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Substance Use and Intimate Partner Violence Victimization Among White, African American, and Latina Women

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INTRODUCTION

It is estimated that 4.7 million women in the United States are physically assaulted by an intimate partner each year, and more than 1 in 3 women (35.6%) have experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime (CDC, 2011), although the overall rate of intimate partner violence (IPV) is declining (Catalano, 2012). Additionally, risk of IPV varies across the life course. Young adult women, in particular, experience the highest rates of IPV (Catalano, 2012; CDC, 2011). In 2010, 9.7 per 1,000 women aged 18–24 experienced IPV while 12.1 per 1,000 women aged 25–34 experienced IPV (Catalano, 2012). Notably, the literature does not paint a consistent portrait of the association of race/ethnicity with reported IPV. While a number of studies indicate that rates of IPV are higher among racial and ethnic minorities[i], the differences are rarely statistically significant (BJS, 2009; Caetano et al., 2001; Cho, 2012). National data show that 31.7% of white women, 40.9% of black women, and 35.2% of Hispanic women have experienced IPV (CDC, 2011). In an effort to explain these differential rates, some scholars have pointed to the relationship between race/ethnicity and socioeconomic status, arguing that the generally higher rates of IPV among minority communities are the result of the socioeconomic disadvantage experienced by these groups (Bent-Goodley, 2007; Cho, 2012; West, 2004). Others have discussed the differing perceptions of IPV (McNeely and Torres, 2009) as well as the differential rates of disclosure and access to resources and support (Belknap et al., 2009) among minorities and non-minorities. Additionally, a number of scholars point to racism and other systemized forms of oppression (Miller, 2008; Potter, 2008; West, 2004).

Moreover, research has clearly demonstrated that there is a relationship between substance use and IPV. However, the temporal ordering of these variables is not clearly established. In the few studies that have sought to investigate the temporal ordering of these variables, the results are inconsistent, the samples are not nationally-representative, and the investigators failed to fully explore racial and ethnic differences in the experience of substance use and IPV. This oversight is significant given that researchers and service providers are

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[i]Notably, a number of studies have found that, although IPV is often higher among racial and ethnic minorities, white women are at much higher risk of being murdered by their partners (BJS 2000).

increasingly noting the importance of accounting for and understanding violence and trauma within treatment settings (Elliot et al., 2005). Understanding not only the temporal relationship between substance use and IPV, but also the racial and ethnic differences in these relationships, is critical to developing and refining culturally-sensitive trauma-informed prevention and treatment services for women.

INTIMATE PARTNER VIOLENCE AND SUBSTANCE USE

As a result of the astonishing prevalence of IPV among all groups of women, a number of scholars and researchers have turned their attention to both the risk factors (Jewkes, 2002; Kantor and Jasinski, 1998; Stith et al., 2004; Stuart et al., 2006) and consequences (Max et al., 2004; Meisel, 2003; Plichta, 2004) of IPV. Substance use in particular is often cited in the literature. In fact, studies show that between 20 and 50 percent of all incidents of IPV occur when one or both partners are under the influence of alcohol or drugs (Hart, 2007).

Although much research has shown that substance use increases the likelihood of IPV perpetration (Caetano et al., 2001; Fals-Stewart et al., 2003; Foran and O'Leary, 2008; Lipsky et al., 2005; Moore et al., 2011; Reingle et al., 2012; Stith et al., 2004), very little research has investigated whether substance use is a *risk factor for IPV victimization*. This limited body of research has shown that alcohol (Walker et al., 2012), marijuana (CDC, 2010b), and opioid (Moore et al., 2011) use are all risk factors for IPV victimization. Different mechanisms have been identified to help explain the influence of substance use on IPV victimization. For example, substance dependent women are more likely to have substance dependent spouses or partners (Amaro and Hardy-Fanta, 1995; Riehman et al., 2003; Tuten and Jones, 2003), which may contribute to the increased likelihood of IPV victimization given the strong association between substance use and IPV perpetration among men. Additionally, for substance abusing women with substance abusing partners, seeking treatment may create a serious problem for the relationship (McCollum and Trepper, 1995) in the sense that substance abusing partners often discourage their female partners from entering treatment and sometimes even threaten violence or threaten to leave the relationship (Amaro and Hardy-Fanta, 1995). Moreover, substance abusing women are more likely to enter into dependent relationships dominated by their partner (Woodhouse, 1992), which may hinder their ability to perform basic life skills such as managing money and planning for the future (SAMHSA, 2005) leaving them entirely dependent on their partners and making it that much more difficult to leave abusive relationships. Notably, these explanations do not take the blame away from the perpetrator and are certainly not intended to insinuate that victims of IPV are at fault for their victimization (see Kaufman-Kantor and Straus, 1987). Nevertheless, the CDC does recognize substance use as a potential individual risk factor for IPV victimization (CDC 2010b).

