Psychiatry Research 243 (2016) 191–197

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Trauma history is associated with prior suicide attempt history in hospitalized patients with major depressive disorder

Lily A. Brown, Michael A. Armey, Corinne Sejourne, Ivan W. Miller, Lauren M. Weinstock *

Alpert Medical School of Brown University and Butler Hospital, Providence, RI 02906, USA

ARTICLE INFO

Article history:
Received 11 January 2016
Received in revised form
10 May 2016
Accepted 26 June 2016
Available online 27 June 2016

Keywords:
Posttraumatic stress disorder
Abuse history
Suicidal behavior
Psychiatric inpatients

ABSTRACT

Although the relationships between PTSD, abuse history, and suicidal behaviors are well-established in military and outpatient samples, little data is available on this relationship in inpatient samples. This study examines the relationships between these variables and related demographic and clinical correlates in a sample of psychiatric inpatients with a diagnosis of major depressive disorder using electronic medical record (EMR) data. Controlling for relevant demographic and clinical variables, PTSD diagnosis and history of abuse were both significantly associated with history of suicide attempt, but in a combined model, only history of abuse remained as a significant predictor. Whereas history of abuse was associated with a history multiple suicide attempts, PTSD diagnosis was not. Both insurance status and gender acted as significant moderators of the relationship between history of abuse and history of suicide attempt, with males and those with public/no insurance having greater associations with history of suicide attempts when an abuse history was present. These data indicate the importance of documentation of PTSD, abuse history, and history of suicide attempts. The results also suggest that in the presence of an abuse history or PTSD diagnosis, additional time spent on safety and aftercare planning following hospital discharge may be indicated.

1. Introduction

Clinicians and third-party insurance companies are tasked with efficiently assessing risk and intensity of care for many psychiatric inpatients each day. These decisions become increasingly challenging in the context of comorbid or severe presentations. Although the medical records that are already maintained in routine clinical practice provide a wealth of data about real-world diagnostic and treatment decision-making, systemic interpretation of risk based on these records is under-utilized. With the ease of analyzing electronic medical record (EMR) data, highly powered data analytic approaches can answer important research questions about diagnostic risk factors that have potential for immediate clinical utility.

In this study, we analyze the association between suicide behavior and the presence of comorbid posttraumatic stress disorder (PTSD) or abuse history in a large sample of psychiatric inpatients with a diagnosis of major depressive disorder. Although there is a clear relationship between the presence of trauma and suicide in military (Freeman et al., 2000), outpatient (Tarrier and Gregg, 2004), and adolescent samples (Prinstein et al., 2008), there are contradictory findings that have demonstrated a reduction in suicide risk in military samples with PTSD (see Zivin et al., 2007, for an example), and few studies are available on this risk in adult psychiatric inpatients. The elevated illness severity in psychiatric inpatients might alter or exaggerate the relationship between suicide behaviors and PTSD relative to less severe samples. Psychiatric inpatients are more likely to ultimately die by suicide relative to those with no prior hospitalization, especially in females and in those with a history of a prior suicide attempt (Goldberger et al., 2015). It is essential to determine whether PTSD confers an elevated association with suicidal behavior at the inpatient level of severity, an already acute and high-risk sample, as this might warrant additional safety precautions both during and after hospitalization.

One prior study in psychiatric inpatients found a significant association between PTSD, in particular, and history of suicide attempts, but this relationship was not present in those with an abuse history, more broadly (Oquendo et al., 2003). However, this study had a small sample (PTSD $n=24$; abuse history $n=62$) compared to the current study, thus precluding an analysis of moderators of the relationship between PTSD, abuse history, and suicide attempt history despite clear differences in PTSD based on gender. Another study detected a relationship between a diagnosis of PTSD obtained through a structured interview and suicide risk in inpatients, but also had a relatively small sample size (PTSD

* Corresponding author.
E-mail address: Lauren_Weinstock@Brown.edu (L.M. Weinstock).

http://dx.doi.org/10.1016/j.psychres.2016.06.046
0165-1781/

$n=59$), and did not explore moderators of the relationship between trauma and suicide (Oquendo et al., 2005). Further, the relationship between PTSD and suicide in this study was no longer significant after accounting for other meaningful predictors in a multivariate analysis. Outpatient (Foote et al., 2008) and military studies (Rudd et al., 1996) have demonstrated that the presence of PTSD was significantly associated with multiple suicide attempts, but this relationship might be altered in a more severe civilian inpatient sample.

The current study examines the relationship between PTSD, history of (sexual, physical, and/or emotional) abuse, and suicide attempt history in a large sample of psychiatric inpatients. It also considers two key variables, including gender and insurance status (a proxy for socioeconomic status) as moderators of the relationship between PTSD and suicide attempt history. These variables were chosen *a priori* as potential moderators for several reasons. Firstly, there are strong associations between each of these variables and either PTSD or suicide risk (Thompson et al., 1999; Waldrop et al., 2007), but no studies have examined these important variables in models containing both PTSD and suicide history. As mentioned above, gender is a key predictor of completed suicide deaths following psychiatric hospitalization (Goldberger et al., 2015), but it is not clear how gender intersects with PTSD diagnosis in the association with suicidal behavior in an acute high-risk sample. Insurance status was chosen as a moderator because of its relation to both income (Okoro et al., 2015), with some studies showing a positive association between income and suicide risk (Agerbo et al., 2001), and access to high quality healthcare (Aseltine et al., 2015), which is negatively associated with suicidal ideation (Hargreaves et al., 2015). Similarly, lack of insurance following trauma exposure is associated with greater unmet mental health care needs (Ghuman et al., 2014) and lack of access to treatment (Price et al., 2014), but it is unclear whether insurance status influences the relationship between PTSD and suicidal behavior. Finally, the presence of a substance use disorder was included as a potential moderator because of some evidence that in a comorbid PTSD and substance dependence sample, the presence of alcohol use disorders or polysubstance dependence was more common in those with a suicide attempt history (Harned et al., 2006). To limit our analyses and prevent Type I error, no additional moderators were explored in this study. Over and above other significant predictors, we hypothesized that the presence of PTSD diagnosis or a history of abuse would be associated with elevated likelihood of a past suicide attempt. We also hypothesized that PTSD and abuse history would account for unique variance in a history of multiple (i.e., >1) suicide attempts. Finally, we hypothesized that the risk of suicide in those with PTSD or a history of abuse would be greater in females and in the uninsured, and in those with a comorbid substance use disorder.

