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## Fear of Violent Consequences and Condom Use among Women Attending a STD Clinic

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### Abstract

Intimate partner violence (IPV) has been associated with risk for HIV infection. This cross-sectional study tested the hypothesis that fear of violent consequences when negotiating condom use mediated the relation between IPV and condom use. Participants ( $n = 478$ ) were recruited between March 1, 2004 and June 30, 2006 from a public clinic that treats sexually transmitted diseases in upstate New York as part of a randomized controlled trial. They completed an audio, computer-assisted, self-administered questionnaire with items on risky sexual behavior, intimate relationships, and related covariates and confounding variables. Seventeen percent of the sample reported IPV in the past 3 months. Recent IPV was associated with fear of violent consequences to requests for condom use, and such fear was associated with inconsistent condom use. Women who reported IPV also reported greater difficulties in negotiating safer sex behaviors with their abusers. So fear of violent consequences appeared to hinder their ability to protect themselves against HIV infection. The results were consistent with fear of violent consequences mediating the relationship between IPV and condom use. Health care providers involved in HIV prevention and sexual risk reduction interventions need to address IPV and, more specifically, fear of IPV when negotiating safer sex as part of their services for providing more comprehensive care to the women they serve.

### Keywords

partner abuse; HIV/AIDS; sexually transmitted infection

### Introduction

Women are increasingly being infected with sexually transmitted diseases (STDs) and HIV in the United States (U.S.) (Centers for Disease Control and Prevention 2010). Domestically, women account for 27% of new annual HIV infections and 25% of those living with HIV (Centers for Disease Control and Prevention 2010). Heterosexual transmission accounts for 83% of new infections among women (Centers for Disease Control and Prevention 2008).

A recent national study attributed 12% of HIV/AIDS infections among women to relationships involving intimate partner violence (IPV) (Sareen, Pagura, and Grant 2009), a serious problem in the U.S. Approximately 1 in 3 U.S. women have experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime (Black et al. 2011).

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Further, in 2007, IPV resulted in 1638 deaths among U.S. women (Department of Justice Bureau of Justice Statistics 2011).

Male perpetrated IPV plays an important role in the acquisition of HIV and other STDs among heterosexual women (Wyatt et al. 2002; Machtinger et al. 2012). Considerable research has been aimed at understanding women's risk for HIV and STDs in relation to IPV. IPV is associated with sexual risk behaviors, including a greater number of sexual partners (Howard and Wang 2003; Hess et al. 2012), substance use before sex (Silverman et al. 2011), sex with a drug-injecting partner, and trading money or drugs for sex (Molitor et al. 2000). Empirical research has also linked IPV to inconsistent condom use (Seth et al. 2010; Silverman et al. 2011). Further, researchers have found that abused women are more likely to self-report STDs or be diagnosed with an STD than non-abused women (Champion, Shain, and Piper 2004; Coker et al. 2002; Laughon et al. 2007; Hess et al. 2012).

Although initial behavioral research on HIV risk focused on individual-level factors, researchers have now expanded their models to include relational variables, such as IPV and its impact on women's sexual behavior (Cavanaugh, Hansen, and Sullivan 2010; Enriquez et al. 2010). Researchers agree that IPV affects sexual risk among women, but little is known about the mechanisms by which IPV leads to risky sexual behavior.

Fear of violent consequences to requests for condom use by women is one possible pathway that links IPV to inconsistent condom use among women. Both qualitative and quantitative research has linked IPV to fear of asking intimate partners to use condoms (El-Bassel 2000; Sales et al. 2008; Wingood et al. 2001). In addition, several studies have linked fear of violent consequences to inconsistent condom use (Seth et al. 2010; Silverman et al. 2011). Thus, empirical research suggests that: (a) IPV is associated with fear of violent consequences to requests for condom use; and (b) fear of violent consequences is associated with inconsistent condom use among women.

Even though many studies have focused on the association between IPV and sexual risk behavior among women, few empirical data exist on whether relationship variables, such as fear of violent consequences to requests for condom use, mediate the IPV-sexual risk behavior relationship. After an extensive literature search, we located only one study that investigated adolescent African American female's fear of consequences of condom negotiation as a significant intervening variable of the relation between their experience of lifetime sexual violence and risky sexual behavior (Sales et al. 2008). To our knowledge, no research has specifically investigated fear of violent consequences as a mediator of the IPV—risky sexual behavior relation among other groups of women or among women with different experiences of violence (i.e., physical, emotional, and sexual). Demonstrating such a linkage empirically would confirm previously hypothesized pathways and clinical intuition.

In previous analyses with the current dataset, we investigated individual level mediators of the IPV-risky sexual behavior relation, such as depression and alcohol and drug use (Mittal, Senn, and Carey 2011). The results indicated that IPV was associated with drug use before sex and depressive symptoms but, in mediation models, drug use before sex and depressive symptoms were not associated with risky sexual behavior and thus inconsistent with mediating the IPV-sexual risk relation.<sup>1</sup> This paper builds on our previous work by testing the hypothesis that the relationship between IPV and risky sexual behavior is mediated by

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<sup>1</sup>Similar results were found in analyses with the sample used in the present study, which was restricted to women who reported having a steady partner.

fear of violent consequences to requests for condom use. This research is important because advances in HIV prevention require a more sophisticated understanding of the relationship factors that influence condom use, particularly among women who experience abuse and who may have limited control over condom use decisions.

## Methods

### Participants

Participants were recruited between March 1, 2004 and June 30, 2006 from a STD clinic as part of a randomized controlled trial (RCT) designed to evaluate sexual risk reduction interventions (Carey et al. 2010). Participants were included in the RCT if they were: 18 years or older; willing to participate in a standard clinic visit that involved an HIV test; and currently HIV negative. In addition, they had to have engaged in risky sexual behavior in the last three months (i.e., vaginal or anal intercourse without a condom with: (a) more than one sexual partner; (b) a partner who had other partners, who injected drugs, or who was diagnosed with a STD in the last three months; or (c) a partner who was HIV-positive). Forty eight percent of those screened met the eligibility criteria and 58% of those who were eligible agreed to participate.

A total of 719 women participated in the parent RCT; of these, 562 had a steady male partner in the past three months. Women without a steady male partner were not included in the present analyses because issues related to IPV and fear of violent consequences are likely different in casual sexual relationships. An additional 81 women were excluded because they planned to become pregnant in the next year (which could influence condom use decisions), and three were excluded because they had no data on recent IPV, leaving a sample of 478 women for the present analyses.

### Procedures

All procedures were approved by the Institutional Review Boards of the participating institutions. Patients were called from the waiting room of the STD clinic by a trained research assistant (RA), using their registration number, and escorted to a private room. The RA informed the patients about the study and asked if they were willing to answer a few screening questions to determine their eligibility. Eligible patients who agreed to participate provided written informed consent and their contact information. They also completed a calendar of important events over the last three months to improve their recall when responding to the time-linked questions. Participants then completed an audio computer-assisted self-interview (ACASI) in a private room. ACASIs improve data quality for sensitive topics and reduce literacy barriers to research participation (Schroder, Carey, and Vanable 2003). Participants were reimbursed \$20 for completing the questionnaire.

### Measures

The ACASI assessed demographic characteristics, physical, sexual and emotional IPV (recent and lifetime), fear of violent consequences to requests for condom use, and condom use in the past three months with a steady partner.

### Demographic and background characteristics

Participants reported their age, race/ethnicity, annual income (re-coded as < \$15,000 vs. \$15,000), educational attainment (recoded as high school or less vs. more than high school), employment status (re-coded as employed vs. unemployed), whether they ever traded sex for money or drugs, and the number of sexual partners they had had in their lifetime. They also disclosed the number of sex partners in the past three months along with their gender.