Substance use is also often cited as a *consequence of IPV victimization*. For instance, longitudinal studies found that IPV is associated with higher rates of drug abuse (Roberts et al., 2003), heavy drinking (Martino et al., 2005), and general substance use (Carbone-Lopez et al., 2006; Zweig et al., 2012). Additionally, researchers found that poor and homeless single mothers with histories of IPV had nearly three times the odds of using illicit drugs (Salomon et al., 2002). The most common explanation provided for substance use as a

consequence of victimization is that women use alcohol or other drugs in an effort to self-medicate (McFarlane, 1998) and cope with these traumatic events (Kayson et al., 2007; Miranda et al., 2002). As such, the CDC also lists substance use as a consequence of IPV (CDC 2010a).

A handful of studies have attempted to determine whether substance use is best understood as a risk factor or a consequence of IPV victimization by investigating the temporal ordering of these variables. For example, according to a longitudinal study of 416 women on methadone, the relationship between frequent drug use and IPV is bidirectional and varies by type of drugs. Specifically, frequent drug use increases the likelihood of subsequent IPV among crack and marijuana users. However, the experience of IPV also increases the likelihood of subsequent frequent drug use among heroin users (El-Bassel et al., 2005). Similarly, a longitudinal community-based study in Buffalo, New York surveying 724 heterosexual women found that within ongoing relationships, women's use of hard drugs was associated with increased odds of experiencing IPV over the next 12 months. Additionally, experiences of IPV were modestly associated with subsequent heavy episodic drinking but not with subsequent drug use (Testa et al., 2003).

Although the existing literature has clearly demonstrated that there is a relationship between substance use and IPV, researchers have primarily focused on perpetrators rather than victims. Even in studies focusing specifically on victims, the temporal ordering of these variables is not well understood. Thus, to more accurately examine the temporal ordering of IPV victimization and substance use, longitudinal data with a nationally representative racially and ethnically diverse sample is needed. In this paper we use data from Wave III (2001–2002) when the respondents are 18–26 years old and Wave IV (2007–2008) when respondents are 24–32 years old of the National Longitudinal Study of Adolescent Health (Add Health) that serve as Time 1 and Time 2, respectively, to answer three research questions. First, is IPV victimization during early young adulthood associated with substance use during young adulthood for women? Second, is substance use during early young adulthood associated with IPV victimization during young adulthood among women? And finally, do these bidirectional relationships vary by race/ethnicity (i.e., White, African American, and Latina)? Four different forms of IPV (minor violence, major violence,[ii] rape/sexual coercion, and injury) are investigated along with binge drinking, marijuana use, and other drug use. This study is significant in that we focus on the age periods of early young adulthood and young adulthood among women as these are the most vulnerable segment of the population (Catalano, 2012; CDC, 2011).

METHODS

Data from the Add Health Wave III and Wave IV in-home interview were analyzed. Add Health examines health and health-related behaviors including personal traits, families, friendships, romantic relationships, peer groups, schools, neighborhoods, and communities among a nationally representative sample of adolescents in seventh through twelfth grade. In

[ii]Our decision to classify violence as major and minor is san artifact of our efforts to utilize simple terms to describe the various types of IPV that the Add Health dataset includes. Specifically, we refer to more indirect forms of violence such as threats, pushing, or throwing objects as minor violence and more direct forms of violence such as slapping, hitting, and kicking as major violence.

