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## Failure of Intimate Partner Violence Screening Among Patients with Substance Use Disorders

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### Abstract

**Objectives**—This study examined the relationship between substance use disorder (SUD) and intimate partner violence screening (IPV) and management practices in the emergency department (ED).

**Methods**—This was a retrospective cohort study of adult ED patients presenting to an urban, tertiary care teaching hospital over a 4-month period. An automated electronic data abstraction process identified consecutive patients and retrieved visit characteristics, including results of three violence screening questions, demographic data, triage acuity, time of visit, and ICD-9 diagnosis codes. Data on management were collected using a standardized abstraction tool by two reviewers masked to the study question. Multivariate logistic regression was used to determine predictors of screening and management.

**Results**—In 10,071 visits, 6,563 violence screens were completed. IPV screening was documented in 33.5% of patients with alcohol-related diagnoses (95% CI = 27.7% to 39.3%,  $\chi^2 = 116.78$ ,  $p < 0.001$ ) and 53.3% of patients with drug-related diagnoses (95% CI = 44.3% to 62.3%,  $\chi^2 = 7.69$ ,  $p = 0.006$ ), compared to 66.1% of patients without these diagnoses (95% CI = 65.2% to 67.1%). In the multivariate analysis, alcohol (OR 0.30, 95% CI = 0.22 to 0.40) and drug use (OR 0.56, 95% CI = 0.38 to 0.83) were associated with decreased odds of screening. Of completed screens, 429 (6.5%) were positive, but violence was addressed further in only 55.7% of patients. Substance abuse did not appear to affect the odds of having positive screens addressed further by providers (OR 1.96, 95% CI = 0.39 to 10.14).

**Conclusions**—This study found an association between SUD and decreased odds of IPV screening. Failure to screen for IPV in the setting of substance use may represent a missed opportunity to address a critical health issue, and be a barrier to successful intervention.

### MeSH Keywords

Domestic violence; Substance-related disorders

## INTRODUCTION

Intimate partner violence (IPV) may lead to substance use disorders (SUD), increase substance use severity, prevent patients from seeking substance use treatments, and

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exacerbate psychiatric and medical illnesses in those with SUD.<sup>1-4</sup> Screening for IPV in patients with drug or alcohol problems may help providers recognize and address a major barrier to the success of substance abuse interventions and referrals.<sup>5,6</sup>

To the best of our knowledge, no prior studies have examined IPV screening among emergency department (ED) patients with SUD. Our primary objective was to investigate whether substance use is associated with failure to perform IPV screening in the ED. A secondary objective was to examine whether SUD is associated with failure to address violence further among patients who screen positive for IPV. Such information could help direct violence screening and treatment protocols to ensure inclusion, rather than systematic exclusion, of populations at risk for poor health outcomes.

## **METHODS**

### **Study Design**

This was a retrospective cohort chart study of visits by adult patients (18 years or older) who presented to the ED between June 2008 and October 2008. The research protocol, including waiver of informed consent, was approved by the study site's institutional review board.

### **Study Setting and Population**

The study was conducted at an urban academic tertiary care center with an emergency medicine residency training program and an annual volume of approximately 40,000 patients. An electronic medical record system, Epic Hyperspace (Epic Systems Corporation, Verona, WI), is used for all clinical documentation. While IPV screening is generally conducted in triage, it may be completed at any time. A single screening form is visible to nurses throughout the patient encounter, and is used for data entry regardless of when the screen is actually completed. The site has dedicated ED social workers 24 hours a day, 7 days a week. Social workers are contacted when IPV is identified, and facilitate patient referral to appropriate resources.

We calculated a sample size of 10,000 ED visits based on a goal of detecting a 20% difference in screening between patients with and without substance abuse diagnoses, using  $\alpha$  of 0.05 and 80% power. Using estimates for visits meeting exclusion criteria (Emergency Severity Index level 1 acuity, elopement, or "against medical advice" discharges), we sampled 10,564 charts. After applying exclusion criteria, the final sample included 10,071 visits.

### **Study Protocol**

Patient demographics and visit characteristics were obtained through automated abstraction of information from the electronic medical record. Chart review was performed by two trained research assistants (RAs) who were masked to the associations under investigation. A standardized data abstraction tool was developed for the study using Microsoft Access (Microsoft Inc., Redmond, WA) and piloted using 50 screen-positive medical charts. RAs were provided with a guide containing the chart review protocol and definitions of variables. Data collection was monitored by the primary investigator. The study team met periodically to review guidelines and discuss and resolve any problems that arose in the data collection process. To gauge interrater reliability, 10% of the charts were randomly selected for review by both RAs.

