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Psychiatric Disorders in Patients Presenting to the Emergency Department for Minor Injury

Therese S. Richmond, PhDCRNP,
Associate Professor, University of Pennsylvania School of Nursing

Judd E. Hollander, MD,
Professor & Clinical Research Director, Department of Emergency Medicine, University of Pennsylvania, School of Medicine

Theimann H. Ackerson, MSSW,
Research Project Manager, University of Pennsylvania School of Nursing

Keith Robinson, MD,
Associate Professor, Department of Physical Medicine & Rehabilitation, University of Pennsylvania School of Medicine

Vicente Gracias, MD,
Assistant Professor of Surgery, Division of Traumatology & Surgical Critical Care, University of Pennsylvania School of Medicine

Justine Shults, PhD, and
Assistant Professor of Biostatistics, Department of Clinical Epidemiology & Biostatistics, University of Pennsylvania School of Medicine

Jay Amsterdam, MD
Professor of Psychiatry, Department of Psychiatry, University of Pennsylvania School of Medicine

Abstract

Background—Thirty-five percent of all Emergency Department (ED) visits are for physical injury.

Objectives—to examine the proportion of patients presenting to an ED for physical injury with a history of or current Axis I/II psychiatric disorders and to compare patients with a positive psychiatric history, a negative psychiatric history, and a current psychiatric disorder.

Methods—275 individuals were randomly selected from adults presenting to the ED with a documented anatomic injury but with normal physiology. Exclusion criteria were: injury in the previous 2 years or from medical illness/domestic violence; reported treatment for major depression or psychoses. Psychiatric history and current disorders were diagnosed using the Structured Clinical Interview for DSM IV (SCID), a structured psychiatric interview. Three groups (positive psychiatric history, negative psychiatric history, current psychiatric disorder) were compared using Chi square and ANOVA.

Results—The sample of men (51.6%) and women (48.4%), was Black (57.1%) and White (39.6%). 103 patients (44.7%) met DSM IV criteria for a positive psychiatric history (n=80) or a current psychiatric disorder (n=43). A past history of depression (24%) exceeded the frequency of a history of other disorders (anxiety-6%, alcohol use/abuse-14%, drug use/abuse-15%, adjustment-23%, conduct disorders-14%). Current mood disorders (47%) also exceeded other current diagnoses

Corresponding Author: Therese S. Richmond PhD, School of Nursing, University of Pennsylvania, 420 Guardian Drive, Philadelphia, PA 19104, Phone 215-573-7646; FAX 215-573-7478; Email terryr@nursing.upenn.edu.

(anxiety-9%, alcohol-16%, drug-7%, adjustment-7%, personality disorders-12%). Those with a current diagnosis were more likely to be unemployed ($p<0.001$) at the time of injury.

Conclusions—Psychiatric co-morbid disorders or a positive psychiatric history was found frequently in individuals minor injury. An unplanned contact with the health care system (specifically an ED) for treatment of physical injury offers an opportunity for nurses to identify patients with psychiatric morbidity and to refer patients for appropriate therapy.

Keywords

Injury; Comorbid; Mental Disorders; Depression; Anxiety; Posttraumatic Stress

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Traumatic injury is one of the most common reasons among patients seeking care in the ED. Indeed, ten percent of U.S. residents were treated for nonfatal injuries in the ED in 2000 (Office of Statistics & Programming, 2001). In 2002, there were over 39 million visits for injury or poisoning to EDs in the United States, representing 35.5% of all ED visits (McCraig & Burt, 2004). The associated cost for injury-related medical expenditures was estimated to be $117 billion in 2000 (CDC, 2004).

Psychiatric disorders are prevalent, disabling, and can be life-threatening (National Institute of Mental Health [NIMH], 2003; World Health Organization [WHO], 2001). The lifetime prevalence of anxiety, mood, and substance use disorders are higher in the United States than found in other countries (WHO, 2000). Depression, only one of many psychiatric disorders, and injury both rank as the top ten contributors to the global burden of disease (Murray & Lopez, 1997).