1994, 90,000 adolescents from 134 schools completed questionnaires. A subset of respondents later participated in four in-home interviews at Wave I (1994–1995), Wave II (1996), Wave III (2001–2002) and Wave IV (2007–2008). During Wave IV data collection 92.5 percent of the sample was relocated and 80.3 percent of eligible sample members were interviewed yielding a sample size of 15,701. The sample size of women is 8,352. Survey data were collected in the respondent's home using a 90-minute CAPI/CASI instrument. A total of 2,959 self-identified White, African American, and Latina women who completed the relationship section for a current male partner in both Wave III and Wave IV were included.

Measures

Demographic control variables used in this study include age and marital status (not married 0, married 1). Socioeconomic status is represented by three variables: highest level of education (0 less than high school to 3 college graduate); employment (0 unemployed, 1 part-time, 2 full-time); and personal income measured with 8 categories ranging from less than $10,000 to $75,000 or more. Dummy variables for race/ethnicity include White, African American, and Latina.

IPV is measured at Time 1 during early young adulthood and Time 2 during young adulthood by assessing four dimensions of IPV during the year prior to the interview: minor violence, major violence, rape/sexual coercion, and injury. A dummy variable was created for no = 0 or yes = 1. Minor violence is examined by asking "How often does your current partner threaten you with violence, push or shove you, or throw something at you that could hurt?" Major violence is examined by asking "How often does your current partner slap, hit or kick you?" The question "How often has your current partner insisted on or made you have sexual relations with him when you didn't want to?" assesses rape/sexual coercion. Lastly, "How often have you had an injury, such as a sprain, bruise, or cut because of a fight with your current partner" assesses injury.

Substance use is represented by three bivariate measures (0 no, 1 yes). Binge drinking is defined as drinking 5 or more drinks during a single occasion at least 2 to 3 times a month in the past year. Marijuana use and drug use (MDMA, inhalants, LSD, heroin, PCP, or other illegal drugs) include any use within the past 12 months.

Analysis

The Pearson Chi-square and one-way ANOVA were conducted to assess differences among race/ethnic groups on all measures included in the analysis. Multivariate logistic regression analyses were run for the total sample and within race/ethnic groups to examine each of the bivariate outcomes. Separate models regressed Time 2 substance use on Time 1 IPV controlling for Time 1 substance use and the demographic and socioeconomic variables. Similarly, separate models regressed Time 2 IPV on Time 1 substance use controlling for Time 1 IPV and the demographic and socioeconomic variables. All data are weighted to reflect the complex sampling design of the study.

FINDINGS

Table 1 shows the frequencies of all study variables by race/ethnicity. At Time 1 these women are in early young adulthood with an average age of 22 and at Time 2 they are in young adulthood with an average age of 29 (not shown). Compared to other women, Latinas are slightly older, more likely to be married, and more likely to have lower levels of education. African American women are more likely to be unemployed and less likely to be employed full-time. The modal and mean response for income corresponds to the category $10,000 to $14,999 for each race/ethnic group.

Overall, 27.5% of women report experiencing some form of IPV during early young adulthood and 20.8% of women report experiencing some form of IPV during young adulthood (not shown). During early young adulthood, Latinas have a higher prevalence of IPV, excluding rape/sexual coercion, compared to White and African American women. African American women have a higher prevalence of rape/sexual coercion, compared to White and Latina women. However, during young adulthood African American women have a higher prevalence of IPV in all categories compared to White and Latina women. There is a decrease in the prevalence of IPV from early young adulthood to young adulthood for each group of women. However, there is one exception: African American women reported a slight increase in minor violence (22.8% to 24.4%). In general, White women reported lower levels of IPV during both time periods compared to African American and Latina women with the most striking difference being the prevalence of minor violence during young adulthood. Fifteen percent of White women (15.3%) reported experiencing minor violence compared to 24.4% of African American and 19.6% of Latina women.

During both early young adulthood and young adulthood White women have a higher prevalence of substance use including binge drinking, marijuana use, and drug use, compared to African American and Latina women. Across the two time periods, rates of use remained about the same for both White and Latina women. However, for African American women prevalence of use doubled for binge drinking and marijuana use while drug use increased from 1.6% to 9.8% to be about the same as White women (9.6%).

