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The Association of Partner Abuse with Risky Sexual Behaviors Among Women and Men with HIV/AIDS

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Prior studies have found that partner abuse is related to risky sexual behavior. However, few studies have explored gender, sexual orientation, or substance use differences in this association, especially among people with HIV. We examined data from the Risk and Prevention survey from the HIV Cost and Services Utilization Study (HCSUS) sample on 726 sexually-active individuals in three gender/orientation groups (286 women, 148 heterosexual men, and 292 gay/bisexual men). The study assessed whether individuals with HIV who experienced or perpetrated abuse within a close relationship were likely to engage in unprotected intercourse with that same partner. Both abuse perpetration and victimization were significantly associated with having any unprotected intercourse. In multivariate tests, gender/orientation and substance use during sex moderated the perpetration effects. Secondary HIV prevention interventions need to take into account potentially abusive contexts in which sexual activity may occur for both men and women.

KEY WORDS: Violence; gender; sexual orientation; substance use; condom use.

INTRODUCTION

Approximately 13% of people living with HIV/AIDS have experienced relationship violence since their diagnosis, with the prevalence being approximately twice as high for women as for men (Zierler *et al.*, 2000). In a variety of samples, intimate partner violence has been associated with detrimental mental and physical health effects (Campbell, 2002), problems with access to health care (Eisenman *et al.*, 2003), as well as increased sexual risk for HIV transmission. Individuals who have been abused by their partners have a higher likelihood of contracting sexually transmitted diseases, and report less frequent condom use and greater engagement in sex work

(Gilbert *et al.*, 2000; Molina and Basinait-Smith, 1998; Plichta and Abraham, 1996; Wingood and DiClemente, 1997; Wu *et al.*, 2003; for a review see Maman *et al.*, 2000). Few of these studies have examined HIV-positive individuals, for whom the problem and consequences of relationship violence may be particularly acute due to the stress of illness.

Several explanations have been proposed for the co-occurrence of intimate partner violence and sexual risk. In particular, researchers have posited that individuals who attempt to negotiate condom use in the context of a violent relationship may meet with physical and emotional abuse (El-Bassel *et al.*, 2000; Gomez and Marin, 1996; Harlow *et al.*, 1993; Maman *et al.*, 2000; Molina and Basinait-Smith, 1998; Wingood and DiClemente, 1997). For example, Wingood and DiClemente found that African American women whose primary partners were physically abusive reported less frequent condom use and more negative partner reactions to condom use negotiation (i.e., verbal abuse and threats of physical abuse and abandonment) than those whose primary partners were not physically abusive.

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Research also suggests that substance abuse may be a key factor in the relationship between violence and sexual risk. For example, use of illicit drugs and/or alcohol may lead to increased abuse perpetration and decreased motivation for condom use; further, women who are under the influence of drugs or alcohol may be more vulnerable to sexual coercion (El-Bassel *et al.*, 2000; Strunin and Hingson, 1992). Accordingly, research has found recently-abused women to be more likely to report crack or cocaine use and to live with someone who had a substance use problem, and that women who experience frequent intimate partner abuse are likely to have partners with substance abuse problems (Gielen *et al.*, 2000, 2002).

Despite the strengths of prior research testing the association between violence and sexual risk, most of this work has failed to examine whether violence and risk co-occur within the same intimate relationship (for a review see Maman *et al.*, 2000). Similarly, research has rarely examined whether substance use in conjunction with, or immediately prior to, sexual behavior with a particular partner leads to unprotected intercourse. If the potential for risky sex increases in the presence of substance use or under the threat of abuse, the relations among violence, substance use, and condom use need to be examined within the same intimate relationship, rather than overall, across relationships. Such assessments allow a much stronger test of possible associations among these variables, and a greater understanding of how factors specific to a given intimate relationship might contribute to each of these risk factors.

Previous research has not tested whether substance use may interact with violence to produce greater sexual risk. Because both substance use and violence have been strongly associated with sexual risk in prior research, and substance use appears to increase the incidence of abuse, there is the potential for synergistic effects. That is, substance use may increase the likelihood of unprotected sex directly, and also increase the likelihood that partner violence will lead to risky sex. In the present study, we examined the joint effects of abