
Never married	1133	51.9
Married	820	37.6
Divorced/Separated/Widowed	230	10.5
Component		
Active Duty	1458	66.8
Reserves/National Guard	725	33.2

Rank ^a		
Enlisted	2015	92.3
Officer	168	7.7
Branch of service		
Army	1521	69.7
Air Force	248	11.4
Marines	135	6.2
Navy & Coast Guard	279	12.8
Number of deployments		
One	1414	64.8
More than one	769	35.2
Closest VA facility (miles)		
0-10	1318	60.4
11-25	620	28.4
26-50	187	8.6
50+	16	0.7
Unknown	42	1.9
Nearest VA facility Type		
VA medical center	657	30.1
Community-based outpatient clinic	1434	65.7
Unknown	92	4.2

^a This sample included Enlisted members and Officers of any level who sought VA care. Warrant Officers were included in the “Officers” category.

Table 2. Demographic and military characteristics and PTSD latent class as predictors of having received minimally adequate care^a
within one year of first mental health outpatient visit among women veterans

Variable	Completed MAC (%)	OR	95% CI	AOR	95% CI
Age at first outpatient visit (years)					
18-24	41.2	1.00		1.00	
25-29	46.4	1.24	0.97-1.58	1.35 [*]	1.03-1.76
30-39	50.3	1.45 ^{**}	1.12-1.86	1.54 ^{**}	1.14-2.1
40+	56.0	1.82 ^{***}	1.38-2.4	2.00 ^{***}	1.41-2.8
Race/ethnicity					
White	50.9	1.00		1.00	
Black	46.5	0.84	0.69-1.03	0.73 ^{**}	0.59-0.91
Hispanic	42.1	0.74 ^{**}	0.54-0.91	0.61 ^{**}	0.47-0.81
Asian/PI	48.4	0.91	0.59-1.38	0.73	0.47-1.15
Other/Unknown	50.0	0.97	0.63-1.48	0.84	0.53-1.32
Marital status					
Never married	45.0	1.00		1.00	
Married	51.7	1.31 ^{**}	1.09-1.57	1.11	0.91-1.36
Divorced/Separated/Widowed	52.6	1.36 [*]	1.02-1.80	1.06	0.77-1.45
Component					

Active Duty	49.0	1.00		1.00	
Reserves/National Guard	46.9	0.92	0.77-1.10	0.95	0.77-1.17
Rank ^b					
Enlisted	48.1	1.00		1.00	
Officer	50.6	1.10	0.81-1.51	0.94	0.67-1.33
Branch of service					
Army	47.0	1.00		1.00	
Air Force	49.2	1.09	0.83-1.43	1.06	0.79-1.42
Marines	53.3	1.29	0.91-1.83	1.46	1.00-2.1
Navy & Coast Guard	52.3	1.24	0.96-1.60	1.25	0.95-1.66
Number of deployments					
One	48.4	1.00		1.00	
More than one	48.2	0.99	0.83-1.19	1.00	0.83-1.22
Time from end of last deployment to first outpatient visit	N/A	1.02	0.98-1.07	1.01	0.97-1.06
Closest VA facility (miles)					
0-10	48.7	1.00		1.00	
11-25	47.1	0.94	0.77-1.13	0.88	0.72-1.08
26-50	48.7	1.00	0.73-1.36	0.96	0.69-1.34
50+	37.5	0.63	0.23-1.75	0.59	0.20-1.75
Unknown	57.1	1.40	0.75-2.6	0.94	0.39-2.2

Nearest VA facility Type					
VA medical center	49.5	1.00		1.00	
Community-based outpatient	47.3	0.92	0.76-1.10	0.93	0.76-1.13
Unknown	56.5	1.33	0.86-2.1	1.48	0.80-2.7
PC utilization					
Less than semiannual	36.7	1.00		1.00	
At least semiannual	52.6	1.91 ^{***}	1.57-2.3	1.77 ^{***}	1.44-2.2
Number of comorbidities ^c					
None	29.1	1.00		1.00	
One	45.9	2.07 ^{***}	1.59-2.7	1.91 ^{***}	1.45-2.5
Two or more	57.8	3.34 ^{***}	2.6-4.3	3.09 ^{***}	2.4-4.1
PTSD Latent Class					
Low	43.5	1.00		1.00	
Intermediate with high EN	39.2	0.84	0.60-1.18	0.92	0.64-1.31
Intermediate	46.7	1.14	0.81-1.60	1.17	0.82-1.68
High	53.7	1.51 ^{**}	1.11-2.1	1.55 ^{**}	1.12-2.2

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Note. Adjusted binomial logistic regression analyses adjust for all listed demographic, military, temporal and clinical variables.

^a Minimally adequate care defined as 9+ mental health outpatient visits within any 15 week period and/or 12+ consecutive weeks of SSRI, venlafaxine, or mirtazapine use.

^b This sample included Enlisted members and Officers of any level who sought VA care. Warrant Officers were included in the “Officers” category.

^c Comorbid mental health diagnoses could include depression, anxiety disorder, adjustment disorder, alcohol use disorder, and drug use disorder.

Table 3. Logistic regression of having received minimally adequate care^a in first year of MHO with Latent Class as predictor (Intermediate Class as reference group)

Variable	Completed MAC (%)	OR	95% CI	AOR	95% CI
Latent Class					
Intermediate (ref)	46.7	1.00		1.00	
Low	43.5	0.86	0.62-1.21	0.88	0.62-1.26
Intermediate with High EN	39.2	0.75*	0.57-0.97	0.77	0.58-1.01
High	53.7	1.32*	1.06-1.64	1.31*	1.04-1.64

* $p < 0.05$.

Note. Adjusted binomial logistic regression analyses adjust for all listed demographic, military, temporal and clinical variables.

^a Minimally adequate care defined as 9+ mental health outpatient visits within any 15 week period and/or 12+ consecutive weeks of SSRI, venlafaxine, or mirtazapine use.