With regards to the first research question, we find that all forms of IPV are associated with later marijuana use (Table 2). Specifically, experiencing minor violence during early young adulthood increases the odds of marijuana use during young adulthood by a factor of almost 2 (Odds Ratio[OR] = 1.9, 95% Confidence Interval[CI] = 1.40, 2.58) . Similar results were found for major violence (OR = 2.0, CI = 1.40, 2.85) while rape/coercion (OR = 1.4, CI = 0.97, 2.08) and injury (OR = 1.5, CI = 0.93, 2.26) were only marginally associated with later marijuana use. IPV during early young adulthood was not associated with later binge drinking or drug use although minor violence was marginally associated with drug use (OR = 1.5, CI = 0.95, 2.21).

With regards to the second research question, we find that substance use is not associated with later IPV victimization when examining the whole sample of women (Table 3).

The third research question asks, do these bidirectional associations vary by race/ethnicity? The separate models reveal distinct racial and ethnic differences. Table 2 shows that IPV

during early young adulthood is not associated with later binge drinking for any of the different race/ethnic groups. Similarly, only major violence during early young adulthood is associated with an increase in the odds of using drugs during young adulthood for Latina women (OR = 3.5, CI = 1.10, 11.19) although minor violence is marginally associated ($p<0.10$) with increased odds of using drugs for White women (OR = 1.6, CI = 1.00, 2.57). However, experiencing all forms of IPV increases the odds of using marijuana during young adulthood by a factor of 2.4 – 3.0 for Latinas. For White women, minor violence (OR = 2.2, CI = 1.54, 3.15) and major violence (OR = 2.0, CI = 1.32, 3.16) during early young adulthood increases the odds of using marijuana. None of the forms of IPV are associated with future substance use for African American women.

Table 3 shows that binge drinking during early young adulthood increases the odds of experiencing injury related to IPV during young adulthood for Latinas by a factor of four (OR = 4.2, CI = 1.13, 15.49) and marginally ($p<0.10$) for African American women (OR = 4.5, CI = 0.87, 23.00). For drug using Latinas, the odds of experiencing major violence increase by a factor of six (OR = 6.2, CI = 1.65, 23.28) and the odds of experiencing IPV resulting in injury increase by a factor of four (OR = 4.3, CI = 0.95, 19.97), although this is only marginally associated ($p<0.10$). However, drug use is strongly associated with injury by IPV (OR = 8.6, CI = 1.24, 60.14) for African American women. Lastly, African American women's use of marijuana during early young adulthood is marginally ($p<0.10$) associated with decreased odds of experiencing multiple forms of IPV including minor violence (OR = 0.3, CI = 0.08, 0.81), rape/sexual coercion (OR = 0.1, CI = 0.02, 0.44), and major violence (OR = 0.3, CI = 0.06, 1.02). Substance use is not associated with any form of subsequent IPV for White women.

DISCUSSION

Our findings contribute to the literature on the bidirectional relationship between substance use and IPV. Specifically, this study examined whether (1) experiencing IPV during early young adulthood was associated with later substance use during young adulthood; (2) whether substance use during early young adulthood was associated with later IPV during young adulthood; and (3) whether these relationships vary by race/ethnicity. We found that for women who experience different forms of IPV - minor (threaten, push, or throw something at you) and major (slap, hit or kick you) violence, rape/coercion, violence leading to injury – their odds of later marijuana use increase by a factor of 1.4–2.0. Additionally, for women who experience minor forms of violence, their odds of later drug use increase by a factor of 1.5. Experiencing IPV was not associated with later binge drinking.

Moreover, distinct racial differences in the association between IPV during early young adulthood and substance use during young adulthood did emerge. For instance, none of the forms of IPV victimization are associated with later substance use for African American women even though their prevalence of substance use increased substantially between early young adulthood and young adulthood (binge drinking 4.6% vs. 8.9%; marijuana use 7.9% vs. 14.1%; drug use 1.6% vs. 9.8%) while White and Latina women decreased or only slightly increased their use. Yet, for both White and Latina women different forms of IPV victimization are associated with later marijuana and drug use. This suggests that different

subgroups of women may have different coping strategies for their abuse. This finding is similar to one study that found that female Asian Americans were most at risk for problem drinking if they had experienced an alcohol-related sexual assault compared to White women (Nguyen, et. al., 2010). Additionally, the dramatic increase in substance use for African American women may be a coping response to other stressors. Importantly, these findings only consider physically violent forms of intimate partner abuse. Research that includes psychological/emotional abuse and other non-physical forms of violence might produce different results.

