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Discrepancy in diagnosis and treatment of post-traumatic stress disorder (PTSD): Treatment for the wrong reason

Ellen C. Meltzer, MD MSc¹, Tali Averbuch, MPP¹, Jeffrey H. Samet, MD MA MPH^{1,5}, Richard Saitz, MD MPH^{1,3,4}, Khelda Jabbar, MD⁶, Christine Lloyd-Travaglini, MPH⁷, and Jane M. Liebschutz, MD MPH^{1,5}

¹Clinical Addiction Research and Education (CARE) Unit, Section of General Internal Medicine, Department of Medicine, Boston Medical Center and Boston University School of Medicine, Boston, MA

²Weill Cornell Medical College, Division of Medical Ethics, Boston University School of Public Health

³Department of Epidemiology, Boston University School of Public Health

⁴Youth Alcohol Prevention Center, Boston University School of Public Health

⁵Department of Community Health Sciences, Boston University School of Public Health

⁶Department of Family Medicine, Boston University

⁷Data Coordinating Center, Boston University School of Public Health

Abstract

In primary care (PC), patients with post-traumatic stress disorder (PTSD) are often undiagnosed. To determine variables associated with treatment, this cross-sectional study assessed 592 adult patients for PTSD. Electronic medical record (EMR) review of the prior 12 months assessed mental health (MH) diagnoses and MH treatments (selective serotonin reuptake inhibitor (SSRI) and/or 1 visit with a MH professional). Of 133 adults with PTSD, half (49%; 66/133) received an SSRI (18%), a visit with a MH professional (14%), or both (17%). Of those treated, 88% (58/66) had an EMR MH diagnosis, the majority (71%; 47/66) depression and (18%; 12/66) PTSD. The odds of receiving MH treatment were increased 8.2 times (95% CI 3.1 – 21.5) for patients with an

Corresponding Author: Jane M. Liebschutz, MD MPH, Associate Professor, Section of General Internal Medicine, Boston Medical Center, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118, Phone: (617) 414-7399, Fax: (617) 414-4676, Jane.Liebschutz@bmc.org.

Ellen C. Meltzer, MD, MSc, Assistant Professor of Public Health & Medicine, Division of Medical Ethics, 435 East 70th Street; Suite 4J, New York, NY 10021, Phone: (212) 746-5377, Fax: (212) 746-8738, ellencmeltzer@gmail.com

Tali Averbuch, MPP, Research Assistant, Section of General Internal Medicine, Boston Medical Center, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118, Phone: (617) 414-7399, Fax: (617) 414-4676, tali.averbuch@gmail.com

Jeffrey H. Samet, MD MA MPH, Chief, Section of General Internal Medicine, Boston Medical Center, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118, Phone: (617) 414-7399, Fax: (617) 414-4676, jsamet@bu.edu

Richard Saitz, MD MPH, Director, Clinical Addiction Research and Education Unit, Section of General Internal Medicine, Boston Medical Center, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118, Phone: (617) 414-7399, Fax: (617) 414-4676, richard.saitz@bmc.org

Khelda Jabbar, MD, Attending Physician, Department of Family Medicine, Boston Medical Center, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118, Phone: (617) 414-7399, Fax: (617) 414-4676, Khelda.jabbar@bmc.org

Christine Lloyd-Travaglini, MPH, Data Coordinating Center, Boston University School of Public Health, 801 Massachusetts Avenue, 3rd Floor, Boston, MA 02118, Phone: (617) 414-7399, Fax: (617) 414-4676, clloyd@bu.edu

Jane M. Liebschutz, MD MPH, Associate Professor, Section of General Internal Medicine, Boston Medical Center, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118, Phone: (617) 414-7399, Fax: (617) 414-4676, jliebs@bu.edu

All Work Completed At: Clinical Addiction Research and Education (CARE) Unit, Section of General Internal Medicine, Boston Medical Center, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118

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EMR MH diagnosis. Nearly 50% of patients with PTSD received MH treatment, yet few had this diagnosis documented. Treatment was likely due to overlap in the management of PTSD and other mental illnesses.

