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Intimate partner violence and consistent condom use among drug-using heterosexual women in New York City

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Abstract

The present study examined the associations of relationship factors, partner violence, relationship power, and condom-use related factors with condom use with a main male partner among drug-using women. Over two visits, 244 heterosexual drug-using women completed a cross-sectional survey. Multivariate logistic regression models indicated that women who expected positive outcomes and perceived lower condom-use barriers were more likely to report condom use with their intimate partners. The findings suggest that future interventions aiming at reducing HIV risk among drug-using women should focus on women's subjective appraisals of risks based on key relationship factors in addition to the occurrence of partner violence.

Keywords

Partner violence; condom use; heterosexual women; HIV; intimate relationship; drugs

Recent reports from the Centers for Disease Control and Prevention have highlighted the role of heterosexual transmission in the spread of HIV infection among women (CDC, 2008) and underscored the vital role of the male condom in prevention of HIV and other sexually transmitted infections (CDC, 2009). Researchers have underscored heterosexual drug-using

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women's heightened risk for HIV (Prendergast, Urada, & Podus, 2000). Findings from past studies have highlighted the linkages between substance use, risky sexual behavior and high rates of unprotected sex, particularly among African American women (McCoy & Inciardi, 1993; Roberts, Wechsberg, & Zule, 2003; Sterk, 1999; Wechsberg, Dennis, & Stevens, 1998). Specifically, high rates of risky behavior and unprotected sex have been found among cocaine users (Booth, Kwaitkowski, & Chitwood, 2000; Rees, Saitz, Horton, & Samet, 2001) and also among women in methadone maintenance programs (Gilbert, El-Bassel, Schilling, & Friedman, 1997). Studies have also identified women's risk from HIV acquisition from their main partners (O'Leary, 2000) and highlighted women's reports of main partner's resistance to male condom use, the partner's drug use (Perrino, Fernandez, Bowen & Arheart, 2005), and women's dependence on their main partners for drugs, protection, emotional needs, shelter, and financial needs (Lauby, Semaan, O'Connell, Person, & Vogel, 2001) as important barriers to adoption of safe sex behaviors among women. Given the difficulties women face in changing sexual behaviors in long-term relationships, it is important to gain a better understanding of the nature of intimate relationships among those using drugs and the context of drug use and interdependence (Sherman and Latkin, 2001).

Relationship dynamics and the contexts of condom use are critical in understanding women's abilities to stay safe. Persistent power imbalances often limit women's abilities and willingness to engage in effective sexual negotiation (Teitelman, Ratcliffe, Dichter, & Sullivan, 2008) and place them at higher risk for infection. Recent research points to the intersection of HIV and partner violence, suggesting that HIV infection is an important risk factor and potential consequence of violence against women (Campbell, Moracco & Saltzman, 2000; El-Bassel, Gilbert, Rajah, Foleno & Frye, 2000). Studies in the past have also linked partner violence and unprotected sex (Frye, et al., 2007; Johnson, Cunningham-Williams, & Cottler, 2003; Kapadia, et al., 2007; Teitelman, et al., 2008; Wingood & DiClemente, 2000). Often, women in abusive relationships are unable to negotiate safe sex with their partners due to low perceived self-efficacy and confidence (Wingood & DiClemente, 2000), perceived lack of power and control (Amaro & Raj, 2000; O'Leary & Jemmott, 1995), and fear of violence (Amaro, 1995; Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002) and retaliation (Champion, et al., 2004). Women in intimate relationships with risky partners could experience greater stress and conflict possibly resulting in abuse (Van der Straten, King, Grinstead, Serufilira, & Allen, 1995). Additionally, women who are more invested in primary, stable relationships (Saul, Norris, Bartholow, Dixon, Peters, & Moore, 2000) and those who accord intimate relationships as critical to their personal well-being are less likely to negotiate condoms with their partners. Past research has also emphasized the role of normative beliefs and outcome expectancies as significant predictors of intention to use condoms (Bowen, Williams, McCoy, & McCoy, 2001).

Furthermore, research has also identified several other relationship factors that may impact women's diminished abilities to negotiate condom use including fear of being accused of implying lack of trust in partners (El-Bassel, et al., 2000; Gilbert, et al., 2000), indications of women's own infidelity (El-Bassel, et al., 2000), lack/low levels of sexual communication (Catania, et al., 1992; Quina, et al., 2000, Wingood & DiClemente, 1998), decision making regarding children and family size (Bankole & Singh, 1998)and adverse mental health consequences of partner violence including psychological distress and depressive symptoms (DiClemente, et al., 2001; Koblin, et al., 2008).

