



## Discrepancies in diagnostic records of military service members with self-reported PTSD: Healthcare use and longitudinal symptom outcomes

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### ABSTRACT

**Objective:** The study compared healthcare utilization and posttraumatic stress disorder (PTSD) symptom trajectories of active duty service members (ADSM) with self-reported PTSD based on whether they had a PTSD diagnosis in the electronic health record (EHR).

**Methods:** ADSM meeting study criteria for self-reported PTSD (N = 470) were grouped according to EHR-PTSD diagnostic status. Participants completed PTSD symptom assessments over a 12 month period. We used log binomial regression and linear mixed model to examine predictors of receiving an EHR-PTSD diagnosis and to analyze healthcare utilization and symptom trajectories based on diagnostic status.

**Results:** Thirty percent of ADSM with study-identified PTSD had an EHR-PTSD diagnosis. Combat exposure and PTSD severity predicted EHR-PTSD diagnosis. ADSM without the diagnosis were more likely to have an adjustment disorder diagnosis. Participants with an EHR-PTSD diagnosis utilized more healthcare and reported worse PTSD symptoms over 12 months.

**Conclusions:** Findings suggest providers are more likely to record PTSD diagnoses for more severe, complex cases. While less severe cases may be less likely to receive a PTSD diagnosis, they may still access and benefit from care. Findings have implications for use of EHRs to describe health patterns and inform practices and policy in the Military Health System.

### 1. Introduction

Posttraumatic stress disorder (PTSD) is relatively common among primary care patients, with current prevalence ranging between 2% and 39% [1,2]. However, discrepancies are common between PTSD diagnoses recorded in the electronic health record (EHR) and a designation of PTSD established by validated screening instruments [1,3–6]. Among Veterans Affairs studies, instrument-derived PTSD status did not match EHR diagnosis for one-quarter to half of all patients [3,5]. Similar patterns have been identified in civilian primary care settings [4,6]. This discrepancy raises concerns that large numbers of cases of PTSD are not being identified, diagnosed, or treated, which has implications for both practitioners and policymakers [1,4].

Several factors have been associated with the likelihood of a PTSD diagnosis being recorded in the EHR within civilian and veteran populations. Patient factors include combat or trauma history, comorbid mental health diagnoses, mental health specialty visits, somatic

symptoms, and PTSD symptom severity [1,3,5,7]. Concerns about stigma may lead some clinicians to record an alternative diagnosis in the EHR when a PTSD diagnosis is warranted. Wilk et al. [8] found that clinicians did not record a PTSD diagnosis for 41% of active duty service members (ADSM) whom the clinicians determined to have PTSD, often due to concerns about stigma. Screening measures and criteria may also influence the discrepancy between instrument-derived PTSD and EHR-PTSD diagnosis [9]. The use of self-report measures, particularly when administered in a non-clinical, anonymous context, may increase the likelihood of identifying PTSD. Previous research found a substantial increase in PTSD symptom reporting among ADSM when completing anonymous versus official military health surveys [10]. Similarly, routine screening in primary care may capture patients with a greater range of symptom severity who might not recognize their symptoms as potential mental health issues or seek specialty care. As such, routine screening for PTSD has been incorporated into primary care practice for high risk populations [11,12].

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A growing literature has addressed factors associated with discrepant findings between study-identified PTSD using clinical screening tools and a diagnosis of PTSD recorded in the EHR. The majority of these studies comparing PTSD prevalence rates were cross-sectional and did not evaluate long-term healthcare utilization or longitudinal symptom severity. The consistent finding that PTSD is under recorded in the EHR may lead to assumptions that patients who do not receive a PTSD diagnosis do not receive care and experience poorer outcomes. Whether through misdiagnosis or omitting a diagnosis, inaccurate diagnoses might adversely affect access to or engagement in care, subsequently influencing symptom trajectories and recovery. This is particularly concerning since patients with PTSD symptoms often do not seek treatment and infrequently receive minimally adequate care [13]. Thus, the association between PTSD diagnosis in the EHR and subsequent care utilization and symptom outcomes is unclear in the majority of these studies. In the current study, we hypothesized that PTSD would be underreported in the EHRs of ADMSM with self-reported PTSD, and that participants with (EHR-Pos) and without (EHR-Neg) an EHR-PTSD diagnosis would differ on measures of 12-month healthcare utilization, other recorded mental health diagnoses, and longitudinal PTSD symptom trajectories. Findings should provide insight into whether the omission of a PTSD diagnosis in the EHR is associated with treatment utilization and longitudinal symptom outcomes.