Keywords

Post-traumatic Stress Disorder; Primary Care; Mental Health Diagnosis; Mental Health Treatment

Introduction

In primary care (PC) settings, patients with post-traumatic stress disorder (PTSD), are often not diagnosed; 2% to 11% with PTSD actually have the diagnosis noted in the medical record.^{1, 2} In addition, less than half of these patients with PTSD, or even fewer, actually receive treatment for PTSD.^{3, 4} To better address this condition in practice, more attention will likely need to be focused both on the recognition of PTSD, and the treatment of PTSD when it is recognized.

Mental health (MH) treatment for PTSD includes pharmacotherapy and/ or specialized MH counseling with structured cognitive behavioral therapy or psychotherapy.⁵⁻⁹ Recent practice guidelines from the American Psychiatric Association recommend selective serotonin reuptake inhibitors (SSRIs) as first-line pharmacotherapy for patients with PTSD, given that they alleviate symptoms of PTSD, have few side effects, and also treat the comorbid depression, anxiety and panic disorder that frequently co-occur with PTSD.^{5, 10} Few randomized trials have been completed to evaluate the efficacy of one type of treatment (i.e. pharmacotherapy vs. psychotherapy) over another; however current guidelines state that, since pharmacotherapy has lower effectiveness for PTSD than MH counseling, it is prudent for prescribing clinicians to also refer patients for appropriate counseling.^{6, 7, 10, 11}

A literature review helped to identify some factors that are associated with recognition of mental illness and therefore with receipt of treatment for mental illness. First, more severe psychological distress increases the odds that a patient will be diagnosed with a mental health disorder.^{1, 4, 12} But little is known about whether this principle applies to PTSD in PC practice. It seems reasonable, however, to suspect that patients with more severe PTSD symptoms would be more likely to receive MH treatment.^{1, 4, 11, 12} Secondly, PC physicians are more likely to recognize depressive symptoms (and are more likely to mislabel patients with lone PTSD as having depression).¹³ Thus, it seems also likely that comorbid depression (with PTSD) might increase the likelihood of receiving MH treatment.¹³ Finally, patient disclosure of trauma-associated symptoms to a medical professional seemed to also increase the likelihood of receiving MH treatment.^{1, 6, 7, 12-14}

To better understand factors associated with receipt of PTSD treatment by PC patients, a cross sectional study of patients in PC was conducted assessing PTSD diagnosis and reviewing patients' medical records for MH diagnoses and PTSD treatments. Given the therapeutic overlap (i.e. SSRI pharmacotherapy) in the management of PTSD and depression, it was hypothesized that some patients with PTSD might receive MH treatment despite the fact that they are not recognized as having PTSD. In fact, it was thought that these patients might be mislabeled in the medical record as having other MH diagnoses (especially depression) and thus receive PTSD treatment fortuitously due to this phenomenon of therapeutic overlap. It was also hypothesized that PTSD symptom severity and trauma-associated symptom disclosure would be associated with receipt of treatment for PTSD.

Methods

Study Design

This secondary data analysis examines participants who met diagnostic criteria for current PTSD during a cross-sectional study completed at the primary care clinics of an urban, safety-net, academic medical center.² This analysis had three key components. First, validated measures established the overall prevalence of interview-diagnosed PTSD, PTSD symptom severity and depressive symptoms.¹⁵ Second, participants' electronic medical records (EMRs) were reviewed for the presence of four mental health diagnoses, SSRI prescriptions and documentation of visits with a MH professional in the prior year. Finally, logistic regression tested the associations between receipt of MH treatment and the hypothesized independent variables. A detailed description of study methods for recruitment and assessment can be found elsewhere; relevant methods are summarized below.² Boston University Medical Center's Institutional Review and HIPAA Privacy Review Boards approved the study. A Certificate of Confidentiality was obtained from the National Institutes of Health.