Recent evidence points to the association between women's experiences of childhood sexual abuse and HIV risk, specifically unprotected sex among women in methadone treatment (Cohen, Tross, Pavlicova, Hu, Campbell, & Nunes, 2009). Additionally, while studies in the past have found an association between depression and women's drug-related HIV risk behaviors (El-Bassel, Simoni, Cooper, Gilber, & Schilling, 2001; Latkin & Mandell, 1993;

Sterk, Theall, & Elifson, 2006), recent evidence has highlighted the direct influence of depression on risky behaviors through its impact on women's attitudes towards condom use (Klein, Elifson, & Sterk, 2008). Limited social and economic resources, especially in the case of women on public assistance and with low educational resources, have been found significantly less likely to use condoms compared to women who are employed (Lauby, et al., 2001; Wingood & DiClemente, 1998).

Most studies have examined the individual or personal, drug use or condom use-related factors' associations with consistent condom use among women. However, very few recent studies have examined all of these factors, relationship, personal and condom use-related, among a sample of drug-using urban women. Researchers have called for more in-depth research into the perceived barriers to safe sex behaviors, including condom use among women with main male partners (Perrino, et al, 2005), and emphasized the need to better understand the contextual factors that affect women's safe sex practices (Roberts, Wechsberg, Zule, & Burroughs, 2003).

The purpose of the current study was to identify the associations between relationship factors, specifically intimate partner violence (IPV) and relationship power, and condom-use related factors, with condom use with a main male partner among drug-using women. We hypothesized that women who experienced 'physical IPV' and 'sexual violence' would be less likely to use condoms. Further, women who perceived both lesser relationship power and more barriers to condom use would be less likely to report condom use in the past month. Finally, we hypothesized that women who had positive condom-use outcome expectancies would be more likely to report consistent condom use.

METHODS

Sample and Recruitment

The Inner-City Mental Health Study Predicting HIV/AIDS and Other Drug Transitions (IMPACT) studies were designed to examine features of the social and physical urban environment in relation to mental health, HIV prevalence and risky sexual and drug use behaviors. IMPACT implemented venue-based sampling of 38 New York City neighborhoods to target economically disadvantaged as well as racially and ethnically diverse neighborhoods in Manhattan (East and Central Harlem, Chelsea, the Lower East Side), Brooklyn (Bushwick, Bedford–Stuyvesant), the Bronx (South Bronx, Tremont, Hunts Point),and Queens (Corona, Jamaica, Long Island City, Far Rockaway). After selection of NYC community districts, an ethnographer conducted further examination of neighborhood boundaries. One of the objectives of the IMPACT study design was to include neighborhoods with a range of environmental characteristics (Weiss, et al., 2007). Project staff systematically recruited a sample of drug users and non-drug users in the target neighborhoods by using random street-intercept techniques (Miller, et al., 1997). Trained outreach workers walked clockwise around each block in the target neighborhoods using hand counters and clicking each time they passed an individual (Ompad, et al, 2008). The workers approached every fifth person that passed using a prepared script that explained the study and invited people to be screened for eligibility during the day from Monday through Friday; people who approached the study storefront were also screened and details of whether the workers approached potential respondents or vice-versa were also noted (Ompad, et al., 2008). Participants had to meet the following criteria: 18 years or older, lived or spent at least half their time in a target neighborhood, and were willing to give a blood sample.

Additionally, an in-person screener that was specifically developed for the IMPACT study based on those from earlier studies (Fuller, et al., 2001; Ompad, et al., 2004; Vlahov, et al, 1991) was administered by trained staff to those willing to be screened, which took