**Independent variable: Intimate partner violence**

Three items assessed recent IPV (adapted from DiIorio, Hartwell, and Hansen 2002; Feldhaus et al. 1997). Participants reported (a) if they had ever been hit, kicked, punched, or otherwise hurt by a sexual partner; (b) if they had ever been pressured or forced to have sexual contact; and (c) if their partner had ever threatened to hurt or kill them, prevented them from leaving or entering their home, seeing friends, making phone calls, having or keeping a job, continuing their education, or seeking medical attention. If a participant responded affirmatively to any of the three questions, she was asked when this had happened most recently (past 3 months, past year, or more than one year ago). If participants indicated that the abuse had occurred in the last 3 months, they were considered to have experienced recent IPV.

**Mediator variable: Fear of violent consequences to requests for condom use**

Six items assessed participants' fear of violent consequences to requests for condom use (adapted from Wingood and DiClemente 1998). Items included: "If I asked my partner to use a condom, he or she would end our relationship;" and "If I asked my partner to use a condom, he or she would hit or hurt me." Response options were: "would do this" (2); "might do this" (1); and "would NOT do this" (0). Participants were asked to respond to these items about their steady partner. Items were averaged to get a scale score for their steady partner; higher scores reflected greater fear of violent consequences. Internal consistency reliability for the current sample was .73.

**Outcome variable: Sexual risk behavior**

We used items developed and tested in previous studies (Carey et al. 1997; Carey et al. 2000; Carey et al. 2004) to assess risky sexual behavior. Participants reported the number of protected and unprotected vaginal (and anal) sex episodes with their steady partner. Responses to these items were summed to determine the total number of episodes of unprotected vaginal and/or anal sex in the past three months with their steady partner (Schroder, Carey, and Vanable 2003; Weinhardt et al. 1998). The number of episodes of unprotected sex with their steady partner was the outcome variable.

**Data Analysis**

Outliers [ $>3 \times$  the interquartile range (IQR) from the 75<sup>th</sup> percentile] were trimmed (to  $3 \times$  IQR from the 75<sup>th</sup> percentile + 1). The number of episodes of unprotected sex with a steady partner was non-normally distributed; these data, therefore, were transformed using a  $\log_{10}$  transformation. Chi square and Analyses of Variance (ANOVAs) were conducted to determine whether demographic or background variables were associated with IPV or with the risky sexual behavior outcome; variables that were associated (at  $p < .05$ ) were included as covariates in subsequent analyses. Analyses of Covariance (ANCOVAs) were conducted to determine whether IPV was associated with fear of violent consequences to requests for condom use and with risky sexual behavior. Multiple regression analyses were conducted to determine whether fear of violent consequences to requests for condom use was associated with risky sexual behavior.

MPlus was used to conduct the main mediation analyses. The mediation model included a main effect of IPV with the risky sexual behavior outcome, as well as an indirect effect of IPV to risky sexual behavior through fear of violent consequences to requests for condom use. Relevant covariates were controlled by including paths from the covariates to the mediator and to the outcome. Following current guidelines for conducting mediation analyses, bootstrapped mediation analysis was conducted with 5000 resamples (Preacher 2008; Williams and MacKinnon 2008). Unlike other approaches to assessing mediation,

bootstrapping does not require a normally distributed sampling distribution of the indirect effect, and therefore provides more appropriate confidence intervals for the estimate of the indirect effect (Hayes, Preacher, and Myers 2011).

## Results

### Characteristics of the study sample

Of the 478 women assessed, the mean age was 29 years ( $SD = 9$ ). Sixty-six percent of the women were African American ( $n = 314$ ), and 23% were Caucasian ( $n = 110$ ). Nearly two-thirds of the sample had a high-school education or less (64%;  $n = 307$ ); 55% were unemployed ( $n = 262$ ); and 67% had an annual income  $< \$15,000$  ( $n = 318$ ). Overall, the sample constituted mostly urban, socioeconomically disadvantaged women. A total of 82 (17%) participants reported IPV in the past three months. Participants reported an average of 25.4 lifetime partners ( $SD = 32.2$ ) and 2.3 partners in the past three months ( $SD = 2.1$ ). They also reported an average of 16.3 episodes of unprotected sex with a steady partner in the past three months ( $SD = 19.2$ ). Thirty percent of the women ( $n = 138$ ) reported ever trading sex for drugs or money. The average response score on the fear of violent consequences measure was 0.4 on a scale ranging from 0 to 2.

