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The Relation between Interpersonal Violence and Substance Use among a Sample of University Students: Examination of the Role of Victim and Perpetrator Substance Use

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Abstract

Objective—To examine the relation between interpersonal violence and substance use and to describe the role of victim and perpetrator substance use within such incidents among university students.

Methods—A random sample of students (N=1197) participating in this cross-sectional study completed an online survey. Logistic regression models assessed the relation between substance use and sexual and physical victimization. Victim and perpetrator substance use at the time of incident were described.

Results—Females were more likely to report sexual violence compared to males, whereas males were more likely to report physical victimization (p 's<0.05). In logistic regression models, all forms of substance use were significantly associated with physical victimization among males (OR's=2.0–5.1). Among females, most forms of substance use were associated with sexual victimization (OR's=2.4–4.7). Both males and females reported high rates of perpetrator and own substance use during victimization incidents.

Conclusions—Findings suggest that previous documentation among victimization studies of a relation between substance use and subsequent risk for victimization may also be attributable to the substance use behavior of the perpetrator.

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Keywords

substance use; college students; violence perpetration; interpersonal violence

1. INTRODUCTION

Interpersonal victimization has been associated with increased risk of psychological, physical, and behavioral health problems including substance use (e.g. El-Bassel et al., 2003; Tjaden & Thoennes, 1998). While victimization has been linked to increased rates of subsequent substance use (e.g. Gidycz, Orchowski, King, & Rich, 2008; Grayson & Nolen-Hoeksema, 2005), studies have also indicated that substance use can increase victimization risk (Kaysen, et al., 2006; Testa, Livingston, & Leonard, 2003). However, less is known about the means by which substance use influences victimization risk. Many existing studies have alluded to alcohol's effects on victim's perceptions of and ability to respond to situations of violence (e.g. Davis, George, & Norris, 2004; Testa, Livingston, & Collins, 2000). However, data collected *among perpetrators* has highlighted the role of substance use in perpetration of both physical and sexual violence (e.g. Hingson, Heeren, & Zakocs, 2002; Testa, Vanzile-Tamsen, & Livingston, 2004).

Given high rates of substance use reported on many college campuses in the US (Hingson et al., 2002; Harford, Wechsler, & Seibring, 2002) and high rates of victimization between the ages of 16 and 26 (Tjaden & Thoennes, 1998) it is especially important to study the relation between interpersonal victimization and substance use among college students. The purpose of the current manuscript is: 1) to document the role of substance use in reports of sexual and physical violence among male and female university students, and 2) to describe study participant *and perpetrator* substance use at the time of victimization incident.

2. METHODS

2.1. Sample and procedure

This cross sectional research study was conducted among a representative and random sample of undergraduate students in a large urban university in Boston (N=2600) between January to March of 2006. Participants were recruited via email to complete an online survey. A total of 1381 (53%) participants completed the survey; participants missing data on sex (n=38) or sexual/physical victimization (n=71 males, n=75 women) were deleted from all current study analyses, with a resulting 513 males and 684 females (n=1197). Participants deleted from the analyses did not vary significantly on demographics or other relevant study variables (all p 's > 0.05). All study procedures were approved by the university Human Subjects Review Board.

2.2 Measures

Sexual violence was measured using two items: 1) forced sexual touching/fondling within the last year (Core Alcohol and Drug Survey; Presley et al., 1994) and 2) being a victim of sexual assault or date rape in the past year (yes/no). The physical violence item asked

participants whether (yes/no) s(he) had experienced actual physical violence in the past year (Core Alcohol and Drug Survey; Presley et al., 1994).

Alcohol, marijuana and cocaine use in the past 30 days was measured by asking participants how many days they drank alcohol or used marijuana or cocaine; each measure was dichotomized as any use versus no use (Core Alcohol and Drug Survey; Presley et al., 1994). Binge drinking was defined as having 5 or more drinks for males and 4 or more drinks for females, given biological differences in metabolism of alcohol (Wechsler, Dowdall, Davenport, & Rimm, 1995); participants were asked to report the number of drinks per day over a typical week during the past three months (Daily Drinking Questionnaire-DDQ; Collins et al., 1985) and classified as binge drinkers if they reported such drinking at least one day in a typical week. High number of alcoholic drinks per week was measured using the DDQ; a high level of alcohol consumption was considered to be 20 drinks for males and 16 drinks for females over a typical week during the past three months.

Drinking behavior at the time of the incident of sexual or physical violence was measured by asking participants reporting sexual assault/rape whether they were drinking, and whether the perpetrator was drinking shortly before these incidents (yes/no). For experiences of forced sexual touching/fondling and actual physical violence measures, *only study participant substance use was examined* (Core Alcohol and Drug Survey; Presley et al., 1994).