approximately 10 minutes. The screener assessed participants' positive drug use and included specific questions about 'injection drug use' (injected crack, heroin, cocaine or combination at least once in the last 3 months); 'non-injection drug use' (never injected drugs in lifetime, but sniffed or smoked heroin, crack, cocaine, methamphetamine at least once in the last 3 months); 'former users' (lifetime use of heroin, crack, cocaine or methamphetamine, but not in the last 3 months); 'non-drug users' (no lifetime use of any drugs except marijuana and alcohol); and an overlapping category comprising injection and non-injection drug users, 'club drug users' (used LSD, PCP, ecstasy, ketamine, GHB, or rohypnol at least once in the last 3 months). A total of 2395 respondents were screened, of whom 74% (1772) were eligible to participate in the study, 25.6% (613) were ineligible, and 0.4% (10 individuals) refused to participate. After screening participants and administering a written informed consent, a cross-sectional survey was administered by trained interviewers and conducted over two separate visits. After the completion of the interview, state certified HIV counselors counseled participants on Hepatitis B Virus,, Hepatitis C Virus, sexually transmitted diseases, and HIV; and a blood specimen was drawn for serologic testing on the first day. The study and the protocol, especially that of screening without written consent were approved by the institutional review board at the New York Academy of Medicine.

The sub-sample drawn for the current study were drug-using women who reported being in a heterosexual relationship currently or in the past year. The majority of the sub-sample comprised non-injection drug users (48.8%), followed by former drug users (20.5%), injection drug users (16.8%), non-drug users (13.9%), and club drug users (9%) (who also fell into any of the above mentioned categories so that the prior categories sum to 100%).

Measures

Experiences of partner violence—The Revised Conflict Tactics Scale (CTS2) (Straus, et al., 1996) was used to measure intimate partner violence (IPV) (physical assault and injury) experiences of women in the current study in the past year. IPV experiences included moderate and severe forms of physical as well as injurious violence. Specifically, the questions on physical assault ranged from whether their partners threw something at them that could hurt, twisted their arm or hair, to kicked/punched/choked/beat/burned them, as well as if their partner had ever used a knife/gun on them. Questions on injurious IPV included those that assessed experiences of sprains/bruises/cuts/physical pain/broken bones because of fights with the partner, or passing out because of being hit on the head and seeking medical help. Experience of IPV (physical assault and injury) was coded as a binary variable; 0= no IPV and 1=experience of IPV. The sexual violence sub-scale of the CTS2 was used to assess women's experiences of 'sexual violence' from intimate partners in the past year and coded as a separate binary variable. Questions included experiences of threats from partner to have sex, threats to have oral/anal sex and use of force (hitting/holding down/using a weapon) to have sex. The Cronbach's alpha of the CTS2 for the study was 0.88.

Childhood sexual abuse—Experiences of child sexual abuse were assessed using 7 questions from El-Bassel, et al., (2003) scale that ranged from experiences of touching, masturbation, attempts to have sex and experiences of oral and anal sex.

Childhood physical abuse—Childhood physical abuse was assessed using two questions taken from El-Bassel, et al.'s (2003) scale that examined experiences ranging from being punched, pushed, hit, bit, shoved, kicked, whipped, beaten, choked, strangled or threatened with weapons by parents/caretaker/guardian during childhood.

Access to resources—Eighteen items from Dunst & Hope's (1987) original 30 items were used to assess the adequacy of a range of current resources. Questions ranged from resources

for food, housing, telephone, to employment and transportation issues, to health care issues, and adequate financial resources for entertainment, home and personal expenses. Responses ranged from '0= never adequate' to '5= always adequate', with higher scores indicating higher adequacy of resources. The Cronbach's alpha for this study was 0.90.

Anxiety and depressive symptoms—Harvey, Greenberg, and Serper's (1989) 7-item Affective Lability Scale was used to measure anxiety and depressive symptoms. Responses ranged from 'strongly agree' to 'strongly disagree', and scores ranged from 1–5, with lower scores indicating higher affective lability. The Cronbach's alpha of the scale for this study was 0.88.

Relationship factors—Several components of the nature of intimate relationship were also assessed, including age of partner, length of the relationship and perceived sexual fidelity of partner. Further, 5 items from Pulerwitz, et al.'s (2000) original 8-item Relationship Power Scale were used to assess 'relationship dominance.' Specifically, the power dynamics in the respondents' relationship with their main male partner were assessed, with higher scores indicating higher power for the respondent. The Cronbach's alpha of this scale for the current sample was 0.78.