Recruitment and Enrollment

From February 2003 to September 2004, adult patients awaiting primary care appointments were approached and screened for eligibility by trained research assistants. Patients were eligible if they spoke English, were 18-65 years old, and had a scheduled appointment with a primary care clinician. Of the 753 eligible patients, 607 (81%) enrolled in the study.² This analysis is limited to the 133 patients with a current (past 12-month) diagnosis of PTSD made using the Composite International Diagnostic Interview (CIDI) Version 2.1 PTSD Module.^{16, 17} Patients who participated in the study provided written informed consent, were compensated \$10, and received safety referrals at the end of the interview.

Assessments and Data

Interview assessments—Research assistants collected demographic data and administered a series of validated interview questionnaires. They administered the Composite International Diagnostic Interview to assess for current PTSD and the Patient Health Questionnaire-9 (PHQ-9) to measure depressive symptoms.¹⁵⁻¹⁷ PTSD symptom severity was ascertained via the Posttraumatic Stress Disorder Checklist (PCL-C).^{18, 19} Participants were asked specifically whether they had ever disclosed that they suffered from trauma-associated symptoms to a medical professional, defined as a primary care physician, mental health professional/therapist, other physician, nurse, or social worker.

Electronic Medical Record (EMR) Data—All study subjects were patients at an academic medical center which maintains a comprehensive EMR. All outpatient encounters (primary care clinical encounters and emergency department visits), inpatient discharge summaries, diagnoses, and prescriptions are documented in the EMR and available for review. MH services are available at the same academic medical center and visits with a MH professional are also documented in the EMR, however restrictions do not allow for the specific contents of these visits (i.e. type of therapy performed) to be viewed. Using standardized data-collection forms medical students and residents trained in chart abstraction, and supervised by an academic internist, reviewed each participant's EMR, starting from 12 months prior to the date of entry into the study. The EMR was reviewed for MH diagnoses and prior year MH treatments (prescription of an SSRI and/or 1 visit with a MH professional).^{20, 21} Mental health diagnoses included ICD-9 coded PTSD, depression, anxiety, and panic disorder in a patient's problem list and/ or in a clinician's typed assessment from any given visit (excluding MH visits). With respect to visits with a MH professional, the type of MH professional seen and the type of behavioral therapy received

was not available for review. However, a MH professional could enter a mental health diagnosis into a patient's problem list and/ or prescribe an SSRI, both of which would appear in the EMR and be available for review for this study.

Main Variables

The primary dependent variable was receipt of mental health treatment in the prior 12 months. MH treatment was defined as receipt of either an SSRI prescription and/or 1 visit with a MH professional, as these are treatments that could be effective for PTSD. There were four main independent variables of interest. *Mental health diagnoses in the EMR* included PTSD, depression, anxiety and/or panic disorder. *More severe PTSD symptoms* was a categorical variable indicating the highest quartile of the distribution of all participants' PCL-C scores.¹⁹ *Comorbid depression* was defined as a PHQ-9 score of 9 or greater, based on published scoring cut-offs from the PHQ-9 derived from studies correlating past 2-week depressive symptoms with a diagnosis of major or other depression.¹⁵ Disclosure of suffering from trauma-associated symptoms to a medical professional was a dichotomous variable.^{15, 18, 19} Covariates of interest included the socio-demographic factors age, sex, race (black vs. other), marital status, education level, employment status, and annual income. Insurance status was not included in the model as >99% of participants had coverage for the types of utilization studied via federal, state or private insurance or through an uncompensated care pool ("free care").

Statistical Analysis

Descriptive and bivariate analyses were conducted using t-tests for continuous data and the chi-square test for categorical data. To determine factors associated with patients receiving MH treatment, logistic regression tested for associations between the dependent variable, the main independent variables of interest, and potential confounding factors. The latter were selected if they had statistically significant associations with the outcome in bivariate analyses ($p < 0.05$) or, in the cases of more severe PTSD symptoms and comorbid depression, due to prespecified hypotheses.

