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Intimate partner violence perpetration among men and emergency department use

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Abstract

Background—Intimate partner violence (IPV) perpetration and emergency department (ED) use share common risk factors, such as risk-taking behaviors, but little is known about the relationship between IPV perpetration and ED use or the effect of risk-taking on this relationship.

Study Objectives—This study examined the relationship between IPV perpetration, risk-taking, and ED utilization among men in the general U.S. population.

Methods—This cross-sectional study utilized data from the 2002 National Survey on Drug Use and Health, focusing on non-Hispanic white, non-Hispanic black, and Hispanic male respondents 18 to 49 years of age cohabiting with a spouse or partner. Logistic regression was used to calculate adjusted odds ratios (AOR) and 95% confidence intervals (CI).

Results—Approximately 38% of IPV perpetrators reported ED use in the previous year compared to 24% of nonperpetrators. Several risk-taking factors (e.g. perception of risk-taking, transportation-related risk-taking, aggression-related arrest), alcohol and illicit drug use and abuse or dependence, and serious mental illness were positively associated with IPV perpetration. Men reporting IPV were 1.5 times (AOR 1.47, CI 1.01–2.13) more likely than nonperpetrators to utilize the ED, after taking all factors into account. Drug abuse or dependence, transportation-related risk behaviors, and serious mental illness also were independently associated with ED use.

Conclusions—The results indicate that men who perpetrate IPV are more likely than nonperpetrators to use ED services. These findings suggest that screening for IPV, as well as risk-taking and mental illness, among men accessing ED services may increase opportunities for intervention and referral.

Keywords

partner abuse; risk-taking; emergency services; substance abuse; intimate partner violence

INTRODUCTION

The considerable impact of intimate partner violence (IPV) on healthcare systems, as well as on the health of victims, has gained international attention in recent years (1). In the United

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States, emergency departments (EDs) are a substantial source of care for IPV victims (2). With ED visits increasing overall and the number of hospital EDs decreasing over the past decade, a greater burden has been placed on existing facilities (3). This trend has led to increased scrutiny of ED use and factors associated with its use, especially partner violence. The majority of health services research in this area, however, has focused on IPV victimization among women (2,4,5). Studies of health care use by male perpetrators has been limited to a few mainly descriptive clinical studies, which suggest that a substantial proportion of male perpetrators may utilize health services, particularly EDs (6,7). While both men and women can be victims or perpetrators of IPV, physical violence committed against women by male intimates and the health consequences women experience may be more chronic and severe than that experienced by men (8). Nevertheless, addressing health problems and health service utilization relevant to male perpetrators is important from both a public health and a clinical perspective.

Several risk factors have been implicated in IPV perpetration that may lead to increased utilization of ED services in particular. Most notable are acute and chronic alcohol use and related problems, acute illicit drug use and drug-related diagnoses, and mental health problems, including mood and anxiety disorders, hostility, borderline personality, antisocial personality disorder, and impulsive behaviors including impulsive violence (9–13). Certain batterer typologies (e.g. dysphoric/borderline and generally violent/antisocial batterers) have been identified, which suggests some men who perpetrate IPV are also likely to commit nonfamilial violence, potentially leading to increased ED utilization for injury and mental health problems (14). IPV perpetrators may also utilize the ED for treatment of self-inflicted injuries related to IPV perpetration as well as general medical needs (6,7,14,15). While impulsivity has been associated with IPV perpetration, specific types of nonviolent risk-taking behavior among perpetrators, aside from sexual and alcohol-related risk-taking, have yet to be explored – especially with regard to ED use (13,16).

Furthermore, few studies have directly addressed the relationship between IPV perpetration and ED use, and those that have were based on clinical samples. These studies may be affected by detection bias by differentially including those individuals who can and do access services. Clinical studies are also more likely to capture a portion of the population with more severe partner violence and sequelae than that of the general population. The current study addresses these gaps in the literature by utilizing a population-based survey, which allows for a broader generalization of findings to the U.S. population. Other behaviors that may lead to ED use, such as substance misuse, mental illness, risk-taking and aggressive behaviors, are taken into account to establish a more explicit relationship between IPV and ED utilization (17–19).

