



## Review

# The prevalence of alcohol-related trauma recidivism: A systematic review

James Nunn<sup>a</sup>, Mete Erdogan<sup>b</sup>, Robert S. Green<sup>b,c,\*</sup><sup>a</sup> Dalhousie University Medical School, Halifax, Nova Scotia, Canada<sup>b</sup> Trauma Nova Scotia, Halifax, Nova Scotia, Canada<sup>c</sup> Department of Critical Care, Dalhousie University, Halifax, Nova Scotia, Canada

## ARTICLE INFO

## Article history:

Accepted 9 January 2016

## Keywords:

Trauma  
Injury  
Alcohol  
Recidivism  
Systematic review

## ABSTRACT

**Objective:** Recurrent admission to a hospital or trauma centre for separate incidents of traumatic injury is known as trauma recidivism. Although use of alcohol is a known risk factor for injury and associated with trauma recidivism, the scale of alcohol-related trauma recidivism has not been well described. The purpose of this review was to search the published literature for studies that evaluated the prevalence of alcohol use among trauma recidivists. Our primary objective was to determine the proportion of trauma recidivism related to alcohol use. The association between alcohol and trauma recidivism was evaluated as a secondary objective.

**Methods:** Four electronic databases (MEDLINE, Embase, CINAHL, Web of Science) were searched from inception until December 2015 for all articles that might provide evidence on the proportion of trauma recidivism related to use of alcohol. After removal of duplicates, the search strategy yielded 2470 records for screening. Only primary studies that reported on repeated admissions to a hospital or trauma centre for traumatic injuries specifically related to alcohol use were included. Descriptive statistics were used to assess study characteristics and the prevalence of trauma recidivism related to alcohol use. An aggregate weighted estimate of alcohol-related trauma recidivism was calculated.

**Results:** A total of 12 studies met all inclusion criteria. Studies were published between 1989 and 2014. Overall, there were 3386 trauma recidivists among included studies. The proportion of trauma recidivists with evidence of alcohol use on admission ranged from 26.7% to 76.9% (median 46.4%). The aggregated sample produced a weighted estimate of 41.0% (1388/3386) for alcohol-related trauma recidivism. In four studies, the association between alcohol and trauma recidivism was examined; all four found a positive association between alcohol use and repeated admission for traumatic injury. Studies varied considerably in design, trauma populations, periods for evaluating recidivism, definitions for positive alcohol on admission, and methods used to determine alcohol use.

**Conclusion:** Evidence from current literature suggests that 41.0% of trauma recidivism is related to use of alcohol. Due to methodological limitations among the studies included for review, this may underestimate the actual prevalence of alcohol-related trauma recidivism.

© 2016 Elsevier Ltd. All rights reserved.

## Contents

Introduction . . . . .	552
Methods . . . . .	552
Search strategy . . . . .	552
Study selection . . . . .	552
Data extraction . . . . .	552
Quality assessment of included studies . . . . .	553
Statistical analysis . . . . .	553

\* Corresponding author at: Room 377, Bethune Building, 1276 South Park St., Halifax, NS, Canada B3H 2Y9. Tel.: +1 902 221 0415; fax: +1 902 473 5835.  
E-mail address: [greens@dal.ca](mailto:greens@dal.ca) (R.S. Green).

Results	553
Study characteristics	554
Risk of bias for included studies	554
Characteristics of trauma recidivists	554
Primary outcome: the proportion of trauma recidivism related to alcohol (12)	555
Secondary outcome: association between alcohol and trauma recidivism (4)	555
Discussion	556
Conclusion	557
Conflict of interest	557
Acknowledgements	557
References	557

## Introduction

Trauma recidivists are patients who present to a hospital or trauma centre on more than one occasion for different incidents of traumatic injury [1]. These patients are commonly younger and middle aged males of lower socioeconomic status who suffer from chronic illness or psychiatric disorders [2,3]. Prior studies have associated traumatic injury with risk-taking behaviours such as the use of weapons, fighting, criminal behaviour, and abuse of drugs or alcohol [4–6]. With advances in trauma patient care, many patients recover from their injuries; however, some patients continue risk taking behaviours, or seek out coping mechanisms such as use of alcohol or drugs in order to deal with the disability associated with their initial trauma [3,6]. Thus, a proportion of the trauma population may have or develop a predisposition to trauma.