## 2. Materials and methods

### 2.1. Participants and procedures

Study data came from a two-parallel arm randomized trial that evaluated the effectiveness of a centralized collaborative care model compared to the existing collaborative care model for U.S. Military Service members screening positive for probable PTSD or depression through primary care. The original study was approved by institutional research review boards at Walter Reed National Military Medical Center (primary), six participating Army installations, RTI International, RAND Corporation, University of Washington, Boston VA, and the Human Research Protection Office, US Army Medical Research and Materiel Command. Informed consent was obtained from all participants. Full details on the design and outcomes of the randomized trial are presented in Engel et al. [12].

Participants comprised patients across 18 primary care Army clinics who were eligible for the existing collaborative care management approach based on a probable diagnosis of PTSD or depression. As part of the standard of care in the military, all patients are required to have an annual primary care appointment and receive a standardized brief-PTSD screen (PC-PTSD) [14]. Patients who screen positive on this measure are then administered a longer PTSD self-report assessment (PTSD Checklist-Civilian Version (PCL-C) [15]. If the patient screens positive for PTSD based on the PCL, then the primary care provider will conduct further assessment of the patient and refer them to the collaborative care intervention if indicated. Patients who screened positive for PTSD and who expressed interest in participating in this study were referred to a research coordinator for additional screening and eligibility assessment. Study eligibility included being on active duty, having computer-based access to the internet, and meeting *Diagnostic and Statistical Manual of Mental Disorders* [16] criteria for PTSD using the PCL-C [15]. Eligible ADMSM were enrolled between February of 2012 and August of 2013 and randomly assigned to one of two collaborative primary care models that integrated mental health management into primary care [12,17]. The intervention under study also included centrally-assisted stepped collaborative telecare management. Participants with active alcohol dependence, active suicidal ideation, or a suicide attempt in the prior month were excluded. The 666 participants enrolled in the original study were randomly assigned to one of the two models of collaborative primary care and completed research assessments at baseline and at 3-, 6-, and 12-month follow-up using a web-

based research reporting system. Screening tests were self-administered and results were anonymous in that they were solely used for research and were not included in participants' medical records.

The current study included the data from 470 participants in the larger study who met DSM criteria for PTSD and who also had a score of  $\geq 50$  on the PCL-C. Previous research has shown that inclusion of the additional  $\geq 50$  score criterion nearly halves prevalence estimates of PTSD based on DSM alone [18,19], providing a conservative definition of self-report PTSD.

### 2.2. Measures

All measures were collected using an independent, web-based research reporting system. These symptom results were not available to any of the participants' usual healthcare providers. Items assessed at baseline included demographics, combat exposure, and somatic symptoms. We administered the PCL-C to assess PTSD for study inclusion. The PCL is a 17-item self-report questionnaire with strong psychometric properties [15,20,21] and is commonly used in PTSD research, including military studies [22,23]. It has strong correspondence with the Structured Clinical Interview for DSM (SCID) [15] and the Clinician Administered PTSD Scale [24,25]. In the current study, we based a designation of self-reported PTSD on DSM PTSD criteria of endorsement of "moderate" or greater severity on one re-experiencing symptom, three avoidance symptoms, and two hyperarousal symptoms [15], and the additional criterion of a 50-point cutoff. A PCL score can be obtained by summing item scores, with a possible range of 17 to 85. A score of 50 or greater is a good predictor of PTSD diagnosis obtained from the SCID in combat veterans [15], and screening results most closely match the true prevalence in soldiers returning from combat [25,26]. Several studies have used the combined DSM-IV-TR and 50 cutoff criteria [9,18,27,28].

We measured combat exposure with the Combat Exposure Scale, a 17-item scale adapted for the Department of Defense Survey of Health Related Behaviors [29,30]. Scores were categorized into low or moderate combat exposure groups using cutoff scores presented by Bray et al. [30]. We measured somatic symptoms using the PHQ-15, which is composed of 15 items from the Patient Health Questionnaire (PHQ) [31]. Individual symptom scores ranged from 0 ("not bothered at all") to 2 ("bothered a lot"), for a possible severity score ranging from 0 to 30.

The Posttraumatic Diagnostic Scale (PDS) was our primary outcome measure of PTSD symptom severity at baseline and 3-, 6-, and 12-month follow-up. The PDS is a self-report questionnaire that measures severity of 17 PTSD symptoms associated with a specific traumatic experience and has a possible score range of 0 to 51 [32–34]. The PDS has strong psychometric properties, including high test-retest reliability and diagnostic agreement with the SCID [33].

We obtained inpatient and outpatient healthcare utilization records from the Military Health System Data Repository for each subject beginning three months before study baseline and continuing for the duration of the 12-month study. Accessed records included all individual-level healthcare encounters and pharmacy information.

The primary grouping variable in the current study was defined by whether or not participants had a criterion diagnosis of PTSD (ICD-9-CM code 309.81) [35] in the EHR (group EHR-Pos or EHR-Neg) at baseline. We defined a criterion diagnosis of PTSD in the EHR as follows: during three months preceding and/or following baseline testing, a PTSD diagnosis recorded in the EHR in any diagnostic position during one encounter with a mental health provider, one encounter with a primary care provider working within a military facility, or two encounters with any other provider. Participants not meeting these criteria were not considered to have an EHR-PTSD criterion diagnosis (group EHR-Neg). Our criteria for an EHR-PTSD diagnosis are similar to those used for research [13], but less conservative than those used for surveillance purposes within the DoD [36] in that we required one,

**Table 1**  
Subject characteristics and baseline screening values.

	EHR-Neg	EHR-Pos	Total	Pearson $\chi^2$
	n = 327 (% = 70)	n = 143 (% = 30)	N = 470 (% = 100)	
	n (%)	n (%)	n (%)	
Collaborative care model: Stepped care	154 (47)	77 (54)	231 (49)	1.81
Gender: Male	259 (79)	124 (87)	383 (82)	3.72*
Age (yrs): $\leq 35$	230 (70)	93 (65)	323 (69)	1.30
Race/ethnicity: Caucasian	144 (44)	73 (51)	217 (46)	1.97
Marital Status: Married	192 (59)	103 (72)	295 (63)	7.55**
Rank:				17.44***
Junior enlisted	172 (53)	46 (32)	218 (47)	
Non-commissioned officer and above	152 (47)	97 (68)	249 (39)	
Combat exposure:				42.02***
Low	158 (49)	24 (17)	182 (39)	
Moderate	168 (52)	119 (83)	287 (61)	
	mean $\pm$ SD	mean $\pm$ SD	mean $\pm$ SD	t
PTSD severity (PCL-C) <sup>a</sup>	61.68 $\pm$ 7.87	64.92 $\pm$ 8.47	62.67 $\pm$ 8.18	t (468) = 4.01***
Somatic symptom severity (PHQ-15) <sup>b</sup>	14.34 $\pm$ 4.57	14.74 $\pm$ 5.01	14.46 $\pm$ 4.70	t (466) = 0.834

\* p = .054.

\*\* p < .01.

\*\*\* p < .001.

<sup>a</sup> PCL-C has a possible range of 17 to 85.

<sup>b</sup> PHQ-15 has a possible range of 0 to 30.

rather than two, primary care encounters within military facilities based on the integrated care system in military facilities in which primary care providers are trained in PTSD diagnosis and care [11]. This approach should maximize the likelihood of accurately detecting PTSD in the EHR.

To determine utilization patterns across the 12 months of study, we categorized healthcare encounters as either mental or physical depending on the diagnoses recorded in the EHR in diagnostic positions 1 through 3. If an encounter had a mental health diagnosis (ICD-9-CM category 290–319) [35] alone or listed first, it was counted as a mental healthcare encounter. The same rule was used for physical healthcare encounters. The number and percent of patients who filled antidepressant prescriptions during the 12 month study were calculated separately for antidepressants recommended for treatment of PTSD and other antidepressants. Those recommended for PTSD included sertraline (Zoloft), paroxetine (Paxil), fluoxetine (Prozac), and venlafaxine (Effexor) [37]. We identified the most common mental health diagnoses across the 12 months of study and preceding 3 months, with the proviso that an individual could be counted only once in any diagnostic category, although they could be included in multiple categories.

### 2.3. Statistical analyses

A log binomial regression model was used to investigate the association of explanatory variables with the probability of having an EHR-PTSD criterion diagnosis at baseline (EHR-Pos). The log binomial regression model derived the risk ratio of a covariate, which we considered to be a more appropriate summary measure to display the covariate's effect than the odds ratio derived from the logistic regression model. Explanatory variables included PCL score, gender, race, collaborative care model, somatic score, military rank, and combat exposure. Selection of explanatory variables was primarily theory-based; previous studies have found that PTSD diagnosis was associated with combat/trauma history, military rank, somatic symptoms, PTSD symptom severity, gender, and race [1,3,5,7,38]. We included collaborative care model to confirm that it was not predicting EHR diagnosis. We applied the SAS PROC GENMOD procedure to compute the regression coefficients of the explanatory variables and the corresponding risk ratios with 95% confidence intervals [39]. Participant characteristics, alternate diagnoses, and whether or not participants

had filled a prescription were analyzed using Pearson's chi-square. Healthcare utilization was analyzed using negative binomial regression.

We next analyzed the association of EHR-PTSD status (EHR-Pos, EHR-Neg) with the longitudinal trajectory across the four time points of PTSD symptoms (as measured by the PDS). As the outcome variable was continuous, we applied a linear mixed model to address intra-individual correlation and to adjust for case and item missing data [40,41]. We then used a restricted maximum likelihood (REML) estimator to find unbiased parameter estimates. We treated time as a continuous variable, with specification of the individual-specific random effects on the intercept and on the slope of the number of months elapsed since the start of the study. We found the quadratic polynomial time function, describing a nonlinear longitudinal process, to best fit the longitudinal trajectory of PDS scores given the results of the likelihood ratio test. As the specification of a single time variable was associated with a linear longitudinal process, a time  $\times$  time variable was created to capture nonlinearity of the time function. If the regression coefficient of the time  $\times$  time factor was statistically significant, we would have good reason to conclude that the longitudinal trajectories of the PTSD score were not linear. Given the specification of two components for the time factor, we substantially reduced numeric instability and multicollinearity by rescaling the time variable to center it at month six [41]. We created an interaction term between the EHR variable and time to capture changes over time in the effect of EHR discordance. Somatic scores, combat exposure, military rank, and collaborative care model were used as control variables to adjust for potential confounding effects, with their values all fixed at baseline. We employed the SAS 9.4 PROC MIXED procedure to compute both the fixed and the random effects for the linear mixed model [41–43].

### 3. Results

Over two-thirds (70%; n = 327) of participants who met baseline criteria for self-reported PTSD did not have an EHR-PTSD criterion diagnosis (group EHR-Neg). Basic demographics, combat exposure levels, and mean baseline scores on PTSD and somatic symptom measures are shown in Table 1. Greater PTSD symptom severity at baseline and increased level of combat exposure were significant predictors of having an EHR-PTSD criterion diagnosis (see Table 2).