There can be psychiatric consequences to physical injury. In an elegant study, Shalev and colleagues (1998) examined the onset and course of major depression and post-injury stress-related disorders over four months after injury. Nineteen percent and 14.2% of patients developed major depression, and 29.9% and 17.5% developed post traumatic stress disorder at one and four months, respectively. Although subjects were drawn from a hospital ED, the severity of injury was not specified and most likely spanned the continuum from minor to serious.

This study is theoretically grounded in Nagi's theory of the disabling process (1991) which indicates that disability results from the complex interaction of biological, pathological, psychological, social, and environmental factors. Propositions in this theory indicate that factors other than the anatomic injury contribute to each step of the disabling process from injury to impairment of organ systems, from impairment to functional limitations at the person level such as mobility, and from limitations to disability. These propositions are supported by the literature indicating that when psychiatric disorders are co-morbid with traumatic injury, the associated disability is substantial. Many studies, including our own, have uncovered psychiatric disorders (Mason, Wardrope, Turpin, & Rowlands, 2002; Read et al., 2004) and disability after injury (Maraste, Persson, & Berntman, 2003; Smith et al., 2005) and demonstrated that psychiatric morbidity is a major contributor to this disability (Michaels et al., 2000).

Despite the increasing recognition of the impact of psychiatric co-morbidity on the outcomes of acute or chronic illness (Evans et al., 2005), care practices are likely to isolate physical and psychiatric issues with poor interfaces between physical and mental health care (Unutzer, Schoenbaum, Druss, & Katon, 2006). A recent study examined the detection and/or treatment of two specific disorders, post traumatic distress and substance intoxication in acute inpatient care of physically injured patients (Zatzick, et al., 2004). The findings are disturbing, indicating

that although providers documented symptoms of psychological distress, rarely were symptomatic patients diagnosed, evaluated or treated for it.

Given the prevalence of traumatic injury and psychiatric disorders and the associated costs, the purpose of this study was to examine the proportion of patients presenting to an ED for minor physical injury with a past history of and/or current Axis I/II psychiatric disorders. Axis I disorders are the major clinical disorders such as depressive, psychotic, anxiety, posttraumatic stress, alcohol use and substance use disorders (APA, 2000). Axis II includes underlying personality disorders including but not limited to antisocial, borderline, narcissistic, and avoidant disorders (APA, 2000). Further, the purpose was to compare the characteristics of three groups (those with and without previous psychiatric disorders and those with current psychiatric disorder). We specifically chose to focus on patients with injuries at the minor end of the severity continuum for two reasons. First, individuals were medically stable and able to participate in a full psychiatric interview within two weeks after injury. Second, our previous work has repeatedly demonstrated that variance in disability after injury was not affected by the severity of physical injury (Richmond, 1997; Richmond, Kauder, Hinkle, & Shults, 2003) and importantly, our work has demonstrated the lack of association between physical injury severity and psychological responses (Richmond & Kauder, 2000).

Methods

Study Design

This study is a cross-sectional analysis of a randomly selected cohort of injured patients presenting to the ED for traumatic injury. The report of this study represents the baseline data for a longitudinal study following injured patients for 1 year post-injury. Specifically, these data come from the first full psychiatric interview that provided a lifetime history and diagnosis of current disorders at the time of the injury to answer the following research questions. What proportion of patients presenting to the ED with minor injury have a positive psychiatric history or a current DSM IV psychiatric diagnosis? Do minor injury patients with a positive psychiatric history or current psychiatric disorder differ in demographics, injury characteristics, or screening psychiatric symptom measures compared to injured patients without a psychiatric history or disorder? This study was approved by the Institutional Review Board at the University of Pennsylvania.

Study Setting & Sample

Participants were recruited from an ED within a tertiary care teaching hospital located in a large metropolitan area in the North East of the U.S. The hospital-based ED treats over 48,000 patients annually. There are 25 acute ED treatment rooms used for evaluation and treatment of patients, and 7 other rooms used for ED Fast Track Assessment. This setting allowed for adequate privacy for study recruitment to take place.

Men and women who sustained an injury within 24 hours of ED admission, who were $\geq$ 18 years of age, and who verbally agreed to release their name and contact information to the study team formed the pool from which subjects were randomly selected. Random selection was used because the high flow of injured patients in this ED and because the intensity of the diagnostic psychiatric interviews precluded the use of a consecutive sample.