### **Measurements**

The primary outcome of interest was completed IPV screening. Our ED uses a three-question screen for IPV: "Do you have a restraining order against anyone?", "Have you been

physically assaulted in the last year?”, and “Have you had forced sexual activity in the last year?” If any of the three questions was answered “Yes,” this was considered a “positive” screen; if all were “No,” this was considered a “negative” screen. If all three answers were left blank, screening was considered missed.

The screening questions at our institution are broad and inclusive. A positive screen is not considered diagnostic, but leads to a screen prompt for the triage nurse to notify a provider – whether primary nurse, physician, nurse practitioner, or social worker – to clarify the nature of the violence and determine if intervention is needed. Thus, a secondary outcome of interest was whether positive screens were subsequently addressed by providers. This was determined by manual review of charts with positive screens. IPV was considered to have been addressed if there was any mention of IPV within the provider notes, including clarification of the nature of the positive screen, confirmation of ongoing IPV, services offered for partner abuse, or a discharge diagnosis of abuse.

Substance use was defined by International Classifications of Disease, 9<sup>th</sup> revision (ICD-9) diagnoses for dependent and non-dependent alcohol and illicit drug use, and acute psychiatric and medical illness related to alcohol or drug use (codes 291-291.99, 303-303.99, 305.0-305.03, 535.3-535.31, 571.1, 790.3, 292.0-292.9, 304-304.93, 305.2-305.93).

## Data Analysis

We used a priori hypotheses to identify the demographic and clinical factors likely to influence screening. Key variables were entered into a multivariate logistic regression model to determine independent predictors of completed screening. To assess interrater reliability, we calculated a  $\kappa$ -statistic for data collected by both RAs.

Statistical significance was defined as a probability of a type I error of less than 5% (two-tailed). Results are presented as odds ratios (ORs; screened vs. not screened) with 95% confidence intervals (CIs). All analyses were performed by using Stata 10.0 (Stata Corp, College Station, TX).

## RESULTS

Data from 10,071 ED visits were reviewed. Substance use was identified in 369 patients (3.7%): 257 (2.6%) were alcohol-related and 122 (1.2%) were drug-related. Overall, 65.2% of ED patients received screening for IPV, of whom 6.5% screened positive for IPV. Answers to all three questions were documented in 98.2% of the completed screens. Frequency and proportions of completed screening, based on patient characteristics, are shown in Table 1 (column A). IPV screening was documented in 33.5% of patients with alcohol-related diagnoses (95% CI = 27.7% to 39.3%,  $\chi^2 = 116.78$ ,  $p < 0.001$ ) and 53.3% of patients with drug-related diagnoses (95% CI = 44.3% to 62.3%,  $\chi^2 = 7.69$ ,  $p = 0.006$ ), versus 66.1% of patients without these diagnoses (95% CI = 65.2% to 67.1%). Table 1 (column B) shows the results of the multivariate analysis for the study’s primary outcome. Patients with substance-related diagnoses had decreased odds of being screened for IPV (alcohol diagnoses, OR 0.30, 95% CI = 0.22 to 0.40; drug diagnoses, OR 0.56, 95% CI = 0.38 to 0.83).

There were positive violence screens in 429 visits. These charts were reviewed manually to determine if the positive screens resulted in *any* documentation by providers suggesting that they had addressed the screen. Violence was addressed further in 55.7% of patients with positive screens. The RAs had 88% agreement ( $\kappa = 0.75$ ) in determining whether violence had been addressed. Results of the multivariate analysis for this outcome are shown in Table

1 (column C). Among those who screened positive, SUD did not appear to affect the odds of having IPV addressed by ED providers, although of note, only eight (2%) had substance use diagnoses.

## DISCUSSION

We describe an association between substance use and failure to perform screening for IPV. The odds of having the screen addressed by a provider did not differ between those with and without substance use diagnoses, although this finding may be an artifact of the small number of patients with substance use and a positive screen.

Many major medical societies, including the American College of Emergency Physicians, support routine inquiry about IPV in all patients. Yet in 2004, the United States Preventive Services Task Force stated that it could not advocate for routine screening for IPV, given insufficient data supporting any benefit of this practice.<sup>7</sup> A recent Canadian study conducted in a variety of healthcare settings again failed to demonstrate a benefit to screening the general population for IPV.<sup>8</sup>

Could systematic neglect of IPV screening in patients most likely to test positive explain, in part, this apparent lack of benefit? While characteristics associated with IPV are myriad, case finding for certain groups of patients has intuitive appeal. The high morbidity and hospital costs associated with SUD have led to great efforts to develop effective means of intervening in substance abuse in the acute care setting.<sup>9</sup> Consideration of significant and common barriers to care – such as IPV – may be one way to optimize the success of such interventions, and improve the health and safety of these patients.