With the proviso that an individual could be counted only once in

**Table 2**  
Probability of being in group EHR-Pos, given baseline characteristics.

Variables	Regression coefficient	Standard error	Wald $\chi^2$ <sup>a</sup>	p	Risk ratio	95% CI
Intercept	-4.0145	0.5575	51.85	< 0.001		
Male (reference: female)	-0.0104	0.2065	0.00	0.96	0.99	0.66–1.48
Caucasian (reference: other)	0.1762	0.1335	1.74	0.19	1.19	0.92–1.55
Collaborative Care Model (reference: usual care)	0.0462	0.1323	0.12	0.73	1.05	0.81–1.36
Combat Exposure (reference: low)	0.9546	0.2220	18.48	< 0.001	2.60	1.68–4.01
Military Rank (reference: Junior enlisted)	0.2768	0.1537	3.24	0.07	1.32	0.98–1.78
PTSD Severity (PCL-C)	0.0300	0.0083	13.17	< 0.001	1.03	1.01–1.05
Somatic Symptom Severity (PHQ-15)	-0.0036	0.0145	0.06	0.81	0.99	0.97–1.03

<sup>a</sup> df = 1.

any diagnostic category but could be included in multiple categories, we found that participants in group EHR-Neg were most frequently diagnosed with adjustment disorders (73%), followed by depressive (49%), anxiety (43%), and substance-related (35%) disorders. Those in group EHR-Pos were significantly more likely than those in group EHR-Neg to be diagnosed with depression (68% vs 49%.  $\chi^2(1, 470) = 14.8, p < .001$ ) or anxiety (62% vs 43%.  $\chi^2(1, 470) = 14.6, p < .001$ ). Participants in group EHR-Neg were significantly more likely than those in group EHR-Pos to be diagnosed with adjustment disorders (73% vs 60%.  $\chi^2(1, 470) = 7.0, p < .01$ ).

Table 2 displays the regression coefficients, the standard errors, the p-values, and the risk ratios of the predictors on the probability of being in group EHR-Pos. The regression coefficient of PTSD severity (PCL-C) was 0.0300, statistically significant ( $p < .001$ ), with a risk ratio of 1.03 (95% CI: 1.01–1.05). As PCL-C was a continuous variable, reporting the risk ratio with a one-unit increase in PTSD severity did not adequately display the impact of the effect. Instead, we computed the risk ratio for a 10-point change in PTSD severity that results in  $e^{0.030 \times 10} = 1.350$ , suggesting a 1.35 times increase in the individual probability of being in group EHR-Pos, other things being equal.

During the study, all but one subject had at least one healthcare encounter recorded in the EHR. In the EHR-Neg group, 86% had at least one mental healthcare encounter and almost all (98%) had a physical healthcare encounter recorded. On average, EHR-Pos participants had twice as many mental health encounters as did EHR-Neg participants (median/IQR: EHR-Pos = 16/30; EHR-Neg = 7/18; RR = 2.16 (95% CI 1.77, 2.65), and more physical health encounters (median/IQR: EHR-Pos = 23/32 vs EHR-Neg = 17/26; RR = 1.34 (95% CI 1.10, 1.64). EHR-Pos participants were more likely than EHR-Neg participants to fill a prescription for a PTSD-recommended antidepressant (65% vs 49%.  $\chi^2(1, 470) = 10.0, p < .005$ ) or another antidepressant (71% vs 54%.  $\chi^2(1, 470) = 11.8; p < .005$ ).

Table 3 shows the results of the linear mixed model. There are two components of effects reported in the table, the fixed and the random effects. Statistically, fixed effects refer to the effect component that are constant across individuals while random effects are specified to reflect individual differences in the effect. In the present study, we specified the random effects for the intercept, for the effect of time, and for the covariance between the intercept and time. That is, the intercept and the effect of time were assumed to vary over individuals. As shown in Table 3, all these random effects were statistically significant, thereby reflecting the importance of considering such an effect component when analyzing the longitudinal data. For the fixed effects, all regression coefficients except collaborative care model and military rank were statistically significant given  $\alpha = 0.05$ . The statistical test on the overall effects of covariates, results not being presented, showed significant main fixed effects for time ( $F(1, 1242) = 59.87, p < .001$ ) and EHR group ( $F(1, 458) = 29.49, p < .001$ ) and significant interactions between time and EHR group ( $F(1, 1242) = 7.07, p < .01$ ) and time by time ( $F(1, 1242) = 48.09, p < .001$ ), controlling for somatic scores, combat exposure, military rank, and collaborative care model. These results suggested that EHR-Neg participants generally