Minor injury was defined as a traumatic injury due to physical force that did not imperil life or limb, did not involved the central nervous system, but was sufficiently serious that individuals sought urgent medical care in an ED. Candidates for this study had anatomical injuries associated with an Injury Severity Score (ISS) between 2–8 and a triage-Revised Trauma Score (t-RTS) of 12. The ISS gives one numerical score that compares multiple injuries

across body systems (Baker & O'Neill, 1997). A higher score on the ISS indicates a more severe injury. The t-RTS (Champion et al., 1989) is a derived variable based on systolic blood pressure, respiratory rate, and Glasgow Coma Scale. Values range from 1 (most severe) to 12 (least severe). A t-RTS of 12 for study entry connotes "normal" physiologic status after injury and indicates a 99.6% probability of survival. Calculation of the ISS and t-RTS was performed by the study recruiters and checked by the study coordinator. If there was disagreement on the scoring, a trauma surgeon and Co-I on the study (VG), made the final determination.

Patients were excluded if they had a prior injury requiring medical care in the past 2 years, or if the presenting injury resulted from a concurrent medical illness or domestic violence. Further, patients who were being treated at the time of injury for a major depression or the Axis I psychotic disorders were excluded.

Measurements

The Structured Clinical Interview for DSM-IV Axis I Disorders, Non-Patient Version (SCID I-NP; First, Spitzer, Gibbon, & Williams, 2001) and the SCID II for the diagnosis of personality disorders (First, Spitzer, Gibbon, Williams, & Benjamin, 1996) were used to diagnose and categorize current and past psychiatric disorders. The SCID I-NP and the SCID II are semi-structured diagnostic psychiatric interviews designed to yield judgments with respect to all five Axes of the DSM IV (APA, 2000). The combined SCID I/P and SCID II are interviewer-administered and take ~ 2 to 4 hours to complete (depending upon the presence, or absence, of prior Axis I and/or Axis II disorders).

Current symptoms of depression and anxiety were assessed using the Hamilton Depression Rating Scale (HAM-D) and the Hamilton Anxiety Rating Scale (HAM-A). The HAM-D is a well validated, clinician-rated instrument to ascertain the presence and severity of depressive symptoms resulting from any psychiatric (or non-psychiatric) cause (Hamilton, 1960; Haroutune, Pratt, Gallo, & Eaton, 1998). It has demonstrated discriminate validity between individuals diagnosed with depression and non-depressed controls (Reynolds & Kobak, 1995), and reliability (showing comparable severity) across racial/ethnic groups (Akpaffiong, Kunik, Hale, Molinari, & Orengo, 1999), albeit with variations in symptoms (Wohi, Lesser, & Smith, 1997). The HAM-D is interviewer-rated and takes ~15 minutes to complete. The HAM-A is a validated, clinician-rated instrument to ascertain the presence and severity of anxiety symptoms resulting from any psychiatric (or non-psychiatric) cause (Hamilton, 1959). The HAM-A is interviewer-rated and takes ~15 minutes to complete. The Impact of Event Scale (IES) is a validated, self-report measure for assessing the presence and severity of symptoms resulting from post-traumatic psychological distress (Horowitz, Wilner, & Alvarez, 1979). The IES takes ~5 minutes to complete and in this study, was interviewer-administered. Higher scores on the HAM-D, HAM-A, and IES indicate more severe symptoms.

Study Procedure

All patients who met study criteria, spoke English, and were able to give informed consent were considered for study entry. All patients triaged with injury as their chief complaint were identified by the ED computer system and all of these patients were screened for study entry, in real time, 7 days a week by trained recruiters. Patients were approached when medically stable in the ED (either before discharge to home or transfer to a hospital room) and given a succinct overview of the study. If verbal agreement was secured, standard demographic information, pre-injury health status, and contact information were obtained and the information forwarded to the study team via secure fax.