Condom-use related factors included questions on whether the partner wanted pregnancy, as well as outcomes, barriers and decision making processes in condom use. DiIorio, Maibach, O'Leary, Sanderson, & Celentano's (1997) 8-item 'condom use outcome' scale was used to measure expectancies; the Cronbach's alpha for the scale was 0.82. On a 5-point scale, the responses ranged from '1= Strongly agree' to '5= Strongly disagree', with higher scores denoting more positive expected outcomes. 'Condom-use barriers' were assessed using the 4-item Sexual Relationship Scale (Bradford & Beck, 1991), responses ranged from '1= absolutely sure I cannot' to '4 = absolutely sure I can', with lower scores denoting more barriers for respondents; the Cronbach's alpha for this study was 0.91. Pulerwitz et al's., (2000) 15-item scale was used to assess condom-use decision making. Responses ranged from 1= Strongly agree to 4=Strongly disagree, with higher scores denoting higher decision-making power for the participants.The Cronbach's alpha for this study was 0.90. The condom-use sub-scale scores were grouped into tertiles based on the distribution of the continuous scores for analysis purposes.

Consistent condom use—The main outcome for the study was self-reported condom use as a binary variable. Condom use was computed as the proportion of times that a male condom was used during vaginal and/or anal sex. The proportion was converted to a dichotomous variable such that condom use was defined as 100% of the time in the past month, and the absence of condom use was defined as less than 100% of the time in the past month.

Additional survey items included socio-demographics, including age, race/ethnicity, education, income, place of birth, length of time living in the US, incarceration ever in lifetime, HIV status of participant/sexual partner and perceived STD status of partner, and the type/frequency/duration of drug and alcohol use of respondents in the past 6 months.

Data Analysis

Condom use in the past month was the main outcome variable in the current study. For analysis purposes, condom use referencing the female condom was excluded because the overwhelming majority of the participants reported male condom use. Thus, meaningful comparisons between male and female condom use could not be assessed. Listwise deletion was implemented for items with missing data, yielding a final sample of 244 for the current study. Bivariate relations were assessed using χ^2 tests for categorical variables and *t*-tests for continuous variables.

Correlates of IPV were tested and bivariate tests of association were also used to identify potential confounders; only those with a p value of less than 0.1 were included in multivariate models. Multicollinearity was examined using correlation matrices and variance inflation factors (VIF) of the explanatory variables, and none of the factors planned to be included in the models (condom outcome expectancies, barriers and decision-making, access to resources, depressive symptoms, age of partner, length of time with partner) had VIF greater than 10. For the correlation matrix, the correlations did not exceed 35% for all explanatory variables except self-reported HIV status and partner's HIV status, which had a correlation coefficient of 47% ($p< 0.001$). Likelihood ratio tests were used to assess best-fit models.

Multivariable logistic regression models with maximum likelihood estimation were used to test the relation between IPV (physical and injurious assault) in the past year, sexual violence in the past year, relationship factors, condom-use related factors and 100% condom use with main male partner. Models were run with the following variables that met the $p<0.1$ criterion included as relevant confounders: socio-demographics (age, income, US born), anxiety and depressive symptoms, and self-reported HIV status. Additionally, variables that were associated with IPV, but not condom use, that were identified in past research as particularly significant in women's decisions to use condoms, such as anxiety and depressive symptoms (Klein, et al., 2008; Koblin, et al., 2008); sexual violence (Frye, et al., 2007); sexual fidelity (El-Bassel, et al., 2000) and relationship dominance (Teitelman, et al., 2008) were also included in the regression models. Multiple logistic regression models were run and likelihood ratio tests were used to determine fit of the models 'recent' IPV (IPV in the past year). Finally, interactions between IPV, sexual violence, condom-use related variables, relationship dominance and condom use were examined, although none were found to be statistically significant. All statistical tests were two-tailed with an $\alpha=0.05$ unless otherwise specified and all analyses were conducted with SAS 9.2 (SAS Institute Cary, North Carolina).

RESULTS

Sample Characteristics

Over half (54.9%) of the women in the current sample were Black, an additional 31.2% were Hispanic; with these being mutually exclusive racial/ethnic groups. The mean age of the sample was 38.9 years (SD =9.7) (Table 1); almost half (47.5%) had some High School education or less.

A significant majority of the study sample (60.7%) was on public assistance, 73.8% had been incarcerated over the lifetime, and the majority (84%) was US born. The mean score of current access to resources for respondents in the study was low at 3.40 (SD=1.02, Range: 0.40–5, higher scores indicated higher access to resources) (Table 1). The majority of the respondents (92.6%) reported using marijuana, followed by cocaine (82.4%), alcohol (80.7%), crack (70.5%), and heroin (56.6%) in the past 6 months. Eighteen respondents (8.0%) reported being HIV positive. The mean age of respondents' current male sexual partners was 41.9 years (SD=10.9), and the average length of current intimate relationship was 7.2 years (SD=7.4).

Anxiety and depressive symptoms

Almost half of the participants (45.9%) reported feelings of anxiety and depressive symptoms in the past 6 months, with a mean score of 2.57 (SD = 0.89, Range: 1–5, with lower scores indicating higher affective lability) (Table 1).

Experiences of abuse

Over one-quarter (29.1%) of the participants reported child physical abuse and over a third (38.3%) reported sexual abuse during their childhood (Table 1). A third (33.2%) reported

experiencing 'physical and injurious IPV' in the past year. Further, thirteen women (5.3%) reported experiencing 'sexual violence' in the past year.

Intimate relationship characteristics and Condom use and related factors

Overall, 21% of participants reported consistent condom use in the past month. About a quarter (23.8%) of the women perceived that their partners were unfaithful; about 5% perceived their partners as HIV positive and 7% perceived that their partners were suffering from a sexually transmitted disease (STD) (Table 2). The majority of the respondents (74.2%) reported that their partners wanted pregnancy. The mean scores on 'relationship dominance' ranged from 0 to 2 with a median score of 1 (mean= 1.05, SD=0.4; scale 0–2, higher scores denoting higher power). On the other hand, the mean score on 'condom-use expectancies' was 3.63 (SD=0.77), and the mean scores ranged from 1.5 to 5 (scale 1–5, higher scores indicated better outcome expectancies). The mean scores on 'condom-use barriers' ranged from 1 to 4 with a median score of 3 (mean=2.83, SD=0.83; scale of 1–4, lower scores indicating higher barriers). Finally, the mean score on 'condom-use decision making' was 2.93 (SD=0.52), with scores ranging from 1.4 to 4 (scale 1–4, higher scores indicating higher power in decision-making).

Bivariate associations Two sets of bivariate analyses were undertaken; the first examined associations of key variables with IPV and the second examined relationships of key variables with report of condom use. None of the socio-demographic factors except age was significantly associated with women's experiences of physical IPV (Table 1). Further, women who had access to minimal resources, were HIV negative, and had lower anxiety and depressive symptom scores were more likely to report experiencing IPV in the past year. Also, other than alcohol and marijuana use in the past 6 months, no other drug use was significantly associated with respondents' experiences of IPV in the past year (data not shown). Significantly, more women who experienced physical and injurious IPV also experienced sexual violence by their intimate partners in the past year (5.1%). Further, women whose partners were younger, and those who suspected their partners of infidelity were more likely to report IPV. Several relationship factors and most condom uses-related factors were associated with reports of IPV among the respondents in the current study (Table 2). Women whose partners desired pregnancy were more likely to report experiencing IPV in the past year. Women who experienced IPV in the past year also had lower scores on condom use expectancies and decision making compared to those who did not ($p<.05$).

Results from additional bivariate analyses revealed that those who experienced IPV in the past year reported a lower proportion of condom use compared to those who did not experience recent IPV ($p <0.05$). Further, relatively shorter relationship lengths and partner's positive HIV status were both significantly associated with consistent condom usage among women in the current study. Condom use expectancies and condom use barriers scores were both significantly higher for those that reported condom use compared to those who did not report condom use.

Multivariate analyses

In unadjusted models, those who did not experience IPV were more than twice as likely to report always using condoms (Odds Ratio: OR=2.39, 95% Confidence Interval: CI=1.13–5.05) (Table 3). The variables that were associated with both condom use and IPV, at a $p \leq 0.1$ were included in the final model, along with demographic variables (age, income, US born), self-reported HIV status. Additionally, variables that were identified in earlier research as critical to condom use decisions among women with intimate partners such as relationship factors, condom use related factors, IPV, and sexual violence were also included in the final model. In adjusted models, though the direction and magnitude of the effect was similar to that in the unadjusted, IPV was not significantly associated with condom use (OR=1.22, 95% CI=0.35-