Results

Characteristics of Patients with PTSD

Of the 133 participants (all with current PTSD by diagnostic interview), the mean age was 41 years ($SD=11$) (Table 1). Eighty-two (62%) were female and 75 (56%) were black. Almost half had never been married, 40 (30%) had less than 12 years of education, and 83 (62%) were unemployed or on disability. Eighty-five (67%) participants earned less than \$20,000 annually. The majority (71%) also had comorbid depression by diagnostic interview.

Electronic Medical Record (EMR) Documentation of Mental Illness

Table 1 describes the mental health diagnoses in subjects' electronic medical records. The majority (88%) of participants who received MH treatment had at least one mental illness diagnosis documented in the EMR, most commonly depression (71%). For participants with research interview-diagnosed PTSD alone ($N=39$) and participants with research interview-diagnosed PTSD and comorbid depression ($N=94$), frequencies of EMR documentation of PTSD (10% vs. 11%, $p=0.9$) and depression (44% vs. 52%, $p=0.4$) were similar.

Receipt of MH Treatment

Nearly half of the participants received MH treatment in the prior year: 23 (17%) had both an SSRI prescription *and* at least one visit with a MH professional; 24 (18%) received only

an SSRI prescription; and 19 (14%) had no SSRI medication but at least one visit with a MH professional (mean number of visits was 4.5 with a range of 1-50) (Figure 1).

Predictors of Receipt of MH Treatment

In bivariate analyses, age and sex were not significantly different between those who received MH treatment compared to those who did not. Fewer blacks received MH treatment compared to all other racial groups combined, while more whites and Hispanics did receive treatment. A significantly higher proportion of treated patients were unemployed or on disability. Among participants with more severe PTSD symptoms and those with comorbid depression as determined from the research interview, there was no statistically significant difference in the proportion that received MH treatment. Compared to untreated subjects, a higher proportion of treated ones reported that at some point they had disclosed suffering from trauma-associated symptoms to a medical professional. In addition, a significantly higher proportion of treated participants had a diagnosis of PTSD, depression, anxiety, and/or panic disorder in their EMR (Table 1).

In adjusted analyses, the odds of receiving MH treatment were increased 8.2 times (95% CI 3.1 – 21.5) for participants with an EMR mental health diagnosis; even if the patient did not specifically have PTSD documented in the EMR. Disclosure of trauma-associated symptoms to a medical professional increased the adjusted odds of receiving MH treatment by 2.6 (95% CI 1.1 – 6.4). Being unemployed or on disability was also statistically significant (OR 2.7, 95% CI 1.1-6.7). Although attenuated in adjusted analyses, black patients were less likely to receive mental health treatment. Race, as well as other factors hypothesized to be clinically relevant (more severe PTSD symptoms and comorbid depression as determined by the research interview), were not statistically significant in this analysis (Table 2).

Discussion

Among a sample of urban PC patients with PTSD, few patients had this diagnosis listed in their medical record. However, despite not having documented PTSD diagnoses, nearly 50% received MH treatment: either an SSRI and/or a visit with a MH professional. In addition to a diagnosis of PTSD, any MH diagnosis (depression, anxiety, panic disorder) in the EMR, disclosure of trauma-associated symptoms to a medical professional, and being unemployed or on disability were all associated with receipt of MH treatment.