Daily, a member of the study team reviewed all potential study participants that had been sent to the study team, and then a random sampling procedure was applied. The random selection

protocol was a sophisticated process that was designed to use the medically embedded triage system used by the ED. In this existing triage system, the date and time of patient entry to a treatment room in the ED were electronically documented. To randomly select a study participant, we used a computerized randomization protocol using STATA's random number generator (StatCorp, 1999). This randomization protocol generated a list of random numbers that corresponded with hours in the time block. The smallest random number within a block identified the enrollment hour we used. The randomization was automatically weighted to reflect the flow of patients into the ED (85% arrive between 8am –12 midnight). The patient whose time of treatment room entry was closest to the randomly selected hour (from the random number generator) was selected for full study entry. The study coordinator contacted the randomly selected patient, verified that sampling criteria had been met, and then provided information about the study and answered all questions. If the patient agreed to participate in the study, an appointment for a full psychiatric interview was made. If however, the patient declined further involvement in the study, the study team took the next closest treatment room entry time to the randomly generated time to select the next potential participant.

After telephone consent was obtained, an appointment was made within two weeks after injury for in-person structured psychiatric interviews. These interviews were conducted in a mutually agreeable location that could be in hospital (for hospitalized patients), in the Trauma Outcomes Research Section connected to the hospital, in the participant's home, or in public location with a private space.

All investigator-rated diagnostic and symptom severity ratings were administered by a member of the study team with expertise in structured psychiatric diagnostic interviews for research. After providing a brief explanation of the investigator-rated assessments (SCID, HAM-A, HAM-D), participants were instructed to take their time in responding to the questions. The patient-rated IES was administered after the completion of the interviewer administered assessment. If necessary, the IES was interviewer-administered to avoid literacy issues and to maximize the understanding of the questions (Wu, 2000). Diagnostic validity discrepancies between our co-investigator and supervising psychiatrist (JA) in the study were resolved by consensus conference.

Statistical Analysis

All data were summarized descriptively using frequencies for categorical variables and mean, median, range, standard deviation (SD) for quantitative variables. Frequencies were utilized to report the proportion of participants with past and current psychiatric disorders as based on DSM IV diagnostic criteria. Chi Square analysis was used to compare the three groups (negative psychiatric history, positive psychiatric history, and current psychiatric disorder) by gender, marital status, race, employment status, income and type of injury (Table 1). One-way analysis of variance (ANOVA) was used to determine if mean age, education (in years), ISS (2–8), HAM-D, HAM-A, and IES total score differed across diagnostic groups. Post-hoc Bonferroni adjusted tests were used to identify the groups responsible for differences found. Analyses were conducted using SPSS version 12, with two-sided tests and a p-value < 0.05 as the criterion for statistical significance

Results

One thousand one hundred and ten patients were determined to meet entry criteria and approached in the ED from October 1, 2002 through March 31, 2006, of which 944 verbally consented to have their name forwarded to the study team. Three hundred and sixty-eight were randomly selected and approached for full informed consent to enter the study. Ninety-three refused (25.3%) leaving a sample of 275 men and women.

The gender distribution of the sample was relatively even with 142 men (51.6%) and 133 women (48.4%). The majority was single (53%) and employed (71%) with only 10% of the sample unemployed. Over half of the sample was Black (57%), then Caucasian (40%) and of Asian descent (3%). The mean education level was 13.7 years (sd = 2.7). Income level was evenly distributed with 32.1% earning less than $20,000 per year, 22.8% earning >$60,000 per year, and the remaining 45.1% falling in between. The dominant cause of injury was a slip or fall (48%) followed by injuries from motor vehicle/pedestrian/bike crash (28.7%), sports (8.4%) and assaults (8%). The mean ISS was 4.1 (sd = 1.12), reflecting the presence of minor injury.

Eighty participants had one or more past psychiatric disorders diagnosed according to DSM-IV criteria. Specifically, the past disorders were mood (24%), anxiety (6%), alcohol (14%), drug (15%), adjustment (23%), and conduct disorders (14%). (see Table 1) Sixteen subjects (20%) with a history of past psychiatric disorders, had multiple diagnoses. Forty-three subjects had current psychiatric disorders diagnosed by DSM-IV criteria. The current psychiatric disorders were mood (47%), anxiety (19%), alcohol (16%), drug (7%), adjustment (7%), and personality disorders (12%). Twenty-two subjects with current disorders (51%) had multiple diagnoses. Eighteen subjects with a current diagnosis had no previous psychiatric history.

One hundred twenty-three patients (44.7%) met DSM-IV criteria for a positive psychiatric history (n=80) or a current psychiatric disorder (n=43). (see Table 2). Patients with a current psychiatric disorder were more likely to be unemployed ($p<0.001$) at the time of injury than either those patients with or without a psychiatric history. Comparison across the three groups on all other variables did not reveal significant differences.

While the proportion of patients with depression and related psychiatric disorders was determined by DSM-IV criteria, we also examined whether or not the groups differed on clinician-administered symptom severity scales. (see Table 3) One-way analysis of variance indicated a significant difference across the three groups ($p<0.001$). Post hoc analysis demonstrated that patients with a current disorder had significantly higher scores on the screening HAM-D, HAM-A, and IES, than either of the two other groups. Those with a history of past psychiatric disorders had significantly higher HAM-D, HAM-A, and IES scores than those with a negative history of psychiatric disorders ($p<0.001$).

Discussion

Results of this study reveal that 43 (15.6%) of patients with minor injury seeking care in the ED of a tertiary teaching hospital had a diagnosed psychiatric disorder and 51% (22 out of 43) of these patients had multiple psychiatric disorders. Eighteen of the 38 patients had no previous history of a psychiatric disorder. By far, the most common group of current psychiatric disorders was mood disorders, followed by alcohol and anxiety disorders. Given the fact that patients with a current major depressive episode were excluded from the study, the frequency of mood disorders is striking. Our recruitment and enrollment methods were fastidious and excluded patients with a current major depressive episode, either by self-report of current treatment for a Major Depressive Episode or via a diagnostic SCID. Therefore, we are secure in the exclusion of those patients with a current MDE, making the presence of patients with other mood disorders in this sample important. It is known that depression existing prior to the onset of somatic events is associated with an increased risk of chronic decline (de Jonge et al. 2004) and it is also know that treatment of co-morbid psychiatric disorders is beneficial and cost-effective (Katon, et al., 2006) making our findings on the frequency of psychiatric disorders at the time of injury compelling.

Over one-quarter of the sample (29.1%) had history of at least one psychiatric disorder. In this group, mood disorders were once again the most common, followed by adjustment disorders and drug abuse disorders. Consistent with other studies (Birchall, Brandon, & Taub, 2000; Brown, Campbell, Lehman, Grisham, & Mancill, 2001), 51% of our sample with a current disorder had more than one psychiatric diagnosis and 20% of those with a positive psychiatric history had multiple disorders.

Nearly 45% of this sample had either past or current psychiatric diagnoses, seemingly higher than previous reports ranging from 25% in a random sample of European countries (ESEMeD/NHEDEA 2000 Investigators, 2004), to 30.6% in a general medicine clinic in Japan (Sato & Takeichi, 1993). It is possible that the higher proportion of patients with past or current psychiatric diagnoses is explained by sociocultural differences or by different manifestations of psychiatric disorders for individuals living in the United States. This premise is supported by a recently published U.S. survey documenting a lifetime prevalence of psychiatric disorders using DSM IV diagnostic criteria at 46.6% (Kessler et al., 2005). Given the study design, we can not conclude that the higher frequency of psychiatric disorders in our study is explained by some specific characteristic associated with people who report to an ED for treatment of injury.

Comparison of demographic and injury factors across groups indicate that only education level and employment status differed among the three groups, with lower education and unemployment more likely to occur in those with current disorders. These findings are consistent with those observed in U.S. subjects in a recently published cross-national comparison of mental disorders (WHO International Consortium in Psychiatric Epidemiology, 2000). However, our findings differed in that no gender differences were found among the three groups. One possible reason for the gender neutrality in our sample could be due to the exclusion of patients with a current major depressive episode, one disorder regularly found to be more commonly diagnosed among women (Angst, 1995). We also found no differences across our three groups based on race, which differs from previous reports that indicated that community-based Blacks have lower rates of most disorders than Whites, with the exception of phobia and somatization (Zhang & Snowden, 1999). Conversely, data do demonstrate that racial minorities have less access to mental health services and are less likely to receive needed care (USDHHS, 2001), which may help explain the higher proportion of Blacks in this study with current psychiatric disorders.