4.29), nor was sexual violence (OR= 0.37, 95% CI= 0.03- 4.63) (Table 3). Age was significantly associated with condom use, with younger women less likely to exhibit condom use as compared to older women. Specifically, women who were aged 18–30 years and 41–46 years were less likely to use condoms compared to those who were 47 years and older (OR=0.08, 95% CI= 0.01, 0.69 and OR= 0.16, 95% CI= 0.04–0.67 respectively). Further, women who reported HIV- negative status were less likely to report condom use compared to those who self-reported being HIV positive (OR = 0.07, 95% CI = 0.02- 0.21). Two condom use- related factors (condom use expectancies and condom use barriers) that were grouped into low, medium, high categories were also significantly related to condom use. Women with Condom Use Expectancies in the 'high' category (> 3.75) were nearly 20 times more likely to report consistent condom use as compared to those in the 'low' category (scores 1.5–3.25) (OR=19.77, 95% CI=2.93, 133.58). Similarly, barriers in the 'high' category (> 3.0) were over 7 times more likely to report consistent condom use as compared to those in the 'low' category (≤ 2.75) (OR=7.19, 95% CI=1.62, 31.84)

DISCUSSION

This study examined the roles of partner violence, relationship factors and condom-use related factors on decision-making regarding condom usage in intimate relationships among drug-using women. Contrary to our expectations, findings from the current study indicated that while a significant proportion of women experienced IPV, experiences of abuse were not associated with decision to use condoms unlike earlier studies (El-Bassel, et al., 2000; Wingood & DiClemente, 1997). Also, unexpectedly, relationship power was also not significantly associated with condom use contrary to findings in earlier research (Pulerwitz, et al., 2002). However, our hypotheses that envisaging positive outcomes and perceptions of lower barriers would be related to consistent condom use with intimate partners were fully supported as in earlier research (Bowen, et al., 2001). However, unlike earlier studies (Lauby, et al., 2001), low access to resources for respondents was not associated with consistent condom use in the current study.

A possible explanation for these findings may be the stability provided by intimate primary partners which may be very desirable for drug-using women, despite experiences of IPV. Results suggest that women may perceive that the benefits of intimate partnerships outweigh the risks of condom negotiation with their primary partners, pointing to the multi-faceted and complex nature of intimate relationships. Requests for condom use may be interpreted by women's partners as important signs of infidelity or accusations of unfaithfulness on the part of the sexual partners (Amaro, 1995; El-Bassel, et al., 2000) especially in the context of the finding that women who did not report positive HIV status were less likely to use condoms, who may have perceived lower risk and thus been unwilling to change the status quo in intimate relationships. The finding that older age was significantly related to consistent condom use compared to younger women as in earlier studies (Bowen, et al., 2001), also needs to be viewed in the light of family planning needs, partner's desire for pregnancy and relationship dominance issues.

One of the major limitations of the current study was the non-random sample, which may not represent the larger drug-using female population of New York City; hence, the findings may have limited generalizability. Additionally, the nature of the data, i.e. self-report, may be subject to recall bias, social acceptability and possible under-reporting, possibly affecting the association between variables. Further, incorporating data from women's sexual partners could have strengthened the data, as would measures on couple communication and details of methods of problem solving within relationships. Also, the cross-sectional design did not permit the assessment of the temporal relations of independent and dependent variables in the models. However, the limitations notwithstanding, the current study used a non-clinical, street-

based sample that incorporated the heterogeneity of the female drug-using population in New York City.

Implications for interventions

Despite the limitations mentioned above, this study has important implications for future interventions with heterosexual women. The high prevalence of recent IPV reported by women in this street-based sample highlights the importance of screening, safety planning and service provision for women in not only substance-abuse treatment, but in all health-care settings. As in earlier studies (El-Bassel, et al., 2001; El-Bassel, et al., 2005; Herman, 1992), this study also found the overlapping problems of childhood experiences of abuse in addition to IPV among drug-using women in addition to anxiety and depression. Health care practitioners would need to gain an in-depth understanding of the varied factors that impinge on women's abilities to use condoms, given their complex experiences.

The finding that older age was associated with reports of consistent condom use suggests that future interventions that focus on urban populations should focus more on younger women in particular. Given that outcome expectancies were significantly related to condom use in the current study, strategies to enhance positive outcome expectancies (Bowen, et al., 2001) may be vital when planning future interventions with drug-using women. Findings from the current study also underscore the importance of recognizing the role of contextual as well as relationship-based factors that influence condom use making decisions and risk behaviors of drug-using women. Future interventions with heterosexual drug-using women can be built on these findings to promote condom use and reduce HIV risk behaviors. Awareness of possible power imbalances, women's perceptions of possible negative consequences of condom negotiations, and women's subjective appraisals about their risks may be vital when planning interventions for HIV/STI prevention with drug-using women in intimate relationships.