The aims of this study are to examine 1) risk-taking behaviors associated with IPV perpetration; 2) the relationship between IPV perpetration and ED utilization; and 3) the effect of other risk factors for ED use on the relationship between IPV perpetration and ED use among men in the general population. The implications of these findings, including secondary prevention efforts, are also discussed.

MATERIALS AND METHODS

Study Design and Setting

The sample was drawn from the 2002 National Survey on Drug Use and Health (NSDUH) public use file (20). The NSDUH is a cross-sectional survey conducted each year by the Office of Applied Studies of the U.S. Department of Health and Human Services Substance Abuse and Mental Health Services Administration. The survey methodology has been reported elsewhere (21). Briefly, data are obtained from a representative sample of the

noninstitutionalized civilian population of the U.S. through face-to-face interviews at their place of residence employing computer-assisted administration of the questionnaire. The study yielded a weighted screening response rate of 91 percent and a weighted interview response rate for the Computer Assisted Interview of 79 percent. Missing data were imputed and recoded for core variables (substance use) but imputation for missing data generally was not conducted prior to the recoding of noncore variables. Imputed or recoded variables are utilized where provided to produce estimates. This study was approved by the Committee for Protection of Human Subjects at the University of Texas School of Public Health at Houston.

Participants

Non-Hispanic black, non-Hispanic white, and Hispanic (of any race) married or cohabiting male respondents aged 18 to 49 years of age were included in the current analysis. The study sample was restricted to these racial/ethnic groups given the small numbers of individuals who identified otherwise, and to married or cohabiting individuals due to the study design (see Measures below.) The age range is restricted given the substantial decline in IPV victimization in older age groups (22). The total sample size for this analysis is 6,273.

Measures

The outcome measure for this study was any past year ED utilization. Respondents were asked how many times they were treated in an “emergency room” in the previous 12 months for any reason. The responses were dichotomized (yes or no) given the skewed data, with 75% of men having no visits, 14% having one visit, and 11% having two or more visits.

The exposure measure was defined as IPV perpetration in the previous 12 months. Only subjects who were married or cohabiting with a partner (gender not determined) at the time of the survey were asked a single question regarding perpetration, “How many times during the past 12 months did you hit or threaten to hit your spouse or partner?” Possible responses included 0 times, 1 or 2 times, a few times, or many times; gender of the partner was not identified in the survey. The measure was dichotomized (yes or no) since 96% of men reported no perpetration and the majority (71%) of those reporting perpetration stated that it occurred 1 or 2 times.

Alcohol measures included 1) five or more drinks per occasion in the past 30 days (“binge drinking”); 2) five or more drinks per occasion on each of five or more days in the past 30 days (“heavy drinking”); and 3) alcohol abuse or dependence. Alcohol abuse and dependence were identified using questions based on and defined by the criteria listed in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (23). Other drug measures included 1) illicit drug use in the previous 12 months, including prescription drug use (defined as any use of pain relievers, tranquilizers, stimulants, or sedatives not prescribed for the subject or taken “only for the experience or feeling it caused”) and 2) illicit drug abuse or dependence based on the DSM-IV (23).

Other past year risk-taking behaviors included 1) perception of risk-taking (“Like to test self doing risky things” or “Get a real kick out of doing dangerous things”); 2) seat belt use (when riding in front passenger seat of car or when driving); 3) driving under the influence of alcohol or illicit drugs (yes or no); 4) other transportation-related risk-taking (driven a car more than 100 miles per hour or passed a vehicle when it was not safe or crossed railroad tracks and was almost hit by a train); 5) arrested and booked for aggression-related acts (i.e. assault, rape or other sex offenses, murder/homicide, intimidation, disorderly conduct); and 6) other risk-taking behavior (rode with a drunk driver or walked alone after dark through a

dangerous neighborhood or rode a bicycle without a helmet or went swimming/played outdoor sports during a lightning storm).