Demographics—Age was measured as a continuous variable and dichotomized as under 21 versus 21 and older, based on legal drinking age. Race/ethnicity was categorized as White, Asian, Hispanic, Black, or other. Year of study (freshman, sophomore, junior, senior, graduate student, other), student status (full time or part time), employment (full time, part time, none), hometown (urban, suburban, rural), US born (yes, no), and student residence type (off campus, residence hall, leased housing, or other) were also assessed.

2.3 Data Analysis

To assess sex differences across relevant study variables, chi-square tests were used to examine statistical significance. Crude and adjusted logistic regression models were used to assess the associations of substance use variables with variables measuring sexual and physical victimization. Demographic variables associated with any form of victimization in bivariate analyses ($p < 0.1$) and which changed the magnitude of association by 10% or greater, were included in the adjusted regression analyses. Analyses were also age-adjusted due to the decision *a priori* to adjust for influence of being legal drinking age versus being underage. Frequencies described study participant and perpetrator substance use at the time of victimization incident.

3. Results

3.1. Participant demographics, victimization experiences, and substance use

Participant demographics are provided in Table 1. Sexual victimization was greater among females (7%; $n=46/684$) compared to males (3%; $n=14/513$) ($\chi^2 = 9.8$, $df=2$, $p = 0.002$). Physical victimization was more common among males (10%; $n=51/513$) compared to

females (3%; $n=21/684$) ($\chi^2 = 24.4$, $df=2$, $p = 0.0001$). Males were more likely to report drinking 16–20 drinks per week, binge drinking, marijuana use, and cocaine use (all p 's <0.05).

3.2. Substance use in relation to reports of victimization, & participant and perpetrator substance use

Findings from logistic regression models indicate that among males, the following were related to physical victimization: any alcohol use in the past 30 days (Odds Ratio (OR) = 3.0, 95% Confidence Interval (CI): 1.1–8.5), binge drinking at least once a week in the past 3 months (OR=4.1, 95% CI: 2.1–7.9), drinking 20 or more drinks per week in the past 3 months (OR=4.7, 95% CI: 2.5–8.7), using marijuana in the past 30 days (OR=2.0, 95% CI: 1.1–3.7), and using cocaine in the past 30 days (OR=5.1, 95% CI: 1.8–14.4). (Table 2) The following variables were associated with sexual victimization among females: any alcohol use in the past 30 days (OR=3.1, 95% CI: 1.1–8.8), binge drinking at least once a week in the past 3 months (OR=2.4, 95% CI: 1.3–4.4), drinking 16 or more drinks per week in the past 3 months (OR=3.0, 95% CI: 1.3–6.9), and using cocaine in the past 30 days (OR=4.7, 95% CI: 1.5–16.2). (Table 2).

Seventy percent (7/10) and 55% (28/51) of males reported they were drinking and/or using drugs at the time when they experienced forced sexual touching and physical violence respectively; 86% (6/7) reported they were drinking when they experienced sexual assault/rape. Among females, 39% (12/31) report such behavior during an incident of forced sexual touching, 70% (19/27) when sexually assaulted/raped, and 43% (9/21) when victimized physically. *Both males (71%; $n=5/7$) and females (78%; $n=21/27$) report high rates of perpetrators' drinking and/or drug use during incidents of sexual assault or rape.*

4. DISCUSSION

Study findings indicate that substance use is associated with increased reports of physical victimization among college males and increased risk for sexual victimization among college females, and are in congruence with findings from previous studies (e.g. Grayson & Nolen-Hoeksema, 2005; Kaysen et al., 2006; Meade, Kershaw, Hansen, & Sikkema, 2007). While based on a small sample size, analyses from the current study extend previous sexual victimization research by describing participant *and perpetrator* substance use, suggesting that substance use is common among the victim, perpetrator, and both. Previous studies assessing risk for victimization have often posited that substance use increases vulnerability for victimization; however, current study findings highlight the need for future physical and sexual *victimization studies* to further consider the influence of the *perpetrator's substance use behavior* within the context of victimization incidents.

The findings of the current study should be considered with recognition of several study limitations. The self-reported nature of the study as well as the stigma associated with substance use and victimization may result in underreporting; however, computer based surveys often reduce reporting biases of stigmatized behaviors, including victimization (Abbey, 2005). Small numbers reporting victimization and lack of information on perpetrator substance use during physical victimization incidents limited the assessment

related to substance use behaviors in the context of victimization. The cross-sectional nature of the study limited ability to identify temporal sequencing and study findings are most generalizable to university populations with similar demographic profiles.

In conclusion, given the high proportion of substance use among both perpetrator and victim reported in the current study, findings suggest that previous documentation among victimization studies of a relation between substance use and subsequent risk for victimization may also be attributable to the substance use behavior of the perpetrator. However, future research is needed on both physical and sexual victimization with larger samples to further investigate the influence of *perpetrator's* substance use during incidents of victimization. Such findings will be necessary in order to develop appropriate prevention efforts.