Our study highlights another potential reason screening has not been shown to benefit patients: screening does not guarantee appropriate management. Of patients with positive violence screens, only 55.7% had evidence that the screen led to any action by ED providers. Although this proportion is higher than that in the Canadian trial of IPV screening,<sup>8</sup> it is still unacceptably low.

## LIMITATIONS

This preliminary study was conducted at a single, relatively low-volume ED with full-time social work services. A larger, multicenter study is needed to affirm the generalizability of these findings. Further, our determination of screening relies on clinician documentation. It is possible nurses screened patients but failed to document these actions, although there is no reason failure to document should have occurred differentially between patients with and without substance use.

Claims-based diagnosis is less accurate for SUD than the structured measurement tools used in other study types and likely underestimates substance use.<sup>10</sup> Our findings may reflect screening practices in a subset of patients with more severe and overt drug and alcohol use. Regardless, our study identifies a high-risk population in need of improved violence screening.

## CONCLUSIONS

We found an association between substance use and failure to complete screening for intimate partner violence in the ED. This finding is concerning, and suggests a missed opportunity to identify and address an important barrier to successful treatment of substance abuse problems. Further investigation is needed to explore this potential systematic bias, and consider ways to improve how violence is addressed among our most vulnerable patients.

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**Table 1**

## Patient Characteristics and Violence Screening.

	Total (N)	A) Screened N (%)	B) OR, Screened (95% CI)	C) OR, Addressed (95% CI)
Total, No.	10,071	6,563 (65.2)		
Age, years mean ( $\pm$ SD)	42.7 ( $\pm$ 17.0)	40.9 ( $\pm$ 15.7)	0.94 (0.92–0.95) <sup>†</sup>	1.01 (0.99–1.03) <sup>†</sup>
Sex, No.				
Female	5,098	3,562 (69.9)	Reference	Reference
Male	4,970	3,001 (60.4)	1.37 (1.25–1.50)	0.97 (0.64–1.47)
Race/Ethnicity				
White	7,882	5,260 (66.7)	Reference	Reference
Black or African American	666	445 (66.8)	0.87 (0.73–1.05)	0.57 (0.26–1.23)
Hispanic	745	427 (57.3)	0.99 (0.81–1.23)	1.01 (0.44–2.36)
Other	413	238 (42.4)	0.84 (0.67–1.05)	1.62 (0.56–4.69)
Primary language				
English	9,435	6,283 (66.6)	Reference	Reference
Non-English	636	280 (44.0)	0.33 (0.26–0.41)	0.78 (0.31–1.97)
Insurance status				
Commercial or other insured	3,681	2,405 (65.3)	Reference	Reference
Medicare	1,856	1,077 (58.0)	0.96 (0.83–1.11)	0.97 (0.52–1.85)
Medicaid	1,622	1,117 (68.9)	1.04 (0.90–1.20)	<b>1.89 (1.02–3.50)</b>
Uninsured or unknown	2,912	1,964 (67.5)	1.08 (0.97–1.23)	1.69 (0.99–2.91)
Triage acuity <sup>*</sup>				
2	1,704	645 (37.9)	Reference	Reference
3	6,106	4,273 (70.0)	3.58 (3.19–4.03)	0.95 (0.54–1.68)
4 or 5	1,990	1,624 (81.6)	6.14 (5.24–7.20)	1.36 (0.69–2.67)
Presenting shift				
Day (7:00a–2:59p)	4,161	2,873 (69.1)	Reference	Reference
Evening (3:00p–10:59p)	4,372	2,728 (62.4)	0.82 (0.74–0.91)	1.51 (0.96–2.37)
Night (11:00p–6:59a)	1,538	962 (62.6)	0.93 (0.81–1.07)	0.84 (0.45–1.57)
Mental health diagnoses <sup>^</sup>	443	263 (59.4)	0.91 (0.73–1.13)	0.91 (0.33–2.45)
Substance use diagnoses <sup>^</sup>				1.96 (0.39–
Alcohol	257	86 (33.5)	0.30 (0.22–0.40)	10.14) <sup>††</sup>
Drug	122	65 (53.3)	0.56 (0.38–0.83)	

A) Proportion screened for violence; B) Odds ratios for completed violence screening; C) Odds ratios for having positive screens addressed further

<sup>\*</sup> Patients categorized as level 1 with the Emergency Severity Index were excluded

<sup>^</sup> Mental health and substance use were dichotomous variables representing “present” or “absent.” The reference value for specific diagnosis variables was 0, or “absent.”

<sup>†</sup> Reflects OR for every 5-year increase in age

<sup>††</sup> Alcohol and drug use diagnoses were combined in this analysis, given the small numbers of either diagnosis among patients screening positive for violence.