



Published in final edited form as:

J Trauma. 2010 December ; 69(6): 1560–1566. doi:10.1097/TA.0b013e3181e59c05.

Prevalence of PTSD and Major Depression Following Trauma-Center Hospitalization

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Abstract

Background—Individuals hospitalized after physical trauma are at heightened risk for mental disorders. We examined prevalence rates of both posttraumatic stress disorder (PTSD) and major depression at 6- and 12-months in a sample of 677 individuals experiencing different types of trauma who were representative of physical trauma survivors hospitalized in Los Angeles County trauma centers. Demographic and injury-related risk factors for these disorders were also evaluated.

Methods—Bivariate logistic regressions estimated risk for PTSD and depression at either 6- or 12-months associated with baseline risk factors.

Results—At 6-months, 31% of participants met screening criteria for probable PTSD and 31% met criteria for probable depression. At 12-months, 28% and 29% met criteria for PTSD and depression, respectively. There were also high rates of comorbidity; depression and PTSD co-occurred in 21% of individuals at 6-months and in 19% of patients at 12-months. Bivariate logistic regressions indicated that preexisting disability and lower education were associated with higher odds of PTSD at either 6- or 12-months. African Americans and Hispanics had higher odds of PTSD compared to non-Hispanic Caucasians. Assault-related injury (versus accident), more severe injury, and longer hospitalizations were also associated with greater odds of PTSD. By contrast, higher odds of depression at 6- or 12-months were only associated with preexisting disability, losing consciousness, more severe injury, and longer hospitalizations.

Conclusions—Key demographic and injury characteristics may enhance identification of at-risk trauma survivors who would benefit from targeted screening, patient education, and early intervention efforts.

Keywords

Traumatic injury; Posttraumatic stress disorder; Depression; Prevalence

INTRODUCTION

Between 2 and 2.5 million Americans are discharged from hospitals every year after physical injury (1). In addition to the challenges posed to their physical health, individuals

who experience traumatic physical injuries are at heightened risk for mental disorders such as posttraumatic stress disorder (PTSD) and related comorbid disorders such as major depression (2). The emergence of these mental disorders following physical trauma is associated with poor long-term health outcomes including impaired physical functioning and disability and lower self-reported quality of life (3). The availability of early interventions could potentially mitigate the public health burden associated with PTSD or depression and facilitate full recovery following physical trauma. Additional information is needed, however, to estimate the proportion of hospitalized physical injury survivors who may benefit from such services in the weeks and months following physical injury.

Although a number of studies have examined the extent to which hospitalized physical trauma survivors develop mental disorders, several gaps in the literature remain. First, most available studies that examine prevalence rates of mental disorders have focused on samples drawn from individual trauma centers that may or may not be representative of populations to which they apply their results (4,5). Although this research has provided important information, it is difficult to generalize from the existing studies to other medical centers or public health systems that may have a different patient mix on known risk factors for post-traumatic distress such as injury severity or type of injury. Thus, additional research is needed to determine the extent to which broader, meaningful populations suffer from PTSD and major depression following trauma exposure. Second, with a few exceptions (6,7), most investigations have focused on the emergence of PTSD in physical injury survivors. By contrast, relatively little attention has been devoted to the development of major depression. Major depression is believed to be a common condition following traumatic physical injury requiring hospitalization and is associated with significant impairment in functional status (6,7). Prior investigations generally focus on either PTSD or depression (3,4) with the exception of one study (8) of injury survivors in the National Study on the Costs and Outcomes of Trauma (NSCOT), which found that 20.7% and 6.6% of individuals developed PTSD or depression 12-months post-injury, respectively. We build on the results of that study, whose primary goal was to examine functional outcomes associated with PTSD and depression, to also examine the demographic and injury-related predictors of PTSD and depression. Third, many albeit not all studies have examined the development of mental health problems in individuals who had been hospitalized for specific types of trauma. The bulk of this research focuses exclusively on injury related to motor vehicle accidents (9,10). However, the degree to which mental health problems emerge following physical injury may vary depending on the mechanism of injury. Thus, available studies provide an uncertain basis for extrapolation to the broader population of all persons who experience a physical trauma requiring hospitalization.

Our primary goal was to estimate the prevalence of PTSD and major depression at two time points in individuals who had been hospitalized for the treatment of physical injuries stemming from various types of trauma. The study was designed to yield prevalence estimates of these disorders within the Los Angeles County Trauma system. We also sought to identify factors that might aid in the early identification of individuals at risk for developing these mental disorders in the months following hospitalization. Our main focus was on readily available patient characteristics (e.g., race/ethnicity, gender, and injury features) that might help screening and triage efforts to optimize use of limited public health resources.

MATERIALS AND METHODS

Participants and Procedures

This study was funded by grants from the National Institute of Mental Health and the National Institute on Alcohol Abuse and Alcoholism. The former grant was designed to

assess the mental health consequences of physical trauma; the latter was conducted to examine the relationship between posttrauma psychological morbidity and alcohol consumption and abuse in adult physical trauma survivors. Data collection procedures have been detailed in prior work on this sample that examined various topics including ethnic differences in the manifestation of posttraumatic stress symptoms, alcohol consumption following trauma exposure, and posttraumatic mental health service utilization (e.g., 11). The sample was recruited between February 2004 and August 2006 from four trauma centers in Los Angeles County: Los Angeles County + University of Southern California Medical Center (LAC+USC), UCLA Medical Center, King-Drew Medical Center, and California Hospital Medical Center. Adult patients were eligible for the study if they met the requirements for the Los Angeles County Trauma registry. The purpose of the registry is to facilitate monitoring of individuals who suffered potentially life-threatening injuries that required hospitalization and surgical intervention. Trauma patients were ineligible to participate if they (a) could not communicate in English or Spanish; (b) had been incarcerated at hospital admission; (c) had been homeless prior to hospitalization and expected to be homeless upon discharge; (d) had cognitive impairment that precluded informed consent; or (e) had experienced injuries from family violence or attempted suicide.

Recruitment followed a two stage procedure: stage one identified admitted patients thought to be eligible for the study and stage two used a face-to-face screening interview to verify eligibility. Different methods for identifying potentially eligible individuals in stage one were used at the four hospitals due to different types of medical records and Institutional Review Board-approved protocols. At LAC+USC, research staff had direct access to computerized admission records. At the remaining three trauma centers, medical personnel notified research staff of individuals who appeared to meet study eligibility requirements whereupon research staff conducted screening interviews.

Interviewers attempted to screen and consent all patients identified as potentially eligible, with one exception: using order of admission, the research staff approached every other Hispanic patient at LAC+USC. This random sampling strategy adjusted for the known overrepresentation of Hispanics at this trauma center relative to the overall population served by the Los Angeles County trauma service.

Patients who appeared to be possible candidates ($N = 1133$) were approached in a face-to-face screening interview to assess additional eligibility criteria. Of those screened, patients were excluded if they were unable to converse in either English or Spanish (10.3%), if they were homeless and could not give contact information for a follow up interview (10.0%), if the injuries were due to an attempted suicide (2.4%), if the injuries were caused by family violence (1.4%), or if they had a cognitive impairment that prevented informed consent or understanding the interview (0.9%). Eighty-nine percent of attempted screenings were completed.

Of the 850 patients identified as eligible based on screening, 677 (80%) completed the baseline interview at a median of 9 days following the trauma. Of the 677 who completed an initial interview, 476 (70%) completed 6-month follow-up interviews and 462 (68%) completed 12-month follow-up interviews. Participants were given \$25 for each completed assessment. All participants provided informed consent and study procedures were approved and monitored by the Institutional Review Boards of the RAND Corporation, LAC+USC Medical Center, UCLA Medical Center, King-Drew Medical Center, and California Hospital Medical Center.

Measures

We employed two screening tools to determine whether or not participants met screening criteria for either PTSD or major depression within a 2-week period at 6 months and at 12 months following trauma.

PTSD symptoms—The Posttraumatic Stress Disorder Checklist (PCL) was used to assess PTSD symptom severity at the 6- and 12-month interviews (12). The PCL is a 17-item self-report measure of PTSD symptoms in which participants rated the degree to which they were bothered by each symptom in the past two weeks. Responses ranged from 1 (not at all) to 5 (extremely). Symptoms were assessed with respect to the initial injury. The PCL has been used in diverse samples, including physical trauma survivors, and possesses solid psychometric properties (13). Participant PCL scores averaged 38.32 (SD = 16.75) and 36.19 (SD = 16.18) at the 6- and 12-month follow-up assessments, respectively. To meet screening criteria for PTSD, the PCL was scored as recommended by Weathers et al.(12). Specifically, PCL items receiving a score of 3 (moderately) or greater were counted as diagnostically significant. These were mapped against DSM-IV criteria for PTSD to determine probable diagnosis.

Depression symptoms—The Patient Health Questionnaire 8 (PHQ-8) (14), a variant of the PHQ-9 in which the suicidality item is omitted, was used as a screener to identify individuals with probable major depression. The PHQ-8 is a well-validated and widely used screening measure for major depression. Respondents report the frequency with which symptoms were experienced in the past two weeks, using a 4-point scale ranging from 0 (not at all) to 3 (every day). Depressive symptom severity was calculated by summing the 8 items yielding a mean score of 7.35 (SD = 6.75) at 6 months and 6.50 (SD = 6.58) at 12 months. Participants with a score of 10 or greater on the PHQ were regarded as meeting screening criteria for probable major depression (14).

Sociodemographic characteristics—Information on age, gender, race/ethnicity, employment status, and income earned over the last 6 months was collected during the baseline interview. Age is represented in decades, rather than years, in the analyses to make odds ratios more interpretable. The pre-injury employment status question captured pre-existing disability as one of the response categories.

Injury characteristics—Medical records were examined to obtain information on duration of hospitalization, injury severity score (ISS) (15) and Glasgow Coma Scale (GCS) (16). The Injury Severity Score measures objective injury severity. This index incorporates the site and extent of injuries into a single score ranging from 1 to 75, with higher scores indicating a higher probability of death from the injuries. Due to highly skewed distribution of ISS scores (mean = 8.73, SD = 7.42), we dichotomized ISS scores at 10, with higher scores reflecting greater severity. The vast majority of participants exhibited no cognitive impairment as assessed by the GCS, a cognitive screening examination performed by medical staff at admission. GCS range from 3 to 15, with lower scores reflecting greater cognitive impairment. The mean GCS in this sample at baseline was 14.68 (SD = 1.05). Since most participants received the maximum GCS of 15, GCS was not examined as a potential predictor for PTSD or major depression. Participants were also asked, at the initial interview, to report whether they lost consciousness following the injury. This measure of self-reported loss of consciousness does not necessarily correspond to observer ratings on the GCS. We use self-reported loss of consciousness as a predictor because this sample had little variability on GCS. Moreover, we do not know if the self-reported loss of consciousness was due to organic or psychogenic origins. We also assessed the mechanism of injury, classifying events as either assaults or accidents. Assaults were defined as injuries

resulting from physical violence involving another person (e.g., being shot with a gun or physically beaten). All other types of injuries (e.g., motor vehicle collisions) were classified as accidents.

Data Analysis

Six- and 12-month post-injury prevalence rates of PTSD and major depression were calculated. In bivariate analyses, we examined the association between baseline risk factors and PTSD at either 6- or 12-months post-injury. Likewise, we assessed bivariate relationships between baseline characteristics and major depression as assessed at either 6- or 12- months. We aggregated across the two assessment intervals to indicate whether or not participants met screening criteria for a given disorder during the 12-month follow-up period. Post-stratification and attrition weights were used in all analyses to create an analytic sample that was representative of the population of patients seen in trauma centers in Los Angeles County in 2005 as identified in the Los Angeles County Trauma and Emergency Medicine Information Systems (TEMIS). TEMIS provides patient-level data for every trauma patient at each of the county trauma centers. Although the unweighted baseline sample was very similar to the 2005 TEMIS population with respect to age, ethnicity, gender, and cause of injury, post-stratification weights were created to exactly match the sample to the TEMIS population in 36 categories: age (3 levels), sex (2 levels), ethnicity (Hispanic, African American, Caucasian/Other), cause of injury (assault, accident), as well as ISS (<10, ≥10). We used an ISS cut-point of 10 because inspection of the distribution of ISS scores suggested that this cut-point represented a natural, empirical breakpoint in the data.

To adjust for the effects of study attrition from baseline to 6- and 12-month follow-up interviews, a logistic regression model was built to predict study attrition from all baseline demographic characteristics, ISS, and mental health symptoms. This model was used to generate inverse probability attrition weights. All subsequent analyses were conducted using both attrition and post-stratification weights to provide an analytic sample that is representative of the (a) general Los Angeles County trauma population on age, sex, ethnicity, cause of injury, and ISS, and (b) full set of sociodemographic characteristics of the baseline sample, including the severity of mental health symptoms at baseline.

RESULTS

Table 1 provides weighted and unweighted baseline sample characteristics with post-stratification weights (N = 677). The weighted sample was an average of 34 years old, 78% male, 19% non-Hispanic African American, 49% Hispanic, and 47% had a high school education (Table 1). Approximately 5% of participants reported being disabled and not working prior to injury, 32% of participants experienced an assault-related injury, and 48% of the sample reported losing consciousness as a result of their injury.

Prevalence Rates

Of the 476 individuals who were interviewed at 6-months, 31% met screening criteria for PTSD. Approximately 31% met screening criteria for major depression at 6-months post-injury (Table 2). Comorbid depression and PTSD occurred in 21% of individuals at 6-months. At 12-months post-injury, nearly 29% of 462 individuals met screening criteria for PTSD and 28% met screening criteria for depression (Table 3). Comorbid depression and PTSD occurred in 19% of patients at 12-months.

Bivariate Associations between Risk Factors and PTSD at 6 or 12- months

Bivariate logistic regressions indicated that several baseline demographic and injury characteristics were associated with the presence of PTSD at either the 6- or 12-month assessment (Table 4). Compared to non-Hispanic Caucasians, Hispanics and African Americans were at greater risk of developing PTSD. Participants who reported having less than a high school education were also more likely to develop PTSD than their more educated counterparts. Higher income was inversely associated with lower risk for PTSD. Persons who reported having a pre-existing disability at baseline were more likely to meet criteria for PTSD at follow-up compared to individuals who reported being employed. Injury characteristics such as assault, higher injury severity score, and lengthier hospitalization were also significantly associated with meeting PTSD criteria at follow-up.

Bivariate Associations between Risk Factors and Depression at 6 or 12- months

Bivariate analyses revealed that age, race, education, income, marital status were not statistically associated with increased odds of depression ($p > 0.05$) (see Table 4). However, pre-existing disability was associated with greater risk of developing depression at either the 6- or 12-month assessment. Similarly, individuals who reported that they had lost consciousness during the injury were more likely to meet screening criteria for major depression at follow-up. Greater injury severity scores and lengthier hospitalizations were also associated with the development of depression at follow-up.

DISCUSSION

This study examined the prevalence and predictors of PTSD and major depression in the twelve months following emergent hospitalization for serious physical injury. Unlike many other investigations that focus only on either PTSD or depression in samples that cannot be easily generalized to a specific population (3,5), or only include one type of trauma (9,10), this study provided population-level prevalence estimates for individuals who sustained physical injuries from the full range of medical trauma in Los Angeles County, an area that includes more than 10 million residents.

The study found that rates of both probable major depression and probable PTSD were relatively high, very similar to one another, and improved only slightly over time. Each disorder occurred in approximately 31% of the sample at 6 months, and 29% at 12-months post-injury. Although these rates are highly similar, focusing on only one disorder would substantially underestimate the extent of mental health problems in this population. Nearly 42% of patients met screening criteria for either PTSD, or depression, or both at 6 months (see Table 1), while 38% met screening criteria for PTSD, or major depression, or both at 12-months (see Table 2). One prior study that examined a weighted sample of 9,734 trauma survivors across 12 states in the NSCOT study found that 20.7% and 6.6% of trauma patients developed PTSD and depression, respectively, measured at 12 months post-trauma (8). Approximately 5% of individuals had both PTSD and depression at 12 months. The 20.7% rate of PTSD found in Zatzick et al. was lower than the 12-month PTSD prevalence rate of 28.5% found in this study despite the use of the same screening instrument. The 6.6% rate of 12-month depression in the NSCOT study was much lower than the 27.9% found in this study. Differences in depression prevalence rates may have been partly due to differences in the instrument used to diagnose depression. Other factors that may account for different prevalence rates could include differences in sample characteristics, and injury type and severity. While the NSCOT study was larger in scope, we build on their findings to include 6-month prevalence rates of PTSD and depression, and also examine baseline demographic and injury risk factors for subsequent PTSD and depression. Moreover, we

also account for differences in sample characteristics over the follow-up period by using attrition weights.

These results attest to the importance of providing aftercare to address the mental health problems of physical trauma survivors. Efficacious interventions exist to treat survivors with PTSD or major depression (17), and these conditions are less likely to become chronic conditions with effective, early treatment. Since few previously-hospitalized physical trauma survivors receive mental health services in the months following discharge (18,19), strategies must be developed to meet the mental health needs of this population.

The scope of this public health problem is likely to tax available resources to provide requisite services. Based on the approximately 16,000 adults who are hospitalized annually for emergent trauma services in Los Angeles County, we calculated that 41.5%, or 6,640 patients may have a likely need for treatment of either PTSD, major depression, or both disorders, using the 6-month prevalence rate data in this study. Moreover, to the extent that these 6-month prevalence rates hold nationally, they suggest that out of 2 to 2.5 million individuals discharged from hospitals every year in the United States after physical injury, as many as 830,000 to 1,037,500 may need trauma-related mental health services 6 months following discharge (1). In addition, results identified specific information that can help with early identification of individuals at greatest risk of requiring subsequent mental health services.

Screening programs administered within the year after injury could monitor the psychological needs of trauma survivors, and could be targeted to those who appear to be at greatest risk. As has been reported elsewhere, this research documents that the risk of developing adverse psychological reactions to trauma exposure varies as a function of both sociodemographic factors (20) and the nature of the traumatic event (21). In this instance, high risk trauma survivors include individuals with lower levels of education and income, racial/ethnic minorities, persons with lengthier hospital stays and greater injury severity, as well as those who experience assaults or loss of consciousness. We should note that these predictors may, to some extent, be interrelated inasmuch as individuals with lengthier hospitalizations are likely to be those with more severe injuries. To the degree that this is true, any of these indicators may be useful predictors of subsequent PTSD or depression for clinicians in early identification efforts. Although screening programs may appear costly in terms of finances and resources, some evidence suggests that these conditions, if left undiagnosed and untreated, have high societal costs (22,23).

A number of limitations should be considered when interpreting these findings. First, this study was designed to examine traumatic physical injury and its mental health sequelae in hospitalized persons treated within Los Angeles County trauma centers, and may not yield findings generalizable to trauma centers in other regions across the United States, or to persons whose injuries could be treated on an outpatient basis. In addition, we used a symptom screener to identify PTSD and major depression rather than a diagnostic interview. To the extent that screening instruments might overestimate prevalence rates relative to clinician-administered diagnostic interviews (24), additional research is indicated. Further research is also needed to understand the meaning of self-reported loss of consciousness. Although this variable emerged as a significant predictor of outcomes, additional research is needed to determine the extent to which this measure assesses loss of consciousness due to organic or psychogenic causes as well as the extent to which self-reported loss of consciousness reflects actual loss of consciousness. Finally, the goal of this study was to identify characteristics that could be readily used by policy makers or front-line trauma service providers as part of resource allocation or treatment planning. Thus, our models did not include the full range of potential risk factors for post-traumatic mental disorders such as

lifetime history of mental disorders, prior traumatic events, and psychosocial factors (2,24,25 for review).

In summary, a substantial proportion of the survivors of traumatic physical injury necessitating hospitalization develop mental health problems within the 12 months following hospitalization. These rates, in conjunction with prior research indicating low mental health service utilization and high unmet needs for mental health services in the months following hospital discharge raises questions about the adequacy of policies and practices directed at mitigating the public health impact of physical injury.

Acknowledgments

Sources of Support: This work was funded by grants from the National Institute on Alcohol Abuse and Alcoholism (R01AA014246) and the National Institute of Mental Health (R01MH56122; R34MH071569).

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Table 1

Weighted and Unweighted Baseline Characteristics (N = 677)

	Weighted		Unweighted	
	% or Mean	95% C.I.	% or Mean	95% C.I.
Demographic Characteristics				
Age (decades)	3.44	(3.34, 3.53)	3.33	(3.24, 3.42)
Male	78.47	(75.12, 81.82)	77.55	(74.40, 80.70)
Race/Ethnicity				
African American	18.86	(16.00, 21.72)	25.26	(21.98, 28.54)
Caucasian (non-Hispanic)	24.71	(20.92, 28.50)	19.94	(16.92, 22.96)
Hispanic	49.17	(45.08, 53.26)	48.74	(44.97, 52.52)
Other Ethnicity/race	7.27	(4.93, 9.60)	6.06	(4.25, 7.86)
Education				
< High school degree	32.80	(29.02, 36.58)	33.53	(29.97, 37.10)
High school degree	47.23	(43.15, 51.31)	48.60	(44.82, 52.37)
> High school degree	19.98	(16.51, 23.44)	17.87	(14.98, 20.77)
6-month income (in \$10,000s)	1.34	(1.20, 1.47)	1.30	(1.18, 1.41)
Marital Status				
Married	31.63	(27.73, 35.53)	29.54	(26.10, 32.99)
Divorced/Widowed/Separated	20.46	(17.15, 23.76)	19.94	(16.92, 22.96)
Single/Never Married	47.92	(43.83, 52.00)	50.52	(46.74, 54.29)
Employment status before injury				
Employed	73.03	(69.46, 76.60)	72.08	(68.70, 75.47)
Unemployed	22.23	(18.86, 25.60)	22.60	(19.44, 25.76)
Disabled	4.74	(3.15, 6.33)	5.32	(3.62, 7.01)
Injury Characteristics				
Loss of consciousness	47.80	(43.72, 51.88)	48.01	(44.23, 51.78)
Assault (vs. accident)	32.10	(28.31, 35.89)	36.34	(32.70, 39.97)
Injury severity score \geq 10	33.99	(30.30, 37.68)	40.03	(36.33, 43.73)
Time in hospital (days)	8.66	(7.96, 9.35)	9.24	(8.51, 9.97)

Table 2

Prevalence and Comorbidity of Mental Disorders at 6-months

Mental Disorder	Unweighted Sample Size	Weighted %	95% C.I.
PTSD	157	30.8	26.4, 35.1
Major Depression	157	31.3	26.8, 35.7
Co-Occurrence of disorders			
No disorder	270	58.5	53.7, 63.3
Only PTSD	49	10.3	7.4, 13.1
Only Major Depression	49	10.7	7.7, 13.8
PTSD and Major Depression	108	20.5	16.8, 24.2
Total sample at 6-months	476		

Table 3

Prevalence and Comorbidity of Mental Disorders at 12-months

Mental Disorder	Unweighted Sample Size	Weighted %	95% C.I.
PTSD	129	28.5	23.9, 33.1
Major Depression	131	27.9	23.5, 32.3
Co-Occurrence of disorders			
No disorder	290	62.3	57.5, 67.2
Only PTSD	41	9.8	6.6, 13.0
Only Major Depression	43	9.1	6.3, 12.0
PTSD and Major Depression	88	18.8	14.9, 22.6
Total sample at 12-months	462		

Table 4
Odds Ratios for 6- or 12-month PTSD and Depression by Baseline Characteristics (N=391)

	PTSD at 6 or 12 months (N=165)	95% C.I.	Depression at 6 or 12 months (N=158)	95% C.I.
Demographic Characteristics				
Age (decades)	1.03	(0.85, 1.23)	0.96	(0.80, 1.16)
Female	1.04	(0.61, 1.76)	1.15	(0.68, 1.94)
Race/Ethnicity				
African American	1.87*	(0.93, 3.76)	1.23	(0.63, 2.42)
Hispanic	2.03**	(1.10, 3.73)	1.18	(0.66, 2.11)
Other	0.77	(0.28, 2.12)	0.83	(0.31, 2.23)
Education				
< High school degree	2.08**	(1.25, 3.44)	1.01	(0.61, 1.66)
> High school degree	0.74	(0.40, 1.38)	0.64	(0.35, 1.16)
6-month income (\$10,000s)	0.84**	(0.71, 0.99)	0.84	(0.74, 1.03)
Marital Status				
Divorced	1.48	(0.78, 2.80)	1.29	(0.68, 2.43)
Single/Never Married	0.75	(0.45, 1.25)	1.08	(0.65, 1.79)
Employment status before injury				
Unemployed	0.82	(0.47, 1.43)	1.44	(0.83, 2.52)
Disabled	4.05**	(1.46, 11.20)	5.01**	(1.83, 13.68)
Injury Characteristics				
Loss of consciousness	1.38	(0.88, 2.14)	1.82**	(1.16, 2.84)
Assault (vs. accident)	2.02**	(1.22, 3.34)	1.07	(0.65, 1.75)
Injury severity score \geq 10	1.53*	(0.98, 2.39)	1.53*	(0.98, 2.38)
Time in hospital (days)	1.04**	(1.01, 1.06)	1.04**	(1.01, 1.07)

Referent groups are: Non-Hispanic Caucasian; High school degree; Married; Employed

**
 $p \leq 0.05$,

*
 $p \leq 0.10$