Initially factors that might be associated with receipt of mental health treatment were selected from the literature. The first two hypotheses were that having more severe PTSD symptoms and/or having comorbid depression (by research interview) would correlate positively with participants receiving MH treatment. These hypotheses were not supported in either bivariate or adjusted analyses. One potential explanation is that participants who received MH treatment may have improved as a result of the treatment, and thus had less severe symptoms at the time of assessment for this cross-sectional study. Another plausible reason for these findings is the cross-sectional design of this study that, by definition, did not allow for prospective observations of participants over time.¹⁴ Meredith et al. found that lack of time and patient financial burden were the strongest barriers to diagnosis and treatment of PTSD among primary care physicians, not doubt of the diagnosis.²² While prospectively Kessler et al. demonstrated that while some patients with depression and anxiety are not recognized as suffering from mental illness at an initial consultation, over time they are diagnosed and receive treatment.¹⁴

The next hypothesis tested was that some patients with PTSD receive MH treatment despite the fact that they are not actually diagnosed as having PTSD, likely due to recognition of a comorbid mental illness or mis-diagnosis of PTSD. In this sample, 29% of patients had lone

PTSD and 71% had comorbid PTSD and depression by research interview. Interestingly, EMR documentation of PTSD was low among all patients (1 in 10). However, 50% of the sample had depression documentation in the EMR. Patients with both PTSD and depression were more frequently diagnosed as suffering from depression. Patients with lone PTSD (i.e. no depression) were commonly diagnosed incorrectly as suffering from depression. These data are consistent with the findings of Samson et al., who demonstrate that among primary care patients with PTSD, it is the symptoms of depression or anxiety that are more likely to be recognized and treated.¹³ It may be concluded that, in spite of not being appropriately diagnosed with PTSD, many patients receive some MH treatment simply due to therapeutic overlap in the management of common mental illnesses.^{2, 3, 5, 7, 8} However, insufficiently treating patients with PTSD may result in partially treated PTSD and its associated comorbidities.²³⁻²⁵

While first line pharmacotherapy for PTSD, depression, and anxiety/panic disorder is a SSRI, consensus statements recommend that patients with PTSD also have specialized MH counseling, with structured cognitive behavioral therapy (CBT) or psychotherapy, as part of a comprehensive treatment plan.⁵⁻¹⁰ This contrasts to depression, for which monotherapy with antidepressants is recognized by current guidelines as an effective first-line treatment for patients with mild, moderate or even severe major depression.^{26, 27} In clinical trials of patients with PTSD, CBT is superior to SSRI treatment, with 50% of patients achieving remission with lone CBT versus 30% with lone SSRI treatment.¹¹ Thus consensus guidelines suggest that PC patients with PTSD ought to be referred for psychological treatment.^{8, 9} In this study, it is likely that most participants who received a visit with a MH professional did not receive CBT or other specific psychotherapy, as the mean number of visits (4.5) was fewer than the number of visits typically necessary for CBT in studies of PTSD (9 -12 sessions).²⁸

Ultimately, there is a significant benefit to focused PTSD treatment, as incomplete treatment leads to suboptimal outcomes. Patients with partially treated PTSD (termed Partial PTSD), although less symptomatic than those who meet criteria for full PTSD, still suffer from clinically meaningful symptoms and are at increased risk for suicide.^{3, 23-25, 29-33} In addition, patients with untreated anxiety disorders, including PTSD, more frequently utilize healthcare and generate substantial direct and indirect costs.³⁴ The United States Preventive Services Task Force currently does not offer any recommendations on screening for PTSD.³⁵ Until formal guidelines are available and more physicians are proficient in diagnosing PTSD, the findings of this study suggest that physicians consider inquiry about trauma-associated symptoms for those with anxiety or depressive symptoms, or those in high prevalence populations (e.g. returning military or past substance dependence) to facilitate identification of PTSD and thus, referral to appropriate treatment.³⁶ Prospective trials are needed to establish the evidence base for routine inquiry.

