



Short communication

## The Emergency Department as a prevention site: A demographic analysis of substance use among ED patients

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### ABSTRACT

**Objectives:** To identify rates of alcohol and drug use among patients presenting to an inner-city Emergency Department (ED) and to describe demographic and health characteristics of patients with high-risk use. **Methods:** A cross-sectional study of patients presenting to the ED for any complaint. Patients were administered a brief screening about past 12-months alcohol and drug use. Patients who answered “yes” to any question were approached for a longer survey, the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST). Based on ASSIST scores patients received a brief intervention, and, when appropriate, a referral for brief outpatient therapy or specialized substance abuse treatment. Patients whose score indicated high-risk or dependent use were also asked demographic and health questions.

**Results:** Over a 20-month period, 19,055 patients were pre-screened. 87.1% of patients were black, 57% were male, with average age 44.8 years. 27.6% of patients pre-screened positive for drug or alcohol use; among these patients 44.2% scored in the low-risk range on the ASSIST, 35.8% moderate risk, 10% high risk and 10% probable dependence. Among patients with high-risk or dependent use, 70% rated their current health as fair/poor, with a mean of 1.7 ED visits in the prior 30 days. 40.7% reported “extreme” stress due to their use. 34.6% reported that they had stable housing and 13.6% were fully employed.

**Conclusion:** Among all patients seen in the ED for any complaint, a significant proportion is engaged in alcohol and drug use that increases their risk of health and social consequences.

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### 1. Introduction

Alcohol and drug misuse and abuse pose a substantial risk to public health and create a profound burden on the emergency response system. Globally, alcohol use is believed to account for 4% of all-cause mortality and 4–5% of disability-adjusted life years lost (Rehm et al., 2009). In 1992–2000, there were an estimated 68 million Emergency Department visits associated with alcohol, at a rate of 28.7 visits per 1000 persons. During the same 9 years, alcohol-related visits increased by 18% (McDonald et al., 2004). This figure is higher than all visits for psychiatric complaints to U.S. Emergency Departments (EDs), estimated at 21 per 1000 persons (Hazlett et al., 2004), and is similar in magnitude to the number of visits to EDs for chest pain, 27.7 per 1000 (Burt, 1999).

A large portion of the morbidity and mortality associated with alcohol use is attributable to non-dependant users; with one study finding that binge drinkers are 14 times more likely to drive under

the influence of alcohol than non binge-drinkers (Naimi et al., 2003; Becker et al., 1995).

One approach to addressing health risks associated with drug and alcohol use among Emergency Department (ED) patients is the SBIRT (Screening and Brief Intervention and Referral to Treatment) program. Through the SBIRT approach, patients are universally given a brief, standardized screen regarding alcohol and substance use, with a positive initial screening prompting a more in-depth interview by trained members of the healthcare team. Patients whose full screening indicates at-risk alcohol and substance use receive a protocol-driven brief motivational interview, i.e., a counseling session focused on motivating the patient to take steps to implement health behavior change. Patients whose scores suggest dependence are referred for outpatient therapy or inpatient treatment, based on patient needs. Screening and brief intervention programs for at-risk alcohol use have been endorsed by the World Health Organization, the United States Preventative Services Task Force, and the Committee on Trauma of the American College of Surgeons (Vaca and Winn, 2007).

We found only one study assessing the rates of alcohol and drug use and dependence among patients presenting to the ED. In this single-site study, 24.3% of all patients met criteria for binge drinking, 3.5% for marijuana use/use disorder, 2.9% for cocaine use

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disorder, and 3.3% for poly-substance use (Blow et al., 2011). This study is compelling, and calls for further data from other ED sites across the country.

We sought to assess rates of alcohol and drug use and dependence among patients visiting an inner-city ED, and to describe the demographic and health characteristics of patients with high-risk and dependent alcohol and drug abuse.

## 2. Methods

### 2.1. Design

This study is a cross-sectional study. Patients were enrolled between January 2009 and August 2010. Patients who were younger than 18 years old were excluded from screening, as well as patients who were critically ill, incarcerated, or with altered mental status.

### 2.2. Setting

The study was conducted in the ED of a large, public hospital situated in the Southeastern US.

### 2.3. Patient recruitment

ED nurses were trained to conduct alcohol and drug use pre-screening as part of their initial screening of any patients presenting to the ED. The pre-screen was comprised of three questions: (1) “Do you smoke or use tobacco products?”; (2) “(women) in the last 12 months, have you had 4+ drinks in 1 day?” or (men) in the last 12 months, have you had 5+ drinks in 1 day?”; and (3) “in the last 12 months, have you used illicit drugs or used a prescription painkiller, stimulant, or sedative for a non-medical reason”. An affirmative response to any question was classified as a positive pre-screen.

