Caffeinated Alcoholic Beverages and Intimate Partner Violence Victimization

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Background: Caffeinated alcoholic beverage (CAB) use is associated with general victimization beyond the use of alcohol alone.

Materials and Methods: No prior research has evaluated the association between CAB use and intimate partner violence (IPV) victimization. This study evaluated the CAB–IPV victimization relationship using the responses of 100 (40 female) respondents to an online survey.

Results: Results of logistic regression analyses indicated that CAB use was associated with IPV physical and sexual victimization after adjusting for demographics and heavy alcohol use. Exploratory analyses detected little evidence of sex differences in the strength of the relationship between CAB use and IPV victimization.

Conclusions: The current results provide initial evidence that CAB use may place males and females at greater risk of IPV victimization.

Keywords: caffeine, alcohol, partner violence, victimization, online crowdsourcing

Introduction

ALCOHOL USE CAUSES COGNITIVE DISINHIBITION and is often consumed in proximity to similarly compromised individuals, increasing the risk of intimate partner violence (IPV) victimization.¹ Recent drinking trends include the introduction of caffeine, in the form of coffee or energy drinks, to alcoholic beverages. These caffeinated alcoholic beverages (CABs) have been shown to produce physiological effects that are distinct from consumption of alcohol alone. Although the relationship between CAB use and alcohol consumption remains a topic of debate with some data indicating no effect of caffeine on subjective intoxication or episodic volume consumed,² other data suggest that CAB use may result in a prolonged period of impaired disinhibited cognitive functioning while postponing the sedating effects observed on the descending limb of alcohol intoxication.³ It is during the period of acute cognitive disinhibition that conflict, intimate partner conflict, IPV, and reciprocal IPV are most likely to occur.⁴

Prior research supports a link between CAB use and general victimization. Quigley *et al.* presented

data indicating that among a sample of 175 participants, those who consumed a CAB were more likely to be the victims of barroom violence.⁵ CAB use has also been associated with interpersonal injury. Droste *et al.* evaluated the reports of 594 students, reporting that CAB users were disproportionately more likely to be victims of general verbal, physical, and sexual aggression than participants who denied CAB use.⁶ In a recent systematic review, Roemer and Stockwell identified support for the association between CAB use and injury,⁷ including a study by O'Brien *et al.* in which they found that high sensation seeking students who consumed CABs were more likely to incur an injury that required medical attention than their peers in a sample of 3390 participants.⁸ The relationship between CAB use and IPV victimization has not been systematically evaluated.

The current study

No study has yet investigated the association between the use of alcoholic beverages containing moderately high doses of caffeine and IPV victimization directly. This study investigated CAB use as a potential risk factor for IPV victimization among a community sample of

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adults. We hypothesized that individuals who had consumed CABs in the past year would evidence a greater likelihood of being the victim of recent sexual coercion as well as physical assault and injury. Sex effects were explored.

Materials and Methods

Sample

This study is based upon secondary analyses of a data set collected from a sample of 130 adult participants using Amazon's Mechanical Turk (MTurk) to evaluate the relationship between alcohol use and traditional partner violence. After exclusion of 30 participants who denied involvement in an intimate relationship or who provided incomplete data, 100 (40 female) participants were included in these analyses.

Procedure

All MTurk participants consented to participate online and were provided financial compensation in exchange for completing a brief self-report battery. This study was approved by the appropriate Institutional Review Board.

Participants reported age, sex, ethnicity (i.e., minority or majority status), and household income (i.e., more or less than \$25,000 annually). Participants were classified as victims or nonvictims of physical assault (e.g., "My partner pushed, shoved, or slapped me."), injury (e.g., "I had a bruise, or small cut, or felt pain the next day because of a fight with my partner."), and sexual coercion (e.g., "My partner insisted on sex when I did not want to or insisted on sex without a condom.") based upon responses to respective 2-item experience subscales embedded within the 20-item Shortened Revised Conflict Tactics Scale.⁹ Participants who reported any past-year victimization in each domain were classified as victims and those who denied any past-year victimization were classified as nonvictims. Only males who reported consuming five or more and females who reported consuming four or more alcoholic beverages in a typical sitting

on the 10-item Alcohol Use Disorder Identification Test (AUDIT)¹⁰ were classified as heavy drinkers.¹¹ An additional question was administered asking participants, "How often in the past year have you used a drink that mixed alcohol with a caffeinated beverage, such as coffee, Red Bull, or similar energy drink?" Participants were dichotomized based upon whether or not they had consumed a CAB in the past year.