Second, this study found that substance use during early young adulthood is not a risk factor for experiencing IPV during young adulthood for women. However, when examining distinct racial/ethnic groups of women some interesting associations emerged. For instance, substance use during early young adulthood is not associated with any form of IPV victimization during young adulthood for White women even though White women have a higher prevalence of substance use during both time periods compared to African American and Latina women. Alternatively, binge drinking and drug use increase the odds of experiencing different forms of IPV for Latina and African American women. In fact, drug use during early young adulthood increases the odds of IPV leading to injury during young adulthood for African American women by a factor of 8.6 and increases the odds of minor violence and IPV leading to injury for Latina women by factors of 6.2 and 4.3, respectively. Although substance abuse and dependence are not examined in the present study, some research suggests that while White women are more likely to engage in illicit drug use (McCabe et al., 2007; SAMHSA, 2010), minorities such as African Americans and Latinas may be more likely to be dependent and or abuse illicit drugs (McCabe et al., 2007), although research in this area is not consistent (Compton et al., 2007). As such, the differing problematic use of alcohol and other drugs may help to explain this finding. However, African American women who use marijuana have decreased odds of experiencing all types of IPV even through binge drinking and drug use increase their odds of sustaining an injury related to IPV. It is possible that the negative association between marijuana use and IPV is due to the different pharmacological and behavioral effects of various substances. For example, previous research has found that the experiences and subcultural norms associated with marijuana use appear to be much less detrimental to relationship harmony among inner city couples (Golub et al., 2010).

There are several important limitations that need to be considered. First, a major limitation of this study is the time-interval between baseline and follow-up (about 6 years) which may contribute to a potentially spurious relationship between substance use and IPV victimization especially when considering research that has identified substance use as a situational-level risk factor for IPV victimization (Valdez and Flores, 2005). Second, even though some women reported experiencing multiple forms of IPV in the past year, our study did not address this. We feel that this is outside the scope of the current study since the research questions focus on the relationships between different forms of IPV and different types of substance use. Third, the past year measures of substance use and IPV are self-reported which can be unreliable. However, this is common to most observational research using survey data. Self-report bias may have been reduced in this case since more sensitive questionnaire sections were self-administered using CASI technology. A fourth limitation

associated with using secondary data is that the four items assessing IPV do not include more serious violence such as chocking and striking with an object or more serious injuries such as broken bones, gunshot wounds, and loss of consciousness. It is possible that a stronger relationship between substance and IPV would be present for more serious forms of IPV. Finally, we do not account for the temporal sequence between substance use and IPV during Time 1. That is, we do not account for the time of onset for substance use and IPV. Our study focuses exclusively on one year periods during early young adulthood and young adulthood. Therefore, it is possible that women experienced substance use and/or IPV during the years not included in the study. This is an important limitation yet one that is difficult to address using secondary data. We attempted to address this concern by adding additional Time 1 controls. For example, when examining the association between experiencing rape/sexual coercion at Time 1 and binge drinking at Time 2, binge drinking at Time 1 was added as a statistical control.

In sum, this study confirms the IPV prevalence rates cited in other studies (Catalano, 2012; CDC, 2011) and clearly demonstrates that there are varying rates of IPV among different racial and ethnic groups. This study also found substance use to be *both a risk factor and a consequence* of IPV victimization. However, the association varies by type of substance use and type of IPV as well as by race/ethnicity. That is, the relationship between alcohol and other drug use and IPV victimization is complex. Our findings can help develop and refine culturally-sensitive trauma-informed prevention and treatment services for women that account for the unique experiences of different subgroups of women. For instance, it appears that White and Latina women engage in substance use as a response to earlier IPV. This pattern of use can be addressed in treatment by introducing women to healthier coping behaviors. For African American women, however, more research is needed to determine the way these women cope with the experience of IPV, as IPV does not increase the odds that they will turn to substances to cope. Additionally, for women of color it appears that substance use is a risk factor for later IPV. However, given the potential for spuriousness, more research is needed to document the mechanisms that link substance use across these specific periods of the life course. Nonetheless, these findings can benefit substance use treatment programs by focusing on risk reduction for IPV among women of color in treatment.

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Table 1.