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Table 1

Bivariate relations of Participant Characteristics with Experiences of IPV and Condom Use

	Total N (%)	IPV in the Past Year		Condom Use	
		Yes %	No %	No %	Yes%
Total	244 (100.0)	33%	67%	79%	21%
Socio-demographics					
Age: Mean (SD), years	38.9 (9.7)	36.4** (9.8)	40.1 (9.4)	38.5 (9.4)	40.3 (10.7)
Age Categories, years					
18–30	54 (22.1)	48.2 *	51.8	81.5	18.5
31–40	68 (27.9)	35.3*	64.7	82.3	17.7
41–46	64 (26.2)	29.7*	70.3	84.4	15.6
47+	58 (23.7)	20.7	79.3	67.2	32.8
Race/Ethnicity					
Hispanic	76 (31.2)	32.9	67.1	81.6	18.4
Black	134 (54.9)	32.1	67.9	79.1	20.9
All Other	34 (13.9)	38.2	61.8	73.5	26.5
HIV Status (self reported)					
Yes	18 (8.0)	11.1*	88.9	27.8	72.2***
No	207 (92.0)	35.3	64.7	84.5	15.5
Access to Resources:					
Mean (SD)	3.40 (1.02)	3.20 (0.96)*	3.50 (1.06)	3.36 (1.00)	3.56 (1.12)
Range	0.4–5	0.6–4.9	0.4–5	0.4–5	0.8–5
Alcohol (past year) and Drug Use(past 6 months)					
Alcohol Use					
Yes	197 (80.7)	21.3*	78.7	80.2	19.8
No	47 (19.3)	36.0	64.0	74.5	25.5
Marijuana Use					
Yes	226 (92.6)	34.5*	65.5	79.2	20.8
No	18 (7.4)	16.7	83.3	80.0	20.0

	Total N (%)	IPV in the Past Year		Condom Use	
		Yes %	No %	No %	Yes%
Psycho-Social Factors Anxiety/Depression					
≤2.57	111 (45.9)	63.8***	37.0	41.2	47.1
>2.57	131 (54.1)	36.3	63.0	58.8	52.9
Range	1–5	1–4.7	1–5	1–5	1.1–5
Childhood and Adult Victimization					
Child Sexual Abuse					
Yes	96 (38.3)	42.7*	57.3	79.2	20.8
No	148 (61.7)	27.0	73.0	79.1	20.9
Child Physical Abuse					
Yes	71 (29.1)	46.5*	53.5	77.5	22.5
No	173 (70.9)	27.8	72.2	79.8	20.2
Sexual Violence (Past Year)					
Yes	13 (5.3)	100.0 ***	0	92.3	7.7
No	231 (94.7)	29.4	70.6	78.3	21.7
IPV in Past Year					
Yes	81 (33.2)	-		87.6	12.4*
No	163 (66.8)	-		74.8	25.2

NOTE: *p< .05

** p<0.01

*** p<0.001

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Table 2

Bivariate Associations of Relationship Factors and Condom Use Related Factors with IPV and Condom Use.

	Total N	IPV in the Past Year		Condom Use	
	(%)	Yes (%)	No (%)	No (%)	Yes (%)
Total	244	33%	67%	79%	21%
Partner/Relationship Factors					
Age of partner (Mean SD), years	41.9 (10.9)	39.2 (10.7)**	43.3 (10.7)	42.0 (11.2)	41.6 (9.5)
Length of time with partner: Mean (SD), years	7.2 (7.4)	6.3 (6.1)	7.6 (7.9)	7.7 (7.5)	5.1* (6.5)
Perceived STD Status					
Yes	17 (7.0)	41.2	58.8	82.4	17.7
No	227 (93.0)	32.6	67.4	78.9	21.2
Partner's HIV Status					
Positive	12 (4.9)	16.7	83.3	25.0	75.0***
Negative	232 (95.1)	34.0	66.0	81.9	18.1
Perceived Sexual Fidelity					
Yes	58 (23.8)	50.0**	50.0	75.9	24.1
No	186 (76.2)	28.0	72.0	80.1	19.9
Relationship Dominance : Mean (SD)	1.05 (0.4)	1.03 (0.5)	1.06 (0.4)	1.04 (0.4)	1.12 (0.3)
Range	0–2	0–2	0–2	0–2	0.2–2
Condom Use Related Factors					
Partner Wants Pregnancy					
Yes	181 (74.2)	38.7 **	61.3	86.2	13.8
No	63 (25.8)	17.5	82.5	58.7	41.3
Condom Use Expectancies	3.63 (0.77)	3.38 (0.82)***	3.76 (0.72)	3.50 (0.77)	4.14*** (0.55)
Range	1.5–5	1.6–5	1.5–5	1.5–5	2.5–5
Condom Use Barriers	2.83 (0.83)	2.68*(0.88)	2.91 (0.80)	2.70 (0.83)	3.35*** (0.65)