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Table 1

Sample Demographics

	Male (n=513)	Female (n=684)
Demographic Variable	% (n)	% (n)
Age		
<21	52.0 (267)	57.6 (394)
21+	48.0 (246)	42.4 (290)
Race/Ethnicity		
White	64.3 (330)	61.9 (422)
Asian	12.7 (65)	11.4 (78)
Hispanic	9.6 (49)	10.4 (71)
Black	7.8 (40)	8.4 (57)
Other	5.7 (29)	7.9 (54)
US born		
Yes	87.5 (449)	87.7 (600)
No	12.5 (64)	12.3 (84)
Year of Study		
Freshman	24.8 (127)	21.8 (149)
Sophomore	19.9 (102)	25.3 (173)
Junior	14.8 (76)	15.4 (105)
Senior	19.5 (100)	14.8 (101)
Graduate level	19.9 (102)	21.2 (145)
Other	1.2 (6)	1.5 (10)
Student Status		
Full time	98.6 (506)	98.1 (671)
Part time	1.4 (7)	1.9 (13)
Employment [±]		
Full time	19.9 (102)	18.7 (128)
Part time	38.6 (198)	51.2 (350)
None	41.5 (213)	30.1 (206)
Hometown		
Suburban	59.6 (305)	60.1 (411)
Urban	22.1 (113)	19.9 (136)
Rural	18.4 (94)	20.0 (137)
Type of residence [⊥]		
Off campus	48.5 (248)	39.3 (269)
Residence Hall	42.5 (217)	51.2 (350)
Leased Housing	5.7 (29)	6.3 (43)
Other	3.3 (17)	3.2 (22)

[±] p<0.0001[⊥] p< 0.05

Table 2

Crude and age-adjusted logistic regression findings: Association between substance use variables & reports of sexual and physical violence victimization

Substance Use Variable	% (n)◆	Crude Odds Ratio (OR)	Adjusted OR*
Males (n=513)			
Alcohol, past 30 days	80.7 (414)		
Sexual violence	92.1 (13)	3.2 (0.4–24.6)	2.8 (0.4–21.9)
Physical violence	92.2 (47)	3.0 (1.1–8.7) †	3.0 (1.1–8.5) †
Binge drank on average at least once a week, past 3 months	44.8 (230)		
Sexual violence	64.3 (9)	2.3 (0.7–6.9)	2.2 (0.7–6.8)
Physical violence	74.5 (38)	4.1 (2.1–7.9) †	4.1 (2.1–7.9) †
Drank 20 or more drinks on average per week, past 3 months	16.0 (82)		
Sexual violence	21.4 (3)	1.5 (0.4–5.3)	1.6 (0.4–5.5)
Physical violence	41.2 (21)	4.6 (2.5–8.5) †	4.7 (2.5–8.7) †
Marijuana, past 30 days	25.3 (130)		
Sexual violence	28.6 (4)	1.2 (0.4–3.8)	1.3 (0.4–4.4)
Physical violence	37.3 (19)	1.9 (1.1–3.4) †	2.0 (1.1–3.7) †
Cocaine, past 30 days	3.5 (18)		
Sexual violence	0 (0)	**	**
Physical violence	11.8 (6)	5.0 (1.8–14.0) †	5.1 (1.8–14.4) †
Females (n=684)			
Alcohol, past 30 days	80.0 (547)		
Sexual violence	91.3 (42)	2.8 (1.0–7.8) †	3.1 (1.1–8.8) †
Physical violence	95.2 (20)	5.2 (0.7–38.3)	5.9 (0.8–45.0)
Binge drank on average at least once a week, past 3 months	38.9 (266)		
Sexual violence	58.7 (27)	2.4 (1.3–4.4) †	2.4 (1.3–4.4) †
Physical violence	42.9 (9)	1.2 (0.5–2.9)	1.2 (0.5–2.9)
Drank 16 or more drinks on average per week, past 3 months	7.5 (51)		
Sexual violence	17.4 (8)	2.9 (1.3–6.6) †	3.0 (1.3–6.9) †
Physical violence	23.8 (5)	4.2 (1.5–12.0) †	4.4 (1.5–12.7) †
Marijuana, past 30 days	20.5 (140)		
Sexual violence	26.1 (12)	1.4 (0.7–2.8)	1.4 (0.7–2.7)
Physical violence	33.3 (7)	2.0 (0.8–5.0)	1.9 (0.8–4.8)
Cocaine, past 30 days	2.5 (17)		
Sexual violence	8.7 (4)	4.6 (1.4–14.7) †	4.7 (1.5–16.2) †
Physical violence	4.8 (1)	2.0 (0.3–16.0)	2.1 (0.3–16.6)

◆ Frequencies indented represent reported sexual and physical violence among those reporting each type of substance use behavior

* Adjusted for age (21 and older versus younger than 21)

defined as 5 or more drinks in one day for males and 4 or more drinks in one day for females

** data not sufficient for this analysis

† p<0.05

‡ p<0.0001

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