**Table 3**  
Fixed and random effects for the linear mixed model predicting longitudinal trajectories of PTSD.

Variables	Regression coefficient	Standard error	t or Z	p Value
Fixed effects				
Intercept	17.57	1.25	14.05	< 0.001
Time	-0.5568	0.06	-9.22	< 0.005
Time × time	0.0655	0.01	6.93	< 0.001
Somatic symptoms (PHQ-15)	0.4996	0.07	7.21	< 0.001
Combat exposure	2.5295	0.74	3.41	< 0.001
Collaborative care model	0.2472	0.65	0.38	0.70
Military rank	-1.2792	0.70	-1.82	0.07
EHR-Pos	4.8725	0.90	5.43	< 0.001
Time × EHR	0.2847	0.11	2.66	< 0.01
Random effects				
Intercept	61.04	4.93	12.38	< 0.001
Slope of time	0.55	0.08	7.16	< 0.001
Covariance of intercept and time	4.55	0.50	9.12	< 0.001
Model $\chi^2$		641.37		
Effective sample size		464		

started with lower PTSD severity scores and experienced significantly greater decreases in PTSD symptom severity over time, other variables being equal (see Fig. 1). Both groups had final mean PDS severity scores above 21, the lower cutoff for the range of PDS scores categorized as moderate to severe [44,45].

#### 4. Discussion

This study evaluated the discrepancy between self-reported PTSD and EHR-recorded PTSD diagnosis, and it is one of the first studies to then examine the association between receiving an EHR diagnosis and longitudinal symptom outcomes. Such a comparison allows insight into the symptom outcomes of undiagnosed patients with PTSD symptoms. We found a large discrepancy between PTSD report types, with less than one-third of ADSM with self-reported PTSD having a PTSD diagnosis reported in the EHR. Participants with an EHR-PTSD diagnosis reported more severe PTSD symptoms and greater combat exposure and had more comorbid diagnoses than did participants who did not receive the PTSD diagnosis. A previous study in veterans also found that those with more severe symptom presentations were more likely to receive a PTSD diagnosis [3]. Patients without an EHR-diagnosis received fewer healthcare encounters and medications relative to those receiving an EHR diagnosis. Despite the lack of an official PTSD diagnosis and less treatment utilization, patients without a PTSD encounter code demonstrated superior PTSD symptom trajectories over 12 months as compared to those receiving the PTSD diagnosis. These findings suggest that patients with self-reported PTSD who receive an EHR diagnosis likely represent more severe and potentially complex cases of PTSD which may demonstrate poorer symptom recovery.

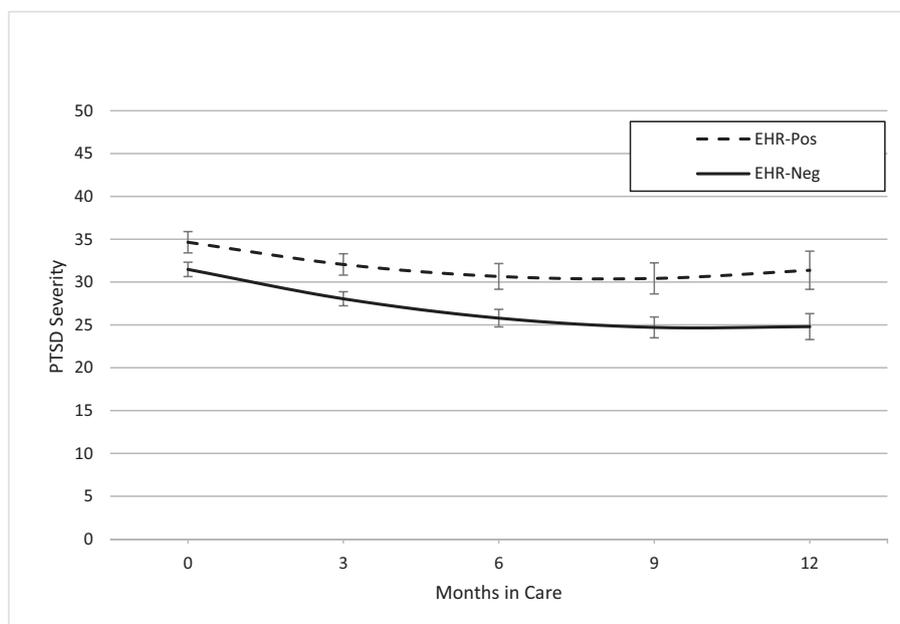


Fig. 1. Longitudinal trajectories of PTSD symptom severity based on EHR diagnosis group.