Lower annual income, ( $\chi^2(1, N = 477) = 10.08, p < .01$ ), unemployment, ( $\chi^2(1, N = 478) = 15.32, p < .0001$ ), and sex trading, ( $\chi^2(1, N = 467) = 15.50, p < .0001$ ), were associated with IPV. Participants reporting recent IPV were more likely to be very low income ( $< \$15,000$ /year; 82% vs. 64%), be unemployed, (74% vs. 51%) and to report trading sex, (48% vs. 26%), compared to women who did not report recent IPV (Table 1). Annual income, employment and sex trading were thus all controlled in all analyses. IPV was unrelated to race/ethnicity, educational attainment, or age.

Lower educational attainment, ( $F(1, 474) = 4.03, p < .05$ ), sex trading, ( $F(1, 464) = 7.02, p < .01$ ), and older age, ( $F(1, 474) = 5.44, p < .05$ ), were associated with the number of episodes of unprotected sex. More episodes of unprotected sex in the prior three months with a steady partner were reported by participants with a high school education or less ( $Mean = 17.9$  vs. 13.4), participants who traded sex ( $Mean = 21.4$  vs. 14.3), and participants who were older ( $r = .10$ ). These variables were controlled in all relevant analyses.

### Associations between IPV, fear of violent consequences, and sexual risk behavior

After controlling for covariates, recent IPV was associated with fear of violent consequences in response to requests for condom use, ( $F(1, 461) = 23.38, p < .0001$ ). Women who reported recent IPV reported more fear of violent consequences than did women who did not report recent IPV ( $Mean = 0.61$  vs. 0.35). Recent IPV was also associated with a greater number of episodes of unprotected sex with a steady partner in the prior three months, ( $F(1, 458) = 8.03, p < .01$ ); women who reported recent IPV reported more episodes of unprotected sex in the prior three months than those who did not report recent IPV (mean no. episodes = 22.4 vs. 15.0).

Greater fear of violent consequences to requests for condom use was associated with a greater number of episodes of unprotected sex with a steady partner in the past three months, ( $F(1, 461) = 15.57, p < .0001$ ).

### Fear of violent consequences as a mediator of the association between IPV and sexual risk behavior

In the mediation model, we tested whether fear of violent consequences to requests for condom use mediated the relation between IPV and the number of episodes of unprotected

sex with a steady partner in the past three months. IPV was positively related to fear of violent consequences to requests for condom use; fear of violent consequences to requests for condom use was, in turn, positively related to the number of episodes of unprotected sex (Figure 1). The indirect effect from IPV to the number of episodes of unprotected sex through fear of violent consequences to requests for condom use (standardized estimate of the indirect effect = .047) was statistically significant (95% CI of the indirect effect = .012 to .082), indicating that fear of violent consequences to requests for condom use appeared to mediate this relation. IPV was also positively, directly related to the number of episodes of unprotected sex.

## Discussion and Conclusion

Past research has shown that IPV is significantly associated with the risk for STD and HIV infection among women (Bauer et al. 2002; Molitor et al. 2000). The current study provided some indications of the potential underlying mechanism for this association by investigating a relationship-oriented mediator, fear of violent consequences to requests for condom use, of the IPV-sexual risk relation.

Corroborating previous findings, recent IPV was associated with more episodes of unprotected sex with a steady partner in the last three months (Silverman et al. 2011; Wu et al. 2003) and with fear of violent consequences to requests for condom use (Raiford, DiClemente, and Wingood 2009; Seth et al. 2010). Effect sizes for the effect of IPV on fear of violent consequences and for the effect of fear of violent consequences on condom use were small to medium.