Another finding merits discussion. Being unemployed or on disability was also significantly associated with receipt of mental health treatment. Patients with PTSD (and anxiety disorders) as well as more significant impairment (i.e. are on disability) more frequently utilize healthcare.^{3, 4} Perhaps it is this increase in utilization which, as Kessler suggests, ultimately leads to the accurate diagnosis of PTSD.¹⁴ Once diagnosed, patients with PTSD who are unemployed or disabled, may also be more available to partake in treatment compared to their employed counterparts.¹⁴

Although the relationship was attenuated when adjusted for other factors, blacks were less likely to be diagnosed with PTSD and less likely to receive mental health treatment. Perhaps the fact that cultural differences exist in the experience of psychological trauma can partially explain this phenomenon.³⁷ Others studies show similar findings and posit that a patient's

race may actually affect a physician's awareness of mental illness.³⁸ Further investigation into this phenomenon is needed in order to develop interventions to reduce this disparity.

Perhaps physicians are hesitant to assign a diagnosis of PTSD for fear that the stigma of a mental health diagnosis may exacerbate the symptoms of mental illness or lead to discrimination.³⁹ However, studies have shown, and physicians should be counseled, that there is a therapeutic benefit for patients in the accurate recognition of mental illness.¹² Ormel et al. examined recognition of mental illness by general practitioners in the Netherlands. In addition to the fact that patients recognized as having mental illness were more likely to be treated, compared to those who were not recognized, recognition on its own had positive effects on patient psychopathology and social functioning.¹² Ormel suggests that the key elements present in the process of mental illness recognition, acknowledgement, re-interpretation, and social support, form the therapeutic basis for these positive results.¹²

This study has several limitations. The study was conducted at an urban, academic safety-net hospital, with the majority of participants unemployed, or on disability, and earning less than \$20,000 annually. This may seem to make the results less generalizable to other practice settings. However, there are numerous similar practice settings in US cities. Furthermore, historically studies examining patients with mental illness in other primary care settings similarly demonstrate that those with mental illness have higher rates of disability affecting both social and occupational functioning.^{40, 41} The cross-sectional study design does not allow for patients to be followed over time. This does limit the types of inferences one can make. For example, during the interview, patients were asked whether they have ever disclosed to a medical professional that they suffer from trauma-associated symptoms. For those patients who both answered affirmatively and also received MH treatment, one cannot assume this disclosure was made prior to receiving treatment. Although prior research shows that a known history of trauma is highly correlated with receipt of MH treatment, the temporal relationship in this study is not known and one cannot assume causality.⁷ Another aspect of the study design, the EMR review, provided some limitations. There was no data on the length or content of treatment that patients received, nor whether patients were adherent to their treatments. In addition, it is not known whether some patients received mental health treatment prior to the year before the study interview. Such information might have captured additional treatments for PTSD, however it is also not known whether patients had a diagnosis of PTSD more than a year prior to the study interview. Thus the added value of such information is unclear (this study examined utilization during the time period that coincides with the diagnostic information available). The EMR did not allow for the capture of information on patients who may have been offered, yet refused, MH treatment. In addition, it is not known if any participants sought MH treatment outside of the study facility. Given that a large percentage were unemployed or on disability and earned less than \$20,000 annually, it was speculated that they were less likely to utilize mental health services outside of the safety-net hospital. Finally, as there was no access to the content of visits with MH professionals, it was not possible to evaluate the type of therapy that may have been received. However, using validated measures to assess for PTSD at the time of entry into the study allowed for the study of patients with current mental illness and to evaluate the types of treatment they received while they had a documented diagnosis. Most importantly, these data provide new insight into factors that impact whether or not a PC patient with PTSD receives MH treatment, and demonstrate the need for further research examining both patient and physician related barriers to PTSD diagnosis and treatment.

Implications for Behavioral Health

Among urban, safety-net hospital primary care patients with current PTSD, half received some sort of MH treatment in the prior year, defined as a SSRI and/ or a visit with a MH professional. However, rather than a diagnosis of PTSD in their electronic medical records, many patients were identified as suffering from depression, anxiety, and/ or panic disorder. Thus, it appears as though treatment was often fortuitously received due to therapeutic overlap in the management of PTSD and other common mental illnesses (specifically depression). Encouraging primary care patients to disclose if they suffer from trauma-associated symptoms may improve PC identification and treatment of PTSD. Future research, focused on strategies to reduce patient and physician barriers to disclosing trauma and aimed at improving the diagnosis and treatment of PTSD in primary care, is essential to advancing the delivery of MH treatment to those suffering from this disabling condition.