	Total N	IPV in the Past Year		Condom Use	
	(%)	Yes (%)	No (%)	No (%)	Yes (%)
Range	1–4	1–4	1–4	1–4	1.3–4
Condom Use Decision-Making	2.93 (0.52)	2.67 (0.54)***	3.06 (0.46)	2.91 (0.52)	3.04 (0.49)
Range	1.4–4	1.4–3.8	2.1–4	1.4–4	2.5–5

NOTE: *p< .05,

** p<0.01,

*** p<0.001

Table 3

Logistic Regression Models of Consistent Condom Use

Variable	Unadjusted Model Odds Ratio (95% CI)	Adjusted Model Odds Ratio (95% CI)
Age (in years)		
18–30	0.47 (0.19,1.12)	0.08* (0.01,0.69)
31–40	0.44 (0.19,1.01)	0.28 (0.06, 1.26)
41–46	0.38 (0.16, 0.91)	0.16* (0.04,0.67)
47+	1.00	1.00
Self-Reported HIV		
Yes	1.00	1.00
No	0.07*** (0.02,0.21)	0.06*** (0.01,0.31)
Anxiety & Depressive symptoms score, range: 1–5†		
≤ 2.57	1.00	1.00
> 2.57	1.27 (0.68, 2.38)	1.33 (0.49, 3.61)
Condom Use related factors		
Partner wants pregnancy		
Yes	1.00	1.00
No	4.39 (2.28, 8.45)	0.98 (0.34, 2.82)
Condom use expectancies, range: 1–5		
1.5 – 3.25 (low)	1.00	1.00
>3.25 – 3.75 (medium)	7.20 (1.51, 34.28)	3.86 (0.50, 30.15)
>3.75 (high)	19.78 (4.60, 85.00)	19.77** (2.93, 133.58)
Condom use barriers, range: 1–4		
<2.75	1.00	1.00
>2.75 – 3.0	4.78 (1.69, 13.56)	3.66 (0.81, 16.42)
>3.0	11.07 (3.99, 30.69)	7.19 ** (1.62, 31.84)
Condom use decision making, range: 1.4–4		
1.4 – 2.7	1.00	1.00
>2.7 – 3.0	2.27 (0.96, 5.41)	1.02 (0.23, 4.44)
>3.0	2.14 (0.86, 5.30)	0.32 (0.06, 1.63)
Relationship factors		
Age of partner	1.00 (0.97–1.03)	0.96 (0.91, 1.02)
Length of time with partner		
≤3 years	2.39 (1.01, 5.18)	3.04 (0.86, 10.75)
>3 – 7.02	1.60 (0.66, 3.86)	1.50 (0.37, 6.09)
>7.02	1.00	1.00
Sexual fidelity		
Yes	1.00	1.00
No	0.78 (0.39, 1.57)	0.65 (0.21, 2.03)

Variable	Unadjusted Model Odds Ratio (95% CI)	Adjusted Model Odds Ratio (95% CI)
Relationship Dominance, range: 0–2		
0–1	1.00	1.00
1	1.75 (0.69–4.41)	1.39 (0.32–5.96)
>1	2.18 (0.86–5.52)	1.59 (0.37–6.84)
IPV		
Yes	1.00	1.00
No	2.39 (1.13, 5.05)	1.22 (0.35, 4.29)
Sexual Violence		
Yes	1.00	1.00
No	3.31 (0.42, 26.1)	0.31 (0.02, 4.45)

NOTE:
Adjusted for income, US born, anxiety/depression, self-reported HIV.

* p< .05

** p<0.01

*** p<0.001

† Total possible score: 5