### 2.4. Measures

Patients with positive pre-screens were administered the ASSIST survey (Alcohol, Smoking, and Substance Involvement Screening Test) by a trained Health Educator (HE); all HEs had a university degree and trained in screening and motivational interviewing. Ongoing supervision was provided. HEs were present in the ED daily, from 6:30 am to 12:30 am.

The Alcohol, Smoking, and Substance Use Screening Test (ASSIST), focused on past 30-day use and dependent behavior associated with alcohol, tobacco, and illicit drugs. Based on ASSIST screen results, patients were offered one of the following: feedback and educational materials, brief intervention (a short (under 20 min) motivational counseling session focusing on changing behavior associated with alcohol/drug use), referral for brief outpatient therapy (one to twelve outpatient sessions with a substance abuse counselor), or referral for specialized inpatient or long-term outpatient substance abuse treatment (Humeniuk and Ali, 2006). Among patients screening as high-risk, HEs also administered the GPRA (Government Performance and Results Act) Client Outcome Measures, assessing past 30-day income, education, employment, family and living conditions, mental health, general physical health, sexual behavior, social connectedness, and criminal behavior, as well as general demographic information.

### 2.5. Analysis

Data were analyzed using SAS 9.2 (Cary, NC). Student's *t*-tests were used to compare the demographic characteristics of persons with positive and negative prescreens for continuous variables, and Pearson's chi-squared tests were used for categorical variables.

Analysis of variance was used to compare the means of continuous variables across levels of risk, and the row mean score statistic was used to evaluate for differences in mean ASSIST scores across categorical variables.

The Institutional Review Board of the parent academic institution, as well as the primary hospital's Research Oversight Committee, approved the study prior to initiation of patient enrollment, and the study was preformed as part of an SBIRT project funded by a grant from the Substance Abuse and Mental Health Services Administration (SAMSHA).

## 3. Results

### 3.1. Rates of substance use among ED patients

Between January 2009 and August 2010, 19,055 patients were pre-screened. Among all patients pre-screened, 57% were male. Most were Black, non-Hispanic (87.1%), 8.0% were White, non-Hispanic, and 3.8% were Hispanic, with 1.1% of patients identified as ‘other’. The average age of the total sample was 44.8 years (SD = 15.03) and 6.2% reported veteran status.

Across all patients screened, 27.6% had a positive pre-screen ( $n=5253$ ), reporting that in the past 12 months, they had consumed 4–5 drinks in one setting and/or any illicit drugs or misused prescription drugs. Patients with a positive pre-screen were 88.3% Black, non-Hispanic, 8.6% White, non-Hispanic, 2.2% Hispanic, and 0.8% other (Table 1a).

Among patients who pre-screened positive for alcohol use, on the full ASSIST screening, 44.2% scored in the low risk range, 35.8% in the moderate risk range, 10.0% high risk, and 10.0% showed probable dependence (Table 1b). With respect to drug use, 18.7% (3556) of all patients screened reported drug use in the past year, with drug of choice reported as marijuana for 66% and cocaine for 32.4%. Among patients reporting drug use, 3.7% scored in the low risk range, 74.3% moderate risk, 10.6% high risk and 11.3% probable dependence.

### 3.2. Health and social circumstances of patients with high-risk use

Patients who pre-screened positive for either alcohol or drug use, and were then identified as high-risk ( $n=1476$ ) were asked further health, social, and demographic questions on the GPRA questionnaire in order to identify comorbid medical condition and associated risk factors for poor health. With respect to housing, 10.7% of high-risk patients reported living in a shelter, and 12.1% reported living on the “street”, whereas 34.6% reported owning/renting, and 36.1% stayed in someone else's home.

With respect to employment status, only 13.6% of high-risk alcohol/drug users were employed full-time, with 10.2% employed part-time. 26.1% were actively looking for work, 23.3% were disabled, 18.6% were not seeking employment, and 2.6% were retired (Fig. 1).

High-risk and dependent patients reported a mean of 1.7 visits to the ED in the prior 30 days (SD = 2.16), and 19.3% reported an inpatient hospital admission. When asked, “How would you rate your overall health right now?”, over 70% rated their health as “fair” or “poor”, with only 2.7% rating their health as “excellent”.

Patients reported a significant impact of drug and alcohol use on other aspects of their lives; 40.7% of patients reported that in the prior 30 days their substance use had caused them to feel “extreme” stress. Similarly, 35.7% reported that their substance use had caused them to reduce or give up important activities over the prior month, and 33.7% reported that they had experienced emotional problems resulting from their alcohol or drug use over the prior 30 days.

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