Osong Public Health Res Perspect 2015 6(1), 27–33
http://dx.doi.org/10.1016/j.phrp.2015.01.002
pISSN 2210-9099 eISSN 2233-6052

ORIGINAL ARTICLE

Comparative Study of the Impact of Intoxication on Injuries in China and Korea

Lydia Sarponmaa Asante [a,c], Maxine Newell [b,c], Mieun Yun [c,d], Sunmee Yun-Welch [c,d], Sungsoo Chun [a,b,c,d,*]

[a]*Department of Health-Bio Convergence Science, Sahmyook University, Seoul, Korea.*
[b]*Department of Health Management, Sahmyook University, Seoul, Korea.*
[c]*Korean Institute on Alcohol Problems, Sahmyook University, Seoul, Korea.*
[d]*Department of Public Health, Sahmyook University, Seoul, Korea.*

Received: November 16, 2014
Revised: December 15, 2014
Accepted: December 16, 2014

KEYWORDS:
alcohol intoxication,
injury,
intoxicated perpetrator,
Western Pacific

Abstract
Objectives: Alcohol misuse has been widely studied as a substantial contributor to injured patients' visits to emergency departments. The current research studied differences in alcohol-related injury variables in China and Korea.
Methods: Data were collected from a sample of 4,509 patients (2,862 males and 1,667 females) reporting at emergency departments in China and Korea using the World Health Organization collaborative study on alcohol and injuries protocol.
Results: More injuries were reported by men, young people aged 25–34 years, employed individuals, and persons who had at least a high-school education. The proportion of injury cases among intoxicated patients was 14% for Chinese and 20% for Koreans. The odds of intentional injuries to intoxicated patients increased significantly when the perpetrator had been drinking, especially for severely intoxicated victims in both countries. The odds of injuries for intoxicated persons in both countries were high during sports and leisure activities; odds ratio (OR) = 3.93, 95% confidence interval (CI) = 2.76–5.59 for Chinese and OR = 10.97, 95% CI = 6.06–19.85 for Koreans.
Conclusion: These findings are a contribution to research in the two Asian countries about the effect of intoxication on injuries especially when both victim and perpetrator are intoxicated.

1. Introduction

Alcohol misuse has been cited as a contributor to the worldwide burden of disease and injury [1]. The World Health Organization (WHO) reports that in 2012, alcohol misuse accounted for 5.1% of the global burden of disease and injury as measured in disability-adjusted life-years (DALYs) and 5.9% of global deaths. More than a quarter (30.7%) of all alcohol-attributable DALYs were as a result of intentional and

*Corresponding author.
E-mail: chss97@syu.ac.kr, chunsungsoo@yahoo.com (S. Chun).

unintentional injuries [2]. Although alcohol-related injuries might not all be causally linked to drinking, the rate of injury is an important measure of the burden of injury attributable to alcohol in a society [3,4]. The assumption is that as alcohol intoxication results in emotional changes and decreased responsiveness to social expectations, persons exposed to alcohol may place themselves in dangerous situations by becoming more aggressive and less averse to risk taking, leading to both unintentional and intentional injuries as either perpetrators or victims [4,5].

Studies from hospital emergency departments (EDs) have shown associations between alcohol and injuries (fatal and nonfatal) [6]. Reports showed that the aggregate percentage of intoxicated cases with a blood alcohol concentration (BAC) $\geq$ 0.10% was 31.5% among homicide deaths, 22.7% among suicide cases, and 31.0% among nontraffic unintentional deaths [7]. Although the risk of alcohol related injury has been found to be related to a person's usual drinking pattern [8], risk relationships of unintentional injuries vary by place and time, with confounding factors such as conditions of roads and vehicles, seatbelt usage, per-capita consumption, legal drinking age, and legal BAC [9–11]. Prior research intimates that violence-related events are likely to have been caused by persons who may have been intoxicated at the time of the injury event [12]; however; previous studies in EDs have only focused on self-reports of the victim's own drinking. Drinking by others has the propensity to affect a person through risk taking, clumsiness and inattentiveness resulting in accidents or intentional harm. A relatively new area of alcohol research reviews victims' reports of perceived alcohol intoxication by perpetrators of intentional injuries [13].

Distinct differences have been found between drinking patterns in China and South Korea. Although South Koreans consumed an average of 12.3 L of pure alcohol (2008–2010), Chinese consumed 6.7 L [2]. Reports also show that the prevalence of alcohol use disorders for males was 4.5% for Chinese and 7.8% for Koreans. These differences in drinking patterns have also been reflected in alcohol-related injuries in China and Korea [4,14,15]. The current study will examine the differences in sociodemographic characteristics of patients reporting in EDs in China and South Korea; explore associations between intentional injuries and selected variables; and compare odds of alcohol intoxication and injury variables in both countries.

2. Materials and methods

2.1. Sample

A cross-sectional study of injured patients visiting EDs in China and Korea was done using the WHO collaborative study on alcohol and injuries protocol. Data were collected from 2008 to 2009 from five EDs in China and four EDs in geographically diverse regions in South Korea. A total of 4,509 patients participated in this study. The total sample consisted of 2,520 Chinese and 1,989 Koreans. The study was approved by the Sahmyook University Institutional Review Board (IRB# SYU08-00001).

2.2. Sociodemographic characteristics

Sociodemographic characteristics assessed were gender (male vs. female), age in years (18–24, 25–34, 35–44, 45–54 and 55+), education level, which recorded completed years of formal education (elementary, high school, some college) and employment status (currently employed for more than 30 hours and otherwise).

2.3. Alcohol intoxication

Classification of the level of intoxication was based on the clinical assessment of the degree of alcohol intoxication by a trained ED nurse or doctor using the principles of International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10) Y91 coding. For purposes of these analyses, the original four ICD-10 Y91 codes categories of mild alcohol intoxication, moderate alcohol intoxication, severe alcohol intoxication, and very severe alcohol intoxication were recategorized into three where severe alcohol intoxication and very severe alcohol were combined into a single category. A no-alcohol intoxication category was created for patients who had not consumed any alcohol 6 hours prior to the injury. Alcohol-related, injury-related variables used for this analysis included reason for injury (unintentional and intentional injuries), cause of injury (traffic accident, blunt force, lesions, falls and other unintentional injuries that included burns, poisoning, sexual assault, choking), location at the time of injury (own home, other's home, street, pubs/bars) activity at time of injury (paid job, commuting, sports/leisure, doing nothing), intoxicated or sober perpetrator, and perpetrator known or unknown.

2.4. Statistical analysis

All analyses were conducted using SPSS version 18 (SPSS, Chicago., IL). Basic statistics were done on categorical data to examine differences between the characteristics of the patients recruited from the two countries using Pearson Chi-square (not shown). A p value less than 0.05 was accepted as statistically significant. Characteristics compared included demographics and the RAPS4 for alcohol dependence. Injury-related variables used for this analysis included type of injury, cause, perpetrator, location, and activity at time of injury. Regression models determined the odds ratio (OR) estimates for intentional injuries for sociodemographic variables, level of intoxication, and dependence.