Most importantly, the data were consistent with fear mediating the IPV-sexual risk behavior relation. Women who experienced recent IPV were more likely to anticipate a threatening response if they asked their partner to use a condom. This threat of partner violence was, in turn, associated with less condom use.

This important finding highlighted that fear of partner response to requests for condom use appeared to discourage women in abusive relationships from practicing safer sex. For these women, it is possible that the fear of being abused was more imminent and apparently outweighed the fear of a STD or the desire to practice safer sex. The current results, using quantitative methods and a larger sample of women, extend previous research findings (e.g., Wingood et al. 2001; Wingood and DiClemente 1997; El-Bassel 2000) and confirm the important role that IPV plays in HIV risk behavior among women. However, it is noteworthy that the size of the indirect effect was small; in addition, IPV was also directly related to condom use, indicating that fear of violent consequences only partially mediated this relation.

These findings have important implications for HIV and STD prevention. Practitioners and educators should be aware that the context in which abused women must negotiate safer sex behaviors is challenging and requires balancing two health threats (i.e., STD/HIV infection and violence). Teaching abused women assertiveness skills in condom negotiation without being mindful of their relationship context might increase their risk for IPV. Alternative strategies such as frequent testing and treatment of STDs might be considered to prevent more serious consequences of STDs and to reduce risk for HIV due to STD/HIV synergy. Sexual risk reduction interventions with women should include topics such as gender roles, healthy relationships, power, partner-related variables, and development of safety plans to reduce abused women's risk for violence as well as HIV. A recent study conducted by Frye, Ompad, Chan, Koblin, Galea, and Vlahov (2011) on IPV perpetration and condom use-related factors found that men who perpetrated physical IPV were half as likely to report

consistent condom use compared to men who did not perpetrate such violence. Interventions also need to be developed for men and couples with a specific focus on violence prevention.

The strengths of this study included the use of a large and diverse sample of women receiving services from a public health clinic, use of ACASI for data collection, and directly tested mediation using state-of-the-science recommendations (MacKinnon, Fairchild, and Fritz 2007). Limitations included use of a cross-sectional design so that temporal relations could not be assessed, potential for uncontrolled confounding, role of social acceptability in self-report data, and brief measures that did not fully explicate IPV. Further, the fairly low participation rate and sampling from a single setting may have introduced selection and participation biases which limited the representativeness of the sample and thus the generalizability of the results. Lack of use of standard instruments for some variables may have contributed to misclassification, inaccurate information, and the inability to compare these results to those of other studies that used standard instruments. All study participants were recruited from a sexual health clinic and to be eligible for this study had to report either having unprotected sex with multiple partners or having sex with a risky partner; this placed them at higher risk for possible STD and HIV infection than to the general population. In addition, the study participants also reported higher sex trading in comparison to sex trading in the general female population (31% vs. 23%) (Potterat et al. 1990), thus limiting generalizability beyond sampling from this single site. Further, it is possible that the participants may have experienced IPV with one sexual partner, but may have answered the questions related to fear of violent consequences to requests for condom use with reference to another sexual partner. The questions related to sexual coercion did not specify that the coercion had to occur with an intimate partner, but rather these questions were nested within other questions about violence committed by intimate partners. Future research might assess additional relationship variables, such as relationship power, partner dependence, and partner's motivation to practice safer sex. Greater inclusion of dyadic approaches, such as co-orientation analyses (Purnine 1997, 1999) will strengthen HIV prevention and practice research. Additionally, it is critical that we continue to develop individual, relational, and structural interventions aimed at eliminating IPV in an effort to decrease the disproportionate burden of HIV and other adverse health consequences experienced by women that are related to IPV.