Perception of risk-taking was assessed by asking respondents how often they did these things (always, sometimes, seldom, never); always or sometimes were categorized as high and seldom or never were categorized as low risk-taking. Passenger and driver seat belt use were assessed separately by asking respondents if they always, sometimes, seldom, or never used a seat belt; those who did not always use a seat belt as passenger or driver were categorized as at risk and those who always did were designated as the reference group. Subcategories within “other transportation-related risk-taking” and “arrested/booked for aggression-related acts” were each assessed separately with yes or no answers; these responses were then combined. “Other risk-taking behavior” was assessed with a single question asking respondents how many of these things they did during the past 12 months (none, one, two, three, or all four); responses were dichotomized as none, or one or more.

Serious mental illness (SMI), as defined in the NSDUH, was based on data collected from a series of six questions (K6 scale) asking respondents how frequently they experienced symptoms of psychological distress during the one month in the past year when they were at their worst emotionally (21). The symptoms of distress are: felt nervous, hopeless, restless or fidgety, so sad or depressed that nothing could cheer you up, everything was an effort, and no good or worthless. The items were coded from 0 to 4 (“none of the time” to “all of the time”); “don’t know,” “refused,” bad or missing data, and legitimate skips were also coded as 0. The scores were summed (0 to 24) and respondents with a total score of 13 or greater were classified as having a past year SMI. The K6 had a sensitivity (SE) of 0.36 (0.08), specificity of 0.96 (0.02), and total classification accuracy of 0.92 (0.02) in predicting SMI in the developmental study with the cut point of 13, which was chosen to equalize false positives and false negatives (24).

Sociodemographic factors included self-identified race and Hispanic ethnicity (non-Hispanic white, non-Hispanic black, and Hispanic of any race); age group; marital status; education level; employment status in past week; household income; and current health insurance type.

Data Analysis

Chi-square tests were used in bivariate analyses to compare sociodemographic and risk-taking factors associated with IPV; p values of <0.05 were considered significant. Logistic regression analysis was performed to examine the relationship between the outcome variable, any ED use (0=no, 1=yes), and the exposure variable, IPV perpetration; adjusted odds ratios (AOR) with 95% confidence intervals (CI) were computed.

To determine if risk-taking behaviors confounded the relationship between the outcome and the exposure and to assess their independent relationship with the outcome, the relationship between IPV and ED utilization was examined using a forward stepwise multivariate analysis. All sociodemographic factors were entered as a block; potential confounding factors were then added one at a time as follows: alcohol abuse/dependence, alcohol use patterns, illicit drug abuse/dependence, illicit drug use, transportation-related risk-taking, perception of risk-taking, arrests for aggressive behavior, and other risk-taking behaviors, and SMI; transportation-related risk-taking behaviors were combined for the multivariate analysis to conserve power. A factor was retained if it altered the odds ratio of the outcome and the exposure by $\geq 10\%$ or the factor itself was independently associated with ED utilization (individual Wald test $p \leq 0.10$) (25).

All analyses were conducted with the Software for Survey Data Analysis (SUDAAN; Research Triangle Institute, Research Triangle Park, N.C., Version 9.0.1, 2005). SUDAAN

takes into account the complex multistage sampling design to more accurately estimate the standard errors. The data were weighted to correct for the probability of selection into the sample, nonresponse, and to adjust the sample to known population distributions; percentages are reported as weighted and numbers are unweighted. The original records were randomly subsampled for the public use file to ensure confidentiality, and the remaining sample was adjusted to the known totals from the full file to increase precision.