We found that easily administered symptom severity tools differentiated the three groups. Patients with a current mood or related disorder scored higher than the other two groups, and those with a positive psychiatric history scored significantly higher than patients with a negative psychiatric history for depressive, anxiety and traumatic stress symptoms. The ease of assessing patients for psychiatric symptoms with the HAM-A, HAM-D and IES and the fact that the scores differentiated the three groups is important and provide clinicians a simple, yet reliable method by which to screen patients in the ED setting. There are currently recommendations for practice to screen and intervene for injured patients for substance abuse (Anonymous, 2005). Additionally there are clear recommendations from the National Heart, Lung, and Blood Institute to screen for and treat depression in patients with cardiovascular disease (Davidson, et al. 2006) and there is an increasing recognition of the value of improving care for medically ill patients with psychiatric co-morbidity (Kinder, et al. 2006). However, to date, screening injured patients for the broader array of psychiatric disorders is not standard practice.

Given the proportion of patients with psychiatric disorders found in this study, further research is warranted. We know that disability occurs after serious injury (Maraste et al. 2003; Smith et al. 2005; Vles et al. 2005). We also know that psychiatric morbidity is accompanied by

disability (Murray & Lopez, 1997). The synergistic effects of psychiatric disorders that are co-morbid with physical injury on disability indicate the need to assess patients for past or current psychiatric disorders at the time of injury. Our data suggest that patients with co-morbid psychiatric disorders had lower levels of education and were more likely to be unemployed at the time of injury. These findings suggest that these patients may have fewer resources available to them and may be in need for more comprehensive assessment and intervention.

There are limitations that should be considered in interpreting the findings of this study. First, the sample consisted of injured individuals who sought care in an ED of an urban, tertiary care facility for injury, perhaps limiting the ability to generalize the results to other populations. Further, because this study is embedded in a longitudinal cohort study, patients with a history of Axis I psychotic disorders, a current major depressive episode, or a self-inflicted injury were excluded from the study sample, most likely resulting in an underestimation of the frequency of certain disorders, in particular, mood disorders. Finally, while our study uncovers the frequency of past and current psychiatric disorders in the injured population, we cannot shed light on the mechanism by which this link exists. These limitations need to be considered, but we believe that they are offset, partially, by the strength of our random selection process.

Despite the awakening of interest in assessing for and treating for co-morbid psychiatric disorders, rarely are injured patients screened in the ED or during the acute injury hospitalization, unless believed suicidal or dependent on alcohol/drugs. One might argue that there is inadequate time in the ED to screen patients, that these patients might not want referral or follow-up care, and that services are inadequately designed for an influx of patients. This may be the case, but the challenges are offset by the known worsened outcomes when psychiatric co-morbid disorders are not diagnosed or treated. Indeed, individuals interacting with the health care system for injury offer an opportunity for nurses and other health care providers to more holistically assess patients, using rapid screening as the first step in providing comprehensive care.

Summary

Forty-five percent of patients presenting with minor injury to an ED had either a history of a psychiatric disorder(s) or a current psychiatric disorder(s). Because mental disorders are frequently associated with a range of disabilities and functional limitations (Stone, Cox, Afifi, Belik, & Sareen, 2006; Wittchen, Nelson, & Lachner, 1998), this finding has clinical implications for the comprehensive care of injured patients. An unplanned contact with the health care system for a minor injury offers an opportunity for nurses to identify patients with psychiatric morbidity. It is important for providers who care for patients with minor injury to include a psychiatric history and/or rapid screening for psychiatric disorders as part of the health assessment. Nurses care for patients and not isolated injuries. Further, the goal of care is to help patients attain maximal functional recovery. Therefore, the presence of a positive psychiatric history or a current psychiatric disorder should stimulate a referral of these patients for appropriate emotional support and therapeutic follow-up. By doing so, providers will give patients important interventions to maximize full recovery.