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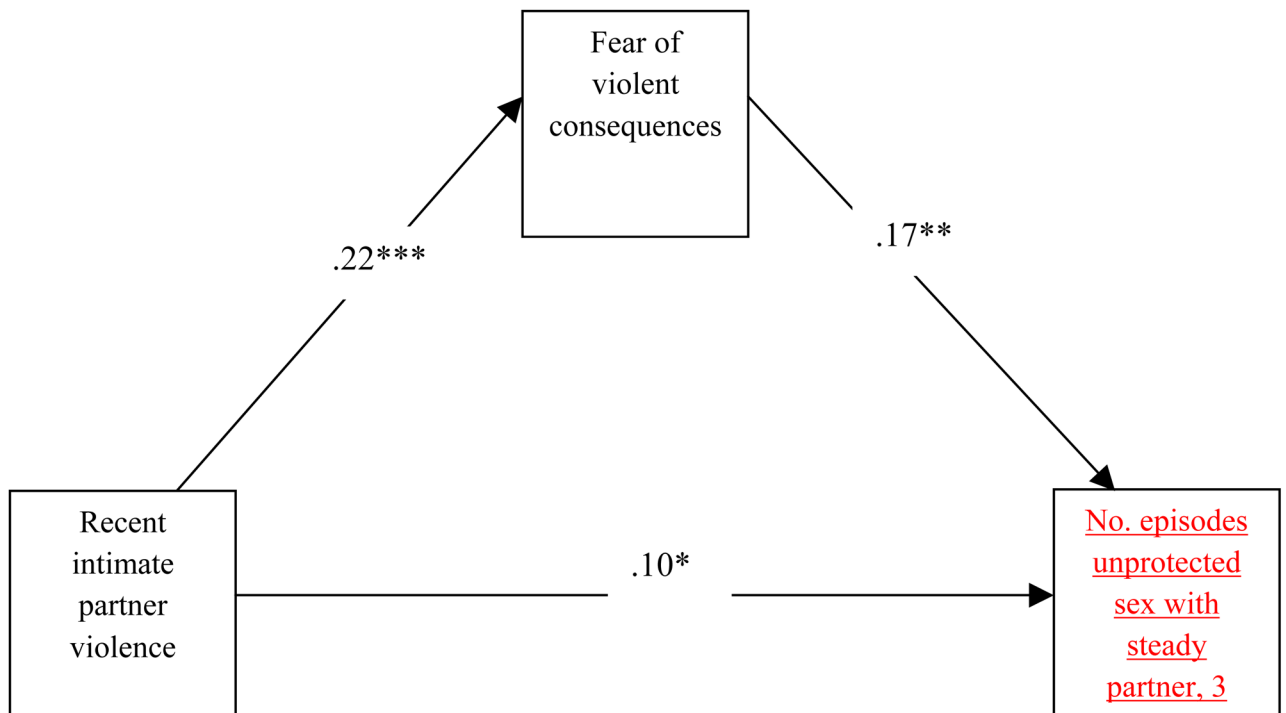
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**Figure 1.** Mediation model of the relation between IPV and the number of episodes of unprotected sex

Note: Standardized path coefficients shown.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 1**  
Demographics, Fear, and Sexual Behavior Characteristics by Recent Intimate Partner Violence

	IPV, past 3 months (n = 82)		No IPV, past 3 months (n = 396)		
	<i>n</i>	%	<i>n</i>	%	<i>p</i>
Race (African American)	58	71%	256	82%	--
Annual Income <\$15,000/year	67	82%	251	64%	<.01
Education (high school or less)	58	71%	249	63%	--
Unemployed	61	74%	201	51%	<.0001
Sex trading, ever	39	48%	99	26%	<.0001
	<i>Mean (SD)</i>	<i>Range</i>	<i>Mean (SD)</i>	<i>Range</i>	<i>p</i>
Age (years)	29.5 (10.3)	18 – 58	28.5 (8.7)	18 – 56	--
Fear of violent consequences	0.61 (.050)	0 – 1.83	0.35 (.036)	0 – 1.67	<.0001
Unprotected sex with steady partner (number of episodes, past 3 months)	22.4 (22.6)	0 – 81	15.0 (18.2)	0 – 81	<.01

Note. IPV = intimate partner violence