RESULTS

Characteristics of Study Subjects

Overall, 4% (weighted) of the sample reported perpetrating IPV at least once in the past year, representing nearly 1.5 million cohabiting or married male perpetrators in the U.S. Black and Hispanic men were disproportionately represented among perpetrators (Table 1). Younger age, not currently married to cohabiting partner, lower income, unemployed status, and having no or government subsidized health insurance were significantly associated with IPV. The prevalence of serious mental illness was three times greater among perpetrators compared to nonperpetrators. More than one-third of perpetrators used the ED in the past year compared to approximately one-fourth of nonperpetrators.

Table 2 illustrates the increase in substance use, including binge and heavy drinking, illicit drug use, and alcohol and drug abuse and dependence, associated with IPV. Transportation-related and other (nonaggressive) risk-taking behaviors were the most prevalent among both perpetrators and nonperpetrators, although all risk-taking factors were significantly associated with IPV.

ED use and IPV Perpetration

The unadjusted odds of any ED use in the past year were 1.9 times (crude OR 1.91, CI 1.34 to 2.72) greater among perpetrators compared to nonperpetrators. In the multivariate analysis, perpetrators were 1.5 times (AOR 1.47, CI 1.01 to 2.13) more likely than nonperpetrators to use ED services in the previous 12 months, after controlling for all other factors (Table 3). Drug abuse or dependence, transportation-related risk-taking, and serious mental illness were independently and positively associated with ED use.

DISCUSSION

To our knowledge, this is the first published population-based study to examine the association between IPV perpetration and the utilization of ED services. The key finding in this study—that men who perpetrate IPV are more likely to use ED services than men who are nonperpetrators—is especially noteworthy. Further, this relationship persisted after accounting for other risk-taking behavior, substance use, and serious mental illness, factors known to be strongly associated with ED use. ED studies indicate that individuals who perpetrate violence may be more likely to incur injuries, as well as other medical conditions associated with alcohol and other drug use, that require ED services. Of particular note is the study by Lipsky et al. that revealed an elevated (although statistically nonsignificant) risk of IPV perpetration (AOR 1.70; CI 0.73 to 3.95) among ED users with violence-related injury; alcohol problems and male gender were also independent predictors of violence-related injury (26). Cherpitel and colleagues, in a meta-analysis of multinational ED studies, also found that attributable risks for violence-related injury associated with drinking before the event and binge drinking were higher for men than for women (27). Further, injury or trauma related ED recidivism has been associated with substance abuse and criminal history, including violence-related crimes (17). In related research, Field and O’Keefe found driving-related and violence-related risk behaviors to be associated with traumatic injury when

comparing trauma patients to general surgery patients in an urban hospital (18). Similarly, risk-taking or impulsivity and sensation seeking were found to be associated with self-reported treated injury in the 1995 National Alcohol Survey (19).

In the current study, perception of risk-taking and nontransportation-related risk-taking behaviors, including aggression-related arrests, were not independently associated with ED use after taking into account transportation-related risk-taking. These findings, based on population-based data, likely differ from clinical studies since individuals in the general population are less likely to be risk-takers than those seen in clinical settings. While risk-taking increases the potential for injury, the current study did not assess the reason for ED use. Nevertheless, the odds of ED utilization were 50% greater for those taking transportation-related risks independent of IPV perpetration.