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Table 1

Specific DSM-IV Psychiatric Disorders in Sample (n=123)

DSM-IV Disorders	Positive Psychiatric History (80 Subjects) n (%)	Current Diagnoses (43 Subjects) n (%)
Mood Disorders	19 (24)	20 (47)
Anxiety Disorders	5 (6)	8 (19)
Alcohol Disorders	11 (14)	7 (16)
Drug Disorders	12 (15)	3 (7)
Adjustment Disorders	18 (23)	3 (7)
Personality Disorders	6 (8)*	5 (12)*
Conduct Disorders	11 (14)	0 (0)
Other	4 (5)	1 (2)

Note: Psychiatric history and current diagnoses are categorized according to the Diagnostic and Statistical Manual Disorders, Fourth Edition DSMIV-TR.

16 (20%) of subjects with a positive psychiatric history had multiple diagnoses

22 (51%) of subjects with a current psychiatric disorder had multiple diagnoses

* Personality Disorders in addition to Axis I disorders

Table 2

Comparison of Demographic and Injury Variables Across Groups*

Variable	Negative Psychiatric History n=152	Positive Psychiatric History n=80	Current Psychiatric Diagnosis n=43
Age (yr)			
Mean (SD)	42.1 (18.1)	38.7 (15.1)	37.9 (14.2)
Gender, n (%)			
Male	83 (55)	44 (55)	15 (35)
Female	69 (45)	36 (45)	28 (65)
Marital Status, n (%)			
Single	79 (55)	41 (51)	26 (61)
Married	42 (25)	22 (28)	7 (16)
Divorced/separated	23 (15)	15 (19)	7 (16)
Widowed	8 (5)	2 (3)	3 (7)
Race, n (%)			
White	57 (38)	39 (49)	13 (30)
Black	89 (59)	38 (48)	30 (70)
Asian	5 (3)	3 (4)	0 (0)
Employment Status, n (%)*			
Employed	106 (70)	63 (79)	26 (61)
Unemployed	9 (6)	4 (5)	15 (35)
Retired/disabled	17 (12)	6 (8)	2 (5)
Houseworker/student	19 (13)	7 (9)	0 (0)
Education (yr)			
Mean (SD)	13.9 (2.6)	13.8 (2.6)	12.8 (2.6)
Income, n (%)			
Under $20,000	33 (22)	26 (33)	17 (40)
20,000–39,000	40 (26)	19 (24)	10 (23)
40,000–59,000	22 (15)	12 (15)	4 (9)
over 60,000	32 (21)	17 (21)	5 (12)
Don’t know/won’t disclose	25 (16)	6 (8)	7 (16)
ISS (2–8)			
Mean (SD)	4.07 (1.03)	4.09 (1.0)	4.19 (1.65)
Type of Injury, n (%)			
Auto/Ped/Bike	41 (27)	25 (31)	13 (30)
Slip or Fall	74 (49)	36 (45)	23 (54)

Variable	Negative Psychiatric History n=152	Positive Psychiatric History n=80	Current Psychiatric Diagnosis n=43
Sports	15 (10)	8 (10)	0 (0)
Assault	14 (9)	5 (6)	6 (14)
Other	8 (5)	6 (8)	2 (5)

Note: ISS = Injury Severity Score; Auto/Ped/Bike = Automobile, Pedestrian, & Bicycle

* $p<0.001$.

Table 3

Symptom Severity Scores across diagnostic groups

Variable	Negative Psychiatric History n=152 Mean (SD)	Positive Psychiatric History n=80 Mean (SD)	Current Psychiatric Diagnosis n=43 Mean (SD)
*HAM-D	5.36 (3.76)	7.23 (3.84)	12.09 (4.67)
*HAM-A	6.35 (4.96)	8.93 (5.41)	14.19 (7.07)
*IES Total Score	16.2 (13.2)	18.84 (15.8)	27.5 (17.1)

Note: Ham-D - Hamilton Depression Rating Scale; HAM-A - Hamilton Anxiety Rating Scale; IES -Impact of Events Scale

*p<.001 (Current diagnosis significantly higher than positive or negative history; Positive psychiatric history significantly higher than Negative psychiatric history)