Data analysis

CAB use was entered into the first set of logistic regression models predicting past-year physical assault, injury, and sexual coercion victimization. Age, sex, ethnicity, and income were entered into model 2, heavy alcohol use was added to model 3, and the interaction between sex and CAB use was entered for exploratory purposes into model 4.

Results

The average age of the current sample was 40.4 (SD = 12.9, range = 22–75) years. Participants were primarily male (60.0%), heterosexual (71.0%), Caucasian (67.0%), and had earned at least \$25,000 annual income (68.0%). Sample demographics are further broken down by IPV victimization status in Table 1. Roughly one-third of participants in the current sample reported past-year CAB use (32%). Similarly, 32% reported past-year victimization by physical assault, 29% received an IPV-related injury, and 33% reported being the victims of sexual coercion. These data are detailed in Table 2.

IPV victimization

Physical assault. As depicted in Table 2, CAB use was significantly associated with physical assault in model 1 ($\chi^2_{(1)} = 9.38, p = 0.002$). This effect remained significant after adjusting for age, sex, ethnicity, income, and heavy alcohol use in models 2 ($\chi^2_{(5)} = 32.23, p < 0.001$) and 3 ($\chi^2_{(6)} = 32.48, p < 0.001$). The CAB X

TABLE 1. SAMPLE DEMOGRAPHICS BROKEN DOWN BY PARTNER VIOLENCE EXPERIENCES

	<i>Physical assault</i>						<i>Injury</i>						<i>Sexual coercion</i>					
	<i>Yes</i>			<i>No</i>			<i>Yes</i>			<i>No</i>			<i>Yes</i>			<i>No</i>		
	<i>M</i>	<i>SD</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>%</i>
Age	33.5	9.1		43.6	13.3		32.3	6.29		43.8	13.7		31.8	5.46		44.6	13.6	
Male			56.3			70.0			51.7			63.8			57.6			62.1
Heterosexual			62.5			75.0			65.5			73.9			69.7			71.2
Ethnicity																		
Caucasian			34.4			82.4			34.5			81.2			30.3			84.8
Minority			65.6			17.6			65.5			18.8			69.7			15.2
Annual income																		
<\$25,000			34.4			30.9			37.9			29.0			33.3			31.8
≥\$25,000			65.6			69.1			62.1			71.0			66.7			68.2

SD, standard deviation.

TABLE 2. INTIMATE PARTNER VIOLENCE VICTIMIZATION COMPARISONS BETWEEN PARTICIPANTS WHO ENGAGE IN CAFFEINATED ALCOHOLIC BEVERAGE USE AND PARTICIPANTS WHO DO NOT

	<i>Caffeinated alcoholic beverage use</i>		<i>Model 1, OR (95% CI)</i>	<i>Model 2^a, Adj. OR (95% CI)</i>	<i>Model 3^b, Adj. OR (95% CI)</i>
	<i>No, n=68 (68.0%)</i>	<i>Yes, n=32 (32.0%)</i>			
Physical assault	15 (22.1%)	17 (53.1%)	4.00 (1.63–9.85)**	3.32 (1.14–9.64)*	3.15 (1.06–9.34)*
Injury	13 (19.1%)	16 (50.0%)	4.08 (1.62–10.24)**	3.63 (1.18–11.12)*	3.51 (1.12–10.99)*
Sexual coercion	15 (22.1%)	18 (56.3%)	4.46 (1.80–11.01)**	3.70 (1.13–12.08)*	3.75 (1.12–12.60)*

^aAdjusted ORs adjusting for sex, age, ethnicity, and income.

^bAdjusted ORs adjusting for sex, age, ethnicity, income, and heavy alcohol use.

* $p < 0.05$.

** $p < 0.01$.

CI, confidence interval; OR, odds ratio.

sex interaction term added to model 4 ($\chi_{(7)} = 34.42$, $p < 0.001$) did not reach statistical significance (odds ratio [OR] = 0.20, 95% confidence interval [CI] = 0.02–2.03). Participants who reported past-year CAB use were more likely than participants who refused CAB use to be the victim of at least one act of physical IPV during the assessment period after adjusting for age, sex, ethnicity, income, and heavy alcohol use.