This study suggests that screening for IPV perpetration in ED settings is a potential means of identifying male perpetrators. Screening for IPV victimization is recommended by many professional organizations but few, if any, policies or programs have been instituted to address screening for IPV perpetration in the ED (30,31). Screening in a busy setting such as the ED can be problematic for providers but innovative methods, such as computer-assisted screening, and other strategies (e.g. chart prompts) that have been implemented for routine medical problems as well as IPV victimization may be helpful in facilitating screening for perpetration (5,15,32). For example, Rhodes et al. incorporated IPV screening into a self-administered computer-based intervention for screening and health promotion in an ED (33). The authors found that male and female ED patients were not only willing to report IPV victimization using computer-assisted screening, but also to self-report a history or concern of hurting someone close to them. Future research on partner violence should address the effectiveness of different screening methodologies for IPV perpetration and how that might be incorporated into existing routine screening and intervention programs. Although screening can and should take place in multiple healthcare settings, the ED is the primary source of care for a substantial portion of the population who share a similar sociodemographic profile with self-identified perpetrators in the current study (34,35). The ED may also detect a higher prevalence of IPV compared to non-emergent outpatient settings (36). The value of screening patients for IPV as well as substance use, with the goal of providing intervention and referrals, has been suggested by recent studies demonstrating a significant reduction in partner violence among couples as well as a significant reduction in substance use among the abusers when IPV was addressed in the context of alcohol treatment (37). The mixed findings from batterer treatment programs, however, suggest that more research is needed to determine how best to engage and successfully treat perpetrators of partner violence once they are identified (38–40). Further, there is a need to evaluate the effectiveness and safety of screening and interventions for perpetrators who are willing to disclose IPV to physicians and other health care providers (41). If ED personnel screen for IPV perpetration, appropriate and available resources for referral and intervention must be in place. In addition to prevention and intervention programs that may be associated with the hospital or ED, networking with public health and community resources would supplement existing services.

LIMITATIONS

The main strength of this study is the use of population-based data that are generalizable to the U.S. population. A few limitations must be noted, however. First, the ascertainment of IPV perpetration was limited by a single question, which does not allow for a full portrayal of partner violence. This may explain, in part, the low prevalence in this survey, although the prevalence of IPV perpetration has varied widely in other surveys (28). Furthermore, IPV was only assessed among married or cohabiting respondents, which may constrain the

generalizability of the study findings to their counterparts in the U.S. population. This potentially biased the estimate of IPV downward since separation may increase the risk and severity of IPV (29). An analysis of the National Violence Against Women Survey, however, revealed similarly low rates of IPV victimization among cohabiting and married compared to all women respondents (8). Overall, the effect of these potential biases may be to weaken the association between IPV and ED use found in this study.

Secondly, the reason for ED use was not assessed in the NSDUH. Given the strong bivariate relationships between IPV and risk-taking, and the increased odds of using the ED, after taking these as well as substance use and serious mental illness into account, it is possible that perpetrators were accessing health services for violence-related problems unexplained by these other factors. Finally, causality cannot be established due to the cross-sectional study design.

CONCLUSIONS

The results of this study indicate that men who perpetrate IPV are more likely to have used ED services in the previous 12 months. Drug abuse and dependence, transportation-related risk-taking, and serious mental illness were independently associated with ED use. Screening for IPV, as well as risk-taking behavior and mental illness, among men accessing ED services may increase opportunities for intervention and referral.

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Table 1

Characteristics of study sample by intimate partner violence status

Characteristic	IPV Perpetrators (n=323) % (S.E.) ^b	Non- Perpetrators (n= 5950) % (S.E.) ^b	P Value ^a
Race/Ethnicity			
Non-Hispanic Black	17.4 (2.7)	9.9 (0.6)	0.001
Hispanic	23.0 (3.6)	16.1 (0.8)	
Non-Hispanic White	59.7 (3.9)	74.0 (0.9)	
Age (years)			
18–25	21.6 (2.3)	9.6 (0.3)	<0.001
26–34	38.1 (4.3)	29.1 (0.8)	
35–49	40.3 (4.2)	61.4 (0.9)	
Marital status			
Separated/divorced/never married	39.4 (3.8)	19.5 (0.8)	<0.001
Married	60.6 (3.8)	80.5 (0.8)	
Education			
< High school	23.2 (3.2)	16.6 (0.7)	0.08
High school	28.9 (3.3)	33.5 (0.9)	
Any college	47.9 (4.2)	49.9 (1.0)	
Household income (\$U.S.)			
<20,000	19.3 (3.1)	10.2 (0.5)	0.001
20–39,000	28.5 (3.3)	21.6 (0.8)	
40–74,000	30.4 (3.8)	36.6 (0.9)	
≥75,000	21.9 (3.9)	31.6 (0.9)	
Employment			
Unemployed	13.7 (2.7)	7.3 (0.4)	0.02
Employed	86.3 (2.7)	92.8 (0.4)	
Health insurance			
None	27.2 (3.4)	15.6 (0.6)	<0.001
Government subsidized	6.0 (1.6)	3.4 (0.3)	
Private/other	66.9 (3.6)	81.1 (0.7)	
Serious Mental Illness	16.8 (2.8)	5.0 (0.4)	< 0.001
Past year ED use	37.8 (4.1)	24.1 (0.8)	0.001