Our findings of a discrepancy between self-reported PTSD and an EHR-PTSD diagnosis are consistent with other studies [3–8]. One explanation for the discrepancy may relate to anonymity, which can have considerable impact on PTSD reporting [10]. In our study, participants knew that screening results were for research purposes only and were not included in their medical records. It may be that, while participants were willing to endorse symptoms on an unofficial self-report, those with less severe or functionally disabling symptoms may be less willing to communicate these symptoms to their presenting provider when a diagnosis could impact their military career. Relatedly, providers may be reluctant to enter a PTSD diagnosis in the EHR due to concerns about stigma. Wilk et al. [8] found that clinicians did not record a PTSD diagnosis for 41% of AD/SM whom they determined to have PTSD, most commonly entering an adjustment disorder diagnosis instead. Alternatively, in our study, providers may have determined that these less symptomatic patients did not actually meet criteria for PTSD but, rather, for an adjustment disorder, as this was the most common diagnosis among this cohort.

Our findings have implications for other healthcare research that uses gross benchmarks to characterize the treatment that patients with self-reported PTSD are—or are not—receiving. For instance, if we had not longitudinally analyzed healthcare utilization and symptom trajectories of patients without an EHR diagnosis, we might have assumed that those patients did not receive adequate care. However, upon further investigation, patients without an EHR-PTSD diagnosis did engage in care, and they demonstrated superior outcomes relative to patients who received a PTSD diagnosis and engaged in higher frequency mental health encounters. Our results elaborate on the nuances and challenges in the interpretation of large-scale data using traditional benchmarks to measure adequate care.

Primary care has been identified as an important setting for identifying and managing PTSD [2]. Our findings indicate that, among patients presenting to primary care, those with more severe, persistent PTSD symptoms may be more likely to receive a documented PTSD diagnosis. The majority of those with clinically significant but less severe PTSD may receive an alternate EHR mental health diagnosis and typically engage in some mental health treatment, including pharmacotherapy, while demonstrating modest improvement. Because their symptoms are captured early, in primary care, this may provide an ideal opportunity to provide or refer for appropriate and comprehensive

mental healthcare.

Our study has limitations which should be noted. Patients receiving the PTSD diagnosis engaged in greater healthcare utilization which may have provided increased opportunities to be diagnosed with PTSD [5]. However, all participants were recruited following a primary care visit in which they were flagged as possibly having PTSD. Also, subjects were divided into one of two collaborative primary care models. However, any effects of collaborative care model were not significant in any of our analyses. Additionally, data on the use of antidepressants were acquired from administrative databases, so we do not know if patients actually took the medications. Because participants were AD/SM seeking primary care, our results may not generalize to other populations. Finally, based on exclusion criteria, these results may not generalize to participants with alcohol dependence or acute suicidal ideation.

## 5. Conclusions

Analysis of EHR data provide an opportunity to reveal enterprise-level health patterns that may inform health system practices and policy. Previous studies from active duty military (8), veteran [3], and civilian [6] populations indicate that the EHR may not fully capture PTSD diagnoses. While we found that the EHR identified only 30% of AD/SM with probable PTSD at baseline, those identified appear to represent a population of primary care patients with more severe and complex symptoms, greater healthcare usage, and worse symptom outcomes over a 12 month period. Our findings suggest that more severe cases of PTSD are more likely to be captured in the EHR, while patients with less severe PTSD symptoms, who typically receive an adjustment disorder diagnosis, may still be accessing and benefitting from care.

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## Disclosures

Conflicts of interest: none.

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