Injury. CAB use was significantly associated with the severe IPV victimization that resulted in injury ($\chi_{(1)} = 9.19$, $p = 0.002$). This effect remained significant after adjusting for age, sex, ethnicity, income, and heavy alcohol use in models 2 ($\chi_{(5)} = 34.36$, $p < 0.001$) and 3 ($\chi_{(6)} = 34.45$, $p < 0.001$). The CAB X sex interaction term added to model 4 ($\chi_{(7)} = 40.58$, $p < 0.001$) did reach statistical significance (OR = 0.04, 95% CI = 0.003–0.613). Follow-up simple slopes analyses revealed that CAB use was associated with increased risk of injury victimization among females (OR = 26.07, 95% CI = 3.07–221.18) and not among males (OR = 1.11, 95% CI = 0.25–4.88), although again the wide CIs indicate low power and call into question our ability to interpret this interaction. Thus, interpretation should focus on main effects. Participants who reported the use of CABs in the past year were at greater risk of incurring an injury from an intimate partner than participants who denied past-year CAB use.

Sexual coercion. CAB use was significantly associated with sexual victimization in model 1 ($\chi_{(1)} = 10.91$, $p = 0.001$). This effect remained significant after adjusting for age, sex, ethnicity, income, and heavy alcohol use in models 2 ($\chi_{(5)} = 47.28$, $p < 0.001$) and 3 ($\chi_{(6)} = 47.29$, $p < 0.001$). The CAB X sex interaction term added to model 4 ($\chi_{(7)} = 49.07$, $p < 0.001$) did not reach statistical significance (OR = 0.18, 95% CI = 0.01–2.39). Participants who reported past-year CAB use were more likely to be the victim of sexual coercion than participants who refused CAB use regardless of demographic factors and heavy alcohol use.

Discussion

CAB users were significantly more likely to endorse IPV victimization across all three domains of sexual coercion, physical assault, and injury in this study. There are potential behavioral and environmental factors that may explain this relationship. First, the psychophysiological effects of alcohol include temporary cognitive depression that results in behavioral disinhibition and increases reliance upon aggressive behavioral responses, including IPV perpetration.⁴ IPV perpetration is the strongest predictor of IPV victimization as it results in anger and reciprocal responding.¹² Indeed, Archer concluded that individuals who perpetrate IPV also report the greatest frequency and severity of IPV victimization.¹³ Mixing caffeine with alcohol likely prolongs the period of greatest risk for IPV perpetration and victimization.³

Alcohol use may further increase the risk of IPV victimization by impairing normal social functioning while victims are in proximity with high-risk intoxicated individuals or situations.¹ The use of CABs may increase engagement in high-risk behavioral exchanges by extending the victim's stamina for remaining in high-risk situations beyond the effects of alcohol alone.³

Recent reviews of the literature, however, detected no significant reduction in perceived alcohol intoxication when caffeine was also consumed and found that CAB users drink more alcohol than non-CAB users but that they consume less alcohol during episodes of concurrent alcohol and caffeine use compared with alcohol alone.^{2,14} Thus, it remains possible that the relationship between CAB use and IPV victimization may be a spurious one in which an underlying characteristic, such as high impulsivity or sensation seeking, may be associated with both CAB use and affiliating with aggressive intimate partners.

Exploratory analyses offered little evidence for sex differences in the relationship between CAB use and IPV victimization, suggesting parity in the strength of this relationship among males and females. Although females who engaged in CAB use were significantly more likely to be victims of severe physical violence resulting

in injury, a relationship not observed among males in the current sample, interaction analyses were underpowered. Sex differences would be best assessed with a larger replication study.

This study offers initial insight into the association between CAB use and IPV victimization, but also has a number of limitations, including a small sample and the use of self-report data. Online recruitment and assessment have been shown to be both reliable and more representative of the general population than traditional recruitment techniques for samples of convenience.¹⁵

As the first pilot study assessing the relationship between CAB use and IPV victimization in this manner, this study had limitations. Most importantly, the small pilot sample necessitated the clustering of all CAB users into a single group to conduct meaningful analyses, precluding the analysis of the potential nuances in the relationship between frequency of CAB use and IPV. We further recommend that future studies operationalize what it means to “mix” caffeine with alcohol and the caffeine dosage within beverages, possibly even soliciting beverage type and amount.

The current data support an association between CAB use and IPV victimization but are incapable of determining whether IPV occurred proximal to CAB use. Future research is required to determine the relative effects of CAB use frequency on IPV and any potential temporal sequencing or causal relationship between CAB use and IPV victimization. Furthermore, it should be noted that male and female IPV victims hold no responsibility for the physical and sexual aggression imposed upon them, even when the distinction between victim and perpetrator is obscured by the presence of bidirectional aggression.

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Author Disclosure Statement

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