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# Traumatic Life Events Prior to Alcohol-Related Admission of Injured Acute Care Inpatients: A Brief Report

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*Objective:* Approximately 30 million Americans present to acute care medical settings annually after incurring traumatic injuries. Posttraumatic stress disorder (PTSD) and depressive symptoms are endemic among injury survivors. Our article is a replication and extension of a previous report documenting a pattern of multiple traumatic life events across patients admitted to Level I trauma centers for an alcohol-related injury. *Method:* This study is a secondary analysis of a nationwide 20-site randomized trial of an alcohol brief intervention with 660 traumatically injured inpatients. Pre-injury trauma history was assessed using the National Comorbidity Survey trauma history screen at the six-month time point. *Results:* Most common traumatic events experienced by our population of alcohol-positive trauma survivors were having had someone close unexpectedly die, followed by having seen someone badly beaten or injured. Of particular note, there is high reported prevalence of rape/sexual assault, and childhood abuse and neglect among physically injured trauma survivors. Additional trauma histories are increasingly common among alcohol-positive patients admitted for a traumatic injury. *Conclusions:* Due to the high rate of experienced multiple traumatic events among acutely injured inpatients, the trauma history screen could be productively integrated into screening and brief intervention procedures developed for acute care settings.

Each year in the United States 30 million individuals present to acute care medical settings after incurring traumatic physical injury, and approximately 1.5 million to 2.5 million individuals are so severely injured that they require inpatient hospitalization admissions (McCaig, 1994; National Center for Injury

Prevention, 2012). A growing literature base has shown survivors of traumatic injury have a history of multiple recurrent traumatic life events, resulting in higher service costs (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Ramstad, Russo, & Zatzick, 2004; Sims et al., 1989). This is of great public health concern,

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given the association between recurrent traumatic life events and a variety of poor physical and mental health outcomes (Kessler et al., 1995; Kilpatrick et al., 2003). In this brief report, we replicate and extend findings of prior trauma exposure among traumatically injured inpatients in a national multisite study of patients with alcohol-related traumatic injury.

## METHOD

### Procedure

This investigation was a secondary analysis of a randomized clinical trial of alcohol screening and brief intervention services among patients admitted to 20 U.S. Level I trauma centers with alcohol intoxication at the time of injury admission (Zatzick, Donovan, et al., 2013; Zatzick et al., 2014). Patient recruitment for the trial began in May 2009 and ended in September 2011. After patients consented to the protocol and received their baseline assessment, providers from each of the 20 centers delivered a brief bedside motivational interview targeting alcohol use problems. The University of Washington institutional review board (IRB) approved all study procedures prior to the recruitment of patients. In the current report we examined the frequency of pre-injury traumatic events among these patients and compare rates to those previously identified among traumatically injured and civilian populations (Kessler, Davis, & Kendler, 1997; Kessler et al., 1995; Ramstad et al., 2004).

### Measures and Variables

A total of 2,501 patients were approached and 878 enrolled in the study, with 660 completing the six-month follow-up assessment and therefore the trauma history screen. Participants were approached after a systematic review of their electronic medical records was done, including screening of laboratory blood alcohol positive toxicology results, length of stay in the hospital and

intensive care units, and other clinical characteristics (Zatzick et al., 2014).

### Pre-injury Trauma History

Patients were assessed for traumatic life events prior to the index injury using a modified version of the trauma history screen developed for the National Comorbidity Surveys (NCS) (Kessler et al., 1995). The NCS and NCS-Revised trauma history screens are multi-item assessments that assess exposure to traumatic life events, including witnessing physical fights as a child, physical abuse or neglect as a child, being mugged/threatened with a weapon, being beaten by a spouse/partner/someone else, unexpected death, witnessing injury or death, rape trauma and sexual assault, life-threatening illness, exposure to toxic chemicals, exposure to a man-made or natural disaster, living or working in a war zone, being a refugee, having combat exposure, or experiencing any other traumatic life event (Brugha & Cragg, 1990; Ramstad et al., 2004). Specifically, participants report whether they experienced each event in their lifetime prior to the index injury admission. Because the trauma history screen was conducted at the six-month follow-up assessment 218 patients did not have trauma history data, limiting our sample to 660. Particular questions in the trauma history screen have more missing data than others (Table 2) due to the sensitive nature of the questions asked and the emphasis on the option to skip any questions in the section due to the sensitive nature of the questions.

## RESULTS: CHARACTERISTICS OF PARTICIPANTS

The characteristics of the 20 participating U.S. trauma centers from which patients were recruited have been previously described; the trauma center hospitals were predominantly urban U.S. teaching hospitals with on average more than 2,000 injury

admissions per year (Zatzick et al., 2014). Patients participating in the trial were from diverse ethnocultural heritages, and approximately 50% of patients had incurred traumatic brain injury (TBI) (see Table 1). The 660 patients included in this study did not significantly differ from the 218 patients without complete trauma history data with regard to age, ethnicity, injury severity scores, or depressive and alcohol symptoms. Those with complete trauma history data were more likely to be women (26.4% versus 15.7%,  $p < 0.001$ ).