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Figure 1.

Treatment Received by Patients with PTSD

*Mean number of visits with a mental health professional is 4.5; standard deviation 7.6.
Range 1-50

Table 1

Characteristics of Primary Care Patients with PTSD at an Urban Safety Net Hospital: Overall and Stratified by Receipt of PTSD Treatment

Variable	Total (N=133) N (%)	Any PTSD Treatment* (n=66) N (col %)	No PTSD Treatment (n=67) N (col %)	p-value
Age, Years, mean (SD)	41 (11)	42 (11)	39 (11)	0.2
Female Gender	82 (62%)	41 (62%)	41 (61%)	0.9
Race				
Black	75 (56%)	30 (45%)	45 (67%)	0.03 [†]
White	24 (18%)	17 (26%)	7 (11%)	
Hispanic	13 (10%)	9 (14%)	4 (6%)	
Other	21 (16%)	10 (15%)	11 (16%)	
Marital Status				
Married/live w/partner	24 (18%)	8 (12%)	16 (24%)	2.0
Separated/Divorced	38 (29%)	23 (35%)	15 (22%)	
Widowed	8 (6%)	4 (6%)	4 (6%)	
Never married	63 (47%)	31 (47%)	32 (48%)	
Education				
< 12 years	40 (30%)	18 (27%)	22 (33%)	0.8
12 years	45 (34%)	23 (35%)	22 (33%)	
> 12 years	48 (36%)	25 (38%)	23 (34%)	
Employment Status				
Full-time	21 (16%)	5 (8%)	16 (24%)	0.01
Part-time	22 (17%)	8 (12%)	14 (21%)	
Student	7 (5%)	3 (5%)	4 (6%)	
Unemployed	83 (62%)	50 (76%)	33 (49%)	
Income				
< \$20,000	85 (67%)	45 (71%)	40 (63%)	0.3
>= \$20,000	41 (33%)	18 (29%)	23 (37%)	
Comorbid Depression [‡]	94 (71%)	45 (68%)	49 (73%)	0.5
Disclosure of Trauma-Associated Symptoms	81 (61%)	52 (79%)	29 (44%)	<0.001
More Severe PTSD Symptoms	82 (62%)	44 (67%)	38 (57%)	0.2
EMR Documentation of Mental Illness				
Any Mental Illness [§]	83 (62%)	58 (88%)	25 (37%)	<0.001
PTSD	14 (11%)	12 (18%)	2 (3%)	0.004
Anxiety/Panic Attack	30 (23%)	22 (33%)	8 (12%)	0.003
Depression ^{//}	66 (50%)	47 (71%)	19 (28%)	<0.001

* Includes SSRI and/or visit with a mental health professional.

[†] P-value compares blacks vs. all other groups combined.

[‡]Depressive symptoms correlate with past 2 week major or other depression.

[§]Includes PTSD, anxiety, bipolar/manic disorder, panic disorder, major, and other, depression.

^{//}Major and other depression.

Table 2Factors associated with receiving PTSD treatment^{*}

Factor	Odds Ratio[†]	95 % CI
Electronic Medical Record Mental Health Diagnoses	8.21	3.14.-21.52
Disclosure of Trauma-Associated Symptoms	2.61	1.06-6.43
Unemployed/ On Disability vs. Employed/Student	2.68	1.08-6.65
Black Race vs. Others	0.42	0.18-1.02
Comorbid Depression	0.52	0.18-1.49
More Severe PTSD Symptoms	1.32	0.50-3.51

^{*} Adjusted Odds ratio via logistic regression modeling including factors statistically significant in bivariate analysis.

[†] As compared to patients who did not receive prior year PTSD treatment consisting of SSRI and/or visit with a mental health professional.