Note: IPV=intimate partner violence; S.E.=standard error

^a Chi-square p values^b Percentages are weighted

Table 2

Risk-taking behaviors in the past 12 months, by intimate partner violence status

	IPV Perpetrators (N=323)	Non-Perpetrators (N= 5950)	P Value ^a
Risk-taking Behavior	% (S.E.)^b	% (S.E.)^b	
Substance Use			
Binge drinking	49.02 (3.75)	38.95 (0.88)	0.012
Heavy alcohol use	17.77 (2.89)	11.47 (0.56)	0.033
Alcohol abuse/dependence	28.71 (3.40)	11.43 (0.54)	<0.001
Any illicit drug use	46.53 (4.14)	18.11 (0.70)	<0.001
Drug abuse/dependence	15.26 (2.93)	3.23 (0.29)	<0.001
Perception of Risk Taking – High	48.01 (3.85)	30.08 (0.85)	<0.001
Transportation-Related Risk Taking	80.59 (2.93)	57.00 (0.92)	0.007
Inconsistent or no seat belt use	44.02 (3.86)	33.35 (0.85)	<0.001
Driving under the influence	47.31 (3.93)	25.95 (0.77)	<0.001
Other transportation-related risk taking	41.12 (3.81)	21.77 (0.76)	<0.001
Arrested for Aggressive Behavior	8.59 (1.84)	0.87 (0.14)	<0.001
Other Risk Taking Behaviors	65.85 (3.73)	48.76 (0.91)	<0.001

Note: IPV=intimate partner violence; S.E.=standard error

^a Chi-square p values^b Percentages are weighted

Table 3

Final multivariate model of intimate partner violence perpetration and any past year emergency department use (n=6209)^a

Risk Factor	AOR (95% CI)
IPV Perpetration	1.47 (1.01, 2.13)
Race/Ethnicity	
Non-Hispanic Black	1.25 (0.97, 1.60)
Hispanic	0.87 (0.66, 1.16)
Non-Hispanic White	1.00
Marital Status	
Separated/divorced/never married	1.01 (0.81, 1.26)
Married	1.00
Age (years)	
18–25	1.18 (0.95, 1.46)
26–34	1.00 (0.82, 1.21)
35–49	1.00
Household Income (\$U.S.)	
<20,000	1.41 (1.00, 1.98)
20–39,000	1.13 (0.88, 1.44)
40–74,000	1.16 (0.94, 1.44)
≥75,000	1.00
Education	
< High school	1.72 (1.36, 2.18)
High school	1.21 (1.00, 1.46)
Any college	1.00
Employment	
Unemployed	1.24 (0.96, 1.62)
Employed	1.00
Health Insurance	
None	0.80 (0.61, 1.04)
Government subsidized	1.19 (0.77, 1.86)
Private/other	1.00
Drug Abuse/Dependence	1.58 (1.06, 2.36)
Transportation-Related Risk Taking	1.46 (1.22, 1.76)
Serious Mental Illness	1.68 (1.25, 2.27)

Note: IPV=intimate partner violence; AOR = adjusted odds ratio, adjusted for all factors listed; CI = confidence interval

^a 64 observations were excluded due to missing data on substance use, risk-taking or Serious Mental Illness