Patients participating in the trial had experienced a broad spectrum of traumatic life events prior to the index injury admission (Table 2). The most common traumatic event witnessed by our population was “having had someone close, such as a family member or friend, unexpectedly die,”  $M = 392$  (59.4%), followed by “having seen someone badly beaten or injured,”  $M = 285$  (43.2%). Additional trauma histories included “witnessing physical fights at home as a child,”  $M = 199$  (30.2%) and “rape/sexual assault,”  $M = 118$  (17.9%). The average number of prior traumatic life events experienced by this population was 3.57 ( $SD = 2.76$ ) events.

TABLE 1. Characteristics of Patients

Patients	<i>n</i> (%)
Age, mean ( <i>SD</i> ), <i>y</i>	36.8 (14.4)
Female	174 (26.4)
Race/ethnicity	
White	419 (63.5)
Hispanic	117 (17.7)
Black	112 (17.0)
American Indian	92 (13.9)
Asian	8 (1.2)
Other	29 (4.4)
Injury severity category	
0–8	204 (30.9)
9–15	263 (39.8)
≥ 16	193 (29.2)
Traumatic brain injury	
Absent	320 (48.5)
Present	340 (51.5)

Note.  $N = 660$ .

## DISCUSSION

This brief communication corroborates and extends the initial findings by Ramstad and colleagues (2004), which examined rates of prior trauma among patients from two Level 1 trauma centers. When compared to the general population, traumatically injured hospitalized patients across 20 national U.S. Level I trauma centers report higher rates of prior traumatic life events. This report affirms the large scope of prior traumas experienced among patients seen for an alcohol-related traumatic injury, such as seeing someone badly beaten or injured, being involved in a car accident, and having been raped/sexually assaulted.

This investigation has limitations. There is an occurrence of missing data when administering the trauma history screen. The trauma history screen is a sensitive measure that does not allow for therapeutic intervention at the time of assessment; therefore, participants are told they can skip any questions they do not feel comfortable answering. Data may be missing due to the sensitivity of the questions. Another limitation is that these findings may not be generalizable beyond civilian traumatic injury populations or patients seen for alcohol-related injuries. Finally, the trauma history screen used in the current investigation is cursory and does not probe for more in-depth exploration of traumatic life experiences or provide an estimate of the total number of traumatic events a patient may have experienced in his or her lifetime. One advantage of this more cursory screening approach is that a measure such as the pre-injury trauma history screen may be more likely to be employed in real-world acute care medical emergency department and trauma center settings.

These findings, along with previous literature, indicate traumatically injured inpatients in the acute care medical setting carry substantial burden with them to the trauma center (Ramstad et al., 2004). The amount of trauma experienced prior to the index injury admission could cause the patient to feel a

TABLE 2. Frequency of Prior Traumas

Trauma Items	<i>n</i> (%)
Total trauma histories	
0 traumas	69 (10.5)
1 trauma	108 (16.4)
2 traumas	104 (15.8)
3 traumas	97 (14.7)
Pre-injury trauma history items	
Did anyone close to you die unexpectedly?	392 (59.4)
Did you ever see someone badly beaten or injured? <sup>a</sup>	285 (43.2)
Were you ever mugged, held up, or threatened with a weapon?	217 (32.9)
Were you ever involved in an auto accident or other life-threatening accident?	217 (32.9)
As a child did you witness physical fights at home? <sup>a</sup>	199 (30.2)
Were you ever badly beaten up by a spouse/partner someone else? <sup>a</sup>	160 (24.3)
Were you ever involved in a man-made or natural disaster?	121 (18.3)
Were you ever raped and, other than rape, were you ever sexually assaulted? <sup>a</sup>	118 (17.9)
Were you ever physically abused or seriously neglected as a child? <sup>a</sup>	113 (17.1)
Have you experienced any other traumatic event not listed? <sup>a</sup>	109 (16.5)
Did you have a traumatic event that you didn't report?	102 (15.5)
Were you ever exposed to a toxic chemical or substance? <sup>a</sup>	98 (14.8)
Did you ever have a life-threatening illness?	93 (14.1)
Did your child ever have a life-threatening illness or injury? <sup>a,b</sup>	70 (10.6)
Did you participate in combat?	53 (8.0)
Did you ever live or work in a warzone or as a refugee? <sup>a</sup>	11 (1.7)

Note. *N* = 660.

<sup>a</sup>The amount of missing data for nine items is between 0.1% and 2.3%.

<sup>b</sup>Participants without children = 257 (38.9%).

sense of lowered self-worth and decreased benevolence toward the world (Lilly, Howell, & Graham-Bermann, 2015), which increases the possibility for future traumas.

In summary, this investigation contributes to an evolving literature. In new criteria, the American College of Surgeons now recommends screening for posttraumatic stress disorder (PTSD), intervention, and referral as a best practice clinical guideline (American College of Surgeons Committee on Trauma, 2014). Thus, the College has demonstrated its willingness to provide clinical guidelines for PTSD screening and intervention (Zatzick, Jurkovich, et al., 2013). The findings of the current study could inform the incorporation of systematic trauma history assessment into trauma center-based pragmatic screening and intervention trials. Incorporation of routine trauma history screening at the time of injury could result in reduced risk of future injury among this

population (Gentilello et al., 1999; Zatzick, Jurkovich, Gentilello, Wisner, & Rivara, 2002), which would also allow for reductions in the subsequent development of PTSD.

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