Frequencies of Study Variables by Race.

	Total (*n* = 2,959)		White women (*n* = 1,792)		Black women (*n* = 681)		Hispanic women (*n* = 486)		
	n	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***p***
Time I									
Age[a]	21.9 (1.65)		21.8(1.64)		21.9(1.65)		22.2(1.62)		***
Married	518	17.5%	344	19.2%	62	9.1%	112	23.1%	***
Education									
Less than high school	354	12.0%	201	11.2%	77	11.3%	76	15.6%	*
High school	935	31.6%	532	29.7%	225	33.0%	178	36.6%	*
Some college	1,251	42.3%	781	43.6%	298	43.8%	172	35.4%	**
College	418	14.1%	277	15.5%	81	11.9%	60	12.4%	*
Employment									
Unemployed	937	31.7%	533	30.0%	257	37.7%	147	30.3%	**
Part-time	566	19.1%	370	20.7%	127	18.7%	69	14.2%	**
Full-time	1,455	49.2%	888	49.6%	297	43.6%	270	55.6%	***
Personal income[a]	2.2(2.02)		2.2(2.04)		2.1(1.84)		2.5(2.16)		**
Intimate partner violence									
Minor violence	635	21.5%	363	22.6%	155	22.8%	117	24.1%	
Major violence	387	13.1%	213	11.9%	97	14.3%	77	15.8%	*
Rape/coercion	362	12.3%	184	10.3%	109	16.1%	69	14.3%	***
Injury	238	8.1%	122	6.8%	62	9.1%	54	11.2%	**
Substance use									
Binge drinking	368	12.5%	301	16.8%	31	4.6%	36	7.6%	***
Marijuana use	343	11.6%	236	13.2%	54	7.9%	53	10.9%	**
Drug use	237	8.0%	194	10.8%	11	1.6%	32	6.6%	***
Time 2									
Intimate partner violence									
Minor violence	535	18.1%	274	15.3%	166	24.4%	95	19.6%	***
Major violence	259	8.8%	135	7.5%	78	11.5%	46	9.5%	**
Rape/coercion	174	5.9%	82	4.6%	57	8.4%	35	7.2%	**
Injury	144	4.9%	82	4.6%	37	5.4%	25	5.1%	
Substance use									
Binge drinking	390	13.3%	283	15.9%	60	8.9%	47	9.8%	***
Marijuana use	473	16.0%	319	17.8%	96	14.1%	58	11.9%	**
Drug use	221	7.5%	172	9.6%	26	9.8%	23	4.7%	***

Note. T1 is from Wave III Add Health (2001–2002) and T2 is from Wave IV Add Health (2007–2008); Person's chi-square used for tests of significance.

[a]One-way ANOVA.

$^{+}p < .10$.

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*$p < .05$.

**$p < .01$.

***$p < .001$.

Table 2.

Odds Ratios From Regressing T2 Substance Use on T1 Intimate Partner Violence by Race.

	Binge drinking		Marijuana use		Drug use	
	OR [95% CI]	*p*	OR [95% CI]	*p*	OR [95% CI]	*p*
Intimate partner violence			Total (*N* = 2,959)			
Minor violence	1.0[0.71,1.43]		1.9 [1.40, 2.58]	***	1.5[0.95,2.21]	+
Major violence	1.1[0.73,1.64]		2.0 [1.40, 2.85]	***	1.3[0.80,2.15]	
Rape/coersion	1.3[0.84,2.14]		1.4 [0.97, 2.08]	+	1.1[0.67,1.94]	
Injury	0.8[0.42,1.33]		1.5 [0.93, 2.26]	+	0.08[0.44,1.59]	
Intimate partner violence			White women (*n* = 1,792)			
Minor violence	1.0[0.69,1.52]		2.2 [1.54, 3.15]	***	I .6[1.00,2.57]	+
Major violence	1.4[0.86,2.20]		2.0 [1.32, 3.16]	**	1.3[0.70,2.22]	
Rape/Coersion	1.3[0.74,2.39]		1.3 [0.82, 2.18]		1.2[0.67,2.23]	
Injury	0.8[0.38,1.58]		1.3 [0.76, 2.35]		0.8[0.38,1.75]	
Intimate partner violence			Black women (*n* = 681)			
Minor violence	2.2[0.79,6.02]		0.7 [0.26, 1.64]		0.3[0.06,1.08]	
Major violence	1.0[0.35,2.64]		1.2 [0.51, 2.66]		0.4[0.07,1.95]	
Rape/Coersion	1.4[0.50,4.10]		1.1 [0.47, 2.58]		1.0[0.16,5.84]	
Injury	0.8[0.27,2.32]		0.9 [0.31, 2.53]		0.8[0.13,4.20]	
Intimate partner violence			Hispanic women (*n* = 486)			
Minor violence	0.6[0.20,1.77]		2.4 [1.03, 5.63]	*	2.4[0.74,7.51]	
Major violence	0.5[0.54,8.51]		3.0 [1.27, 7.08]	*	3.5[1.10,11.19]	*
Rape/Coersion	1.7[0.62,4.85]		2.5 [1.02, 6.23]	*	1.1[0.21,6.18]	
Injury	0.8[0.23,2.86]		2.6 [1.03, 6.41]	*	1.4[0.33,5.72]	

Note. T1 is from Wave III Add Health (2001–2002) and T2 is from Wave IV Add Health (2007–2008). Models control for age, married, education, employment, personal income, and corresponding T1 substance (i.e., binge drinking, marijuana use, and drug use). OR = odds ratio; CI = confidence interval.

+ $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3.

Odds Ratios From Regressing T2 Intimate Partner Violence on T1 Substance Use by Race.

	IPV minor violence		IPV major violence		IPV rape/coersion		IPV injury	
	OR [95% CI]	***p***	**OR [95% CI]**	***p***	**OR [95% CI]**	***p***	**OR [95% CI]**	***p***
Substance use			Total (n = 2,959)					
Binge drinking	1.0 [0.67,1.44]		1.1 [0.70.1.84]		0.7 [0.30, 1.47]		1.0 [0.53,1.90]	
Marijuana use	0.9 [0.57,1.29]		1.2 [0.71,1.98]		0.7 [0.32, 1.31]		0.9 [0.43, 1.75]	
Drug use	0.9 [0.59, 1.43]		1.3 [0.76, 2.28]		0.7 [0.30, 1.61]		1.1 [0.53, 2.30]	
Substance use			White women (n = 1,792)					
Binge drinking	1.1 [0.72, 1.76]		1.2 [0.69, 2.20]		0.7 [0.25, 1.79]		0.7 [0.28, 1.55]	
Marijuana use	1.1 [0.67, 1.75]		1.4[0.78, 2.62]		0.9 [0.41, 2.10]		1.0 [0.43, 2.23]	
Drug use	0.9 [0.54, 1.50]		1.1 [0.54, 2.07]		0.7 [0.25, 1.78]		0.7 [0.26, 1.78]	
Substance use			Black women (n = 681)					
Binge drinking	1.4 [0.51, 4.04]		1.6 [0.42, 5.74]		0.4 [0.06, 2.76]		4.5 [0.87, 23.00]	+
Marijuana use	0.3 [0.08, 0.81]	*	0.3 [0.06, 1.02]	+	0.1 [0.02, 0.44]	**	0.3 [0.04, 2.67]	
Drug use	1.8 [0.26, 12.87]		3.9 [0.53, 27.96]		0.7 [0.06, 8.50]		8.6 [1.24, 60.14]	*
Substance use			Hispanic women (n = 486)					
Binge drinking	0.8 [0.25, 2.48]		1.6 [0.46, 5.79]		1.4 [0.28, 7.23]		4.2 [1.13, 15.49]	*
Marijuana use	0.6 [0.19, 1.80]		1.3 [0.30, 5.27]		0.3 [0.04, 1.78]		0.7 [0.06, 6.92]	
Drug use	1.7 [0.46, 5.97]		6.2 [1.65, 23.28]	**	1.3 [0.16, 10.24]		4.3 [0.95, 19.97]	+

Note. T1 is from Wave III Add Health (2001–2002) and T2 is from Wave IV Add Health (2007–2008); Models control forage, married, education, employment, personal income, and corresponding T1 IPV (i.e., minor, major, rape/coersion, and injury). IPV = intimate partner violence; OR = odds ratio; CI = confidence interval.

+ $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.