2. Methods

2.1. Sample

A retrospective chart review was conducted for consecutively admitted patients with major depressive disorder (MDD) admitted to inpatient or partial hospitalization programs at Butler Hospital in Providence, RI during the 2013 calendar year. Inclusion criteria were adults with a diagnosis of MDD at discharge and initial hospital episode (for those re-hospitalized during the chart review period). For patients with multiple admissions during this calendar year, their first admission was chosen as the index hospitalization. The resulting sample included 1315 unique cases for analysis; however, suicide attempt history was only available for 692 cases (see Table 1 for demographic details). Therefore, only these cases are included in all subsequent analyses. Prior to study initiation, a Protected Health Information (PHI) waiver and approval to conduct the chart review were obtained from the Butler Hospital Institutional Review Board.

Table 1
Demographic and clinical characteristics associated with suicide attempt history.

	Hx of Suicide Attempt ($n=401$)	No Hx Suicide Attempt ($n=291$)		
Continuous Variables	*M (SD)*	*M (SD)*	*t*	*p*
Age	43.3 (12.9)	45.6 (14.0)	2.30	0.022
GAF	50.8 (6.2)	51.4 (6.3)	1.21	0.226
Hospital episode #	8.8 (10.7)	4.2 (6.5)	−6.47	<0.001
Total Axis I Diagnoses	1.9 (1.2)	1.5 (1.1)	−5.08	<0.001
Total Axis II Diagnoses	0.2 (0.4)	0.1 (0.3)	−3.67	<0.001
Total Axis III Diagnoses	2.7 (2.1)	2.2 (1.9)	−3.17	0.002
Total medications	5.2 (4.2)	4.3 (3.6)	−2.71	0.007
Total psychotropic	2.2 (1.8)	1.9 (1.5)	−2.18	0.029
Categorical Variables	*n (%)*	*n (%)*	χ^2	*p*
PTSD	108 (27)	37 (12.7)	20.58	0.000
Abuse History	214 (68.8)	112 (48.3)	23.35	0.000
Sex (female)	242 (60.4)	168 (57.9)	0.41	0.523
Race (White)	336 (87.1)	249 (88.9)	0.54	0.463
Ethnicity (Non-Hispanic)	335 (87.7)	244 (90.4)	1.14	0.286
Civil Status (married)	93 (23.2)	99 (34.0)	9.863	0.002
Index Hospitalization (inpatient)	395 (98.5)	291 (100.0)	4.39	0.036
Insurance Status			1.86	0.396
Private	237 (59.3)	184 (63.2)	–	–
Public	103 (25.8)	62 (21.3)	–	–
Uninsured	60 (15.0)	45 (15.5)	–	–
Psychotic features at intake	85 (21.2)	53 (18.3)	0.90	0.343
Substance use disorder	233 (58.1)	107 (36.8)	30.71	<0.001
MDD severity (severe)	388 (97.0)	278 (95.5)	1.04	0.308

2.2. Procedures

During admission to Butler Hospital, patients complete a clinical interview with either a licensed psychiatrist, a licensed psychiatric nurse practitioner, or a psychology/psychiatry resident under the close supervision of a licensed psychiatrist. Upon completion of the clinical interview, the clinician completes the intake report within the electronic medical record (EMR), which includes a combination of free-text responses and forced choice responses. Medical records completed by a non-licensed clinician (i.e., a resident) are read and signed-off by the supervising psychiatrist.

Relevant demographic, diagnostic, and clinical correlate information was extracted from the EMR by a hospital medical records manager and sent to the authors in excel files. The authors then cleaned and coded the standardized medical field forms. Standardized fields in the EMR allow for computer algorithms to extract the following demographic information, coded as follows: age, sex (0=male, 1=female), ethnicity (0=non-Latino/Hispanic, 1=Latino/Hispanic), race (0=White, 1=non-White), marital status (0=non-married/single/divorced/separated/widowed, 1=married/domestic partnered), Global Assessment of Functioning (GAF) at admission, number of episodes (i.e., admissions) at Butler Hospital, type of index hospitalization (0=partial hospitalization, 1= inpatient hospitalization), and insurance status (0=uninsured, 1=public insurance, 2=private insurance), suicide attempt history (0=no, 1=yes), and multiple suicide attempts history (0=no prior suicide attempts, 1=1 prior suicide attempt, 2=2 or more prior suicide attempts). In addition, total Diagnostic and Statistical Manual of Mental Disorder (DSM-IV; American Psychiatric Association, 2000) and International Classification of Diseases (ICD-10; World Health Organization, 1993) Axis I, II, and III diagnoses were