Alcohol use is well known to increase the risk of experiencing a traumatic event and to be associated with poor health outcomes [7–9]. It was estimated that in 2004, 15.1% (95% CI 7.43%–22.73%) of injury deaths and 11.3% (95% CI 5.81%–16.96%) of disability-adjusted life years lost from injuries were attributable to alcohol use [10]. More recently, an analysis of 37 emergency departments (EDs) across 18 countries estimated that 16.4% of all injuries were attributable to alcohol [11]. In addition to increasing the risk of sustaining traumatic injury, alcohol use can also complicate the initial evaluation of the trauma patient and result in higher health care costs [7,8]. Although alcohol has been associated with trauma recidivism [1,2,4,12,13], the scale of this issue has not been well described.

The purpose of this study was to systematically review evidence from the published literature regarding the role of alcohol in trauma recidivism. Our primary objective was to determine the proportion of trauma recidivism related to alcohol. As a secondary objective, we evaluated the association between alcohol use and trauma recidivism.

## Methods

### Search strategy

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [14]. A review protocol is available upon request. Four electronic databases (MEDLINE, Embase, CINAHL, Web of Science) were searched from inception until December 2015 using a search strategy that was developed in collaboration with an experienced Health Sciences librarian, modified for each database. The search strategy included a combination of medical subject headings (MeSH), Emtree headings, or CINAHL headings, and variations of keywords such as: “emergency medicine,” “alcohol,” “intoxicated,” “wounds,” “injuries,” “trauma,” “recidivism,” and “recurrence”. Truncation and

proximity searches were also used in applicable databases. No limitations were placed on the initial literature search.

### Study selection

Studies chosen for analysis met the following inclusion criteria: (a) design – any peer-reviewed primary study of original data involving human participants; (b) population – trauma patients who were evaluated for one or more admissions to a hospital or trauma centre; and (c) exposure – patients with a positive blood alcohol concentration (BAC) or other evidence of alcohol use on admission. Studies were excluded if they did not report on trauma recidivism specifically related to alcohol, or if study patients were presenting for acute intoxication without traumatic injury. We also excluded studies that compared the effect of an intervention on trauma recidivism, or any study for which it was not possible to determine our primary outcome of the proportion of trauma recidivism related to use of alcohol. We defined cases of alcohol-related trauma recidivism to include any patient with more than one admission to a hospital or trauma centre for traumatic injury who was documented to have used alcohol prior to at least one of their admissions. For the purposes of this review, alcohol use refers to a determination of alcohol use on admission as defined by each study and could include any use of alcohol regardless of whether it meets the clinical definitions of alcohol abuse or dependence.

One investigator (JN) applied the selection criteria to the titles and abstracts of all articles identified by the search strategy and excluded any that were not relevant to our study objectives. The full text of potentially relevant articles was independently screened for inclusion by two investigators (JN, ME), and any disagreements were resolved through consensus. If consensus was not reached, a third reviewer (RG) was consulted to resolve the disagreement. To determine inter-observer reliability for agreement on articles to include in the review, a kappa statistic was calculated [15,16]. For articles that were only published as abstracts, the authors were contacted directly to determine if their study had been published or if they could share their data. Articles not in English were translated using Google Translate<sup>®</sup> (<http://translate.google.com>). The reference lists of studies included in the review were manually searched for any additional relevant studies.

### Data extraction

A standardised data extraction form was created using Microsoft<sup>®</sup> Excel 2007 (Redmond, Washington, USA). Two reviewers (JN, ME) independently extracted the following data elements from each included study: authorship, year of publication, study design, location, institution type, study duration, inclusion/exclusion criteria, data sources, definition of positive alcohol on admission, methods for determining/measuring intoxication or alcoholic behaviour, definition of trauma/injury, and the

Download English Version:

<https://daneshyari.com/en/article/3238680>

Download Persian Version:

<https://daneshyari.com/article/3238680>

[Daneshyari.com](https://daneshyari.com)