Criminal Behavior and Repeat Violent Trauma

A Case–Control Study

John T. Nanney, PhD, Erich J. Conrad, MD, Michael McCloskey, PhD, Joseph I. Constans, PhD

Introduction: Repeat violent injury is common among young urban men and is increasingly a focus of trauma center–based injury prevention efforts. Though understanding risk factors for repeat violent injury may be critical in designing such interventions, this knowledge is limited. This study aims to determine which criminal behaviors, both before and after the initial trauma, predict repeat violent trauma. Gun, violent, and drug crimes are expected to increase risk of subsequent violent injury among victims of violence.

Methods: A case–control design examined trauma registry and publicly available criminal data for all male patients aged <40 years presenting for violent trauma between April 2006 and December 2011 (N=1,142) to the sole Level 1 trauma center in a city with high rates of violence. Logistic regression was used to determine criminal behaviors predictive of repeat violent injury. Data were obtained and analyzed between January 2013 and June 2014.

Results: Regarding crimes committed before the first injury, only drug crime (OR=5.32) predicted repeat violent trauma. With respect to crimes committed after the initial injury, illegal gun possession (OR=2.70) predicted repeat victimization. Initiating gun (OR=3.53) or drug crime (OR=5.12) was associated with increased risk.

Conclusions: Prior drug involvement may identify young male victims of violence as at high risk of repeat violent injury. Gun carrying and initiating drug involvement after the initial injury may increase risk of repeat injury and may be important targets for interventions aimed at preventing repeat violent trauma.

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Introduction

Violent trauma plagues young men in many urban, typically African American, communities.[1–4] Violence is the leading cause of death for African American men aged 18–35 years and remains a leading cause of death through age 40 years.[3,4] For victims of violence, repeat injury is common,[5–9] and trauma center–based interventions to reduce repeat violent trauma have recently emerged.[10–15] Such interventions have yielded only mixed results, possibly because most interventions focus on enrolling patients in general outpatient case management services rather than changing specific risk behaviors.[16] Interventions targeted at specific behaviors known to increase risk of later violence/violence injury may have greater chances of success.[17]

Certain criminal behaviors—specifically violent, gun, and drug offenses—may be strong candidate risk factors for repeat violent trauma.[2,5,7] Violent behavior invites violent retaliation. Assaults are more likely to involve more-severe gunshot injuries if assailants expect the target to be similarly armed.[18] Violence also permeates illicit drug economies, as disputes cannot be settled

From the Southeastern Louisiana Veterans Healthcare System (Nanney, Constans); Department of Psychiatry (Nanney, Conrad, Constans), Louisiana State University School of Medicine; South Central Veterans Affairs Mental Illness Research, Education, and Clinical Center (Nanney, Constans); Department of Psychology (Constans), Tulane University, New Orleans, Louisiana; Department of Psychological Sciences (Nanney), University of Missouri-Saint Louis, Saint Louis, Missouri; and the Department of Psychology (McCloskey), Temple University, Philadelphia, Pennsylvania

Address correspondence to: John T. Nanney, PhD, University of Missouri-Saint Louis, Department of Psychological Sciences, 1 University Boulevard, Stadler Hall Room 236, Saint Louis MO 63121. E-mail: nanneyj@umsl.edu.

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legally.[19] Other forms of crime, like unarmed, nonconfrontational property crime (e.g., auto theft) may be less likely to provoke retaliatory violence and may be less associated with repeat injury risk. Empirical studies focused on crime and trauma recidivism are generally consistent with this pattern, but methodologic limitations preclude definitive conclusions. One study[5] found that violent, gun, and drug crimes were more common among repeat victims of violence than among patients injured accidentally. This study, however, did not compare repeat to single episode victims of violence and it relied exclusively on survey methods to assess criminality. A second study[7] found that gun, drug, and violent crime, but not property crime or crime in general, were more common among repeat than single-episode trauma patients. Nonetheless, this study[7] combined violent and accidental trauma patients, so it is not clear if these findings hold for those who specifically experience violent trauma.

Extant literature also has not differentiated between crimes committed before and those committed after first injury. This issue is important for the development of trauma center–based interventions. Understanding which behaviors occurring prior to the first trauma are associated with rehospitalization is useful in identifying those initial trauma victims most at risk of future violent trauma. However, this information may be less relevant for intervention development because these historic risk factors may be static or unchangeable through intervention. By contrast, understanding the risk behaviors that occur after the initial hospitalization is critical for development of hospital-based interventions,[17] as these are the behaviors such interventions can influence most directly. For example, the experience of trauma may lead to new risk behaviors (e.g., regular gun carrying or drug involvement).[2,20,21] Whether such changes increase risk of repeat trauma, making them potential targets for intervention, has not been examined directly.

The present case–control study aims to identify differences in criminal behavior between repeat and single-episode victims of violence. To address limitations of previous studies, administrative hospital and criminal data are examined, and criminal behaviors occurring prior to the initial trauma are coded separately from those occurring after first injury. It is hypothesized that violent crime, gun possession, gun use, and drug crime, both prior to and following initial trauma, would predict repeat violent trauma, but that property crime, both before and after, would not. Finally, as a stronger demonstration that risk behaviors may be useful targets of intervention, it is examined whether those who do not engage in specific criminal behaviors prior to the first trauma but begin engaging in that crime afterwards have higher chances of repeat violent injury than those who continue to abstain. It is expected that initiating gun possession, gun use, and violent or drug crime following a violent trauma would increase risk of repeat violent injury, but that initiating property crime would not.

Methods

Study Population

The study was approved and a waiver of informed consent was granted by the IRB of the Louisiana State University Health Sciences Center, New Orleans. A study population consisting of all adult male patients aged ≤40 years from Orleans Parish who were admitted to the Spirit of Charity Level 1 Trauma Center (SOCTC) with a violent injury between April 2006 and December 2011 and who survived their initial injury was identified from the trauma center trauma registry (N=1,243). The SOCTC is the only Level 1 trauma center in New Orleans and thus treats all severe violent injuries (e.g., gunshot wounds) that occur in the metropolitan area. From Hurricane Katrina in August 2005 until the Trauma Center's reopening in April 2006, there is an 8-month gap in the trauma registry. For this reason, only data after April 2006 were examined.

Violent trauma was operationalized as hospital presentations with an ICD-9 e-code of 960–969, specifically indicating intentional violent injury. Cases of violent trauma recidivism were identified by linking trauma center presentations according to patient name, Social Security Number (SSN), and birth date. Patients who presented with a violent trauma between April 2006 and December 2011 and then presented with at least one additional violent trauma between April 2006 and December 2012 were classified as violent trauma repeaters (n=93). The control group consisted of patients who presented to the trauma center with a violent trauma between April 2006 and December 2011 but no additional violent traumas from April 2006 to December 2012 (n=1,150). All databases with patient identifiers were destroyed following the linking of hospital and criminal databases.

Data Sources

The trauma registry contains demographic, medical, and patient outcome data on patients for whom the hospital trauma activation protocol is initiated. Demographic data included date of injury; name; birth date; SSN; gender; race (self-report or if necessary as determined by medical staff); age; and ZIP code of residence. Cause of injury data included the ICD-9 e-code identifying the mechanism (e.g., gun or knife) and apparent intent (i.e., intentional versus accidental) of injuries. Criminal data were retrieved from the Orleans Parish Criminal District Court docket master. Patients were linked to criminal records by their name and date of birth. Dates and nature of all criminal convictions were recorded. Criminal behavior was classified according to five categories: gun possession, gun use, drug crime, violent crime, and property crime. Gun possession crimes were defined as convictions that only involved the illegal possession or use of a firearm, without any use or threat of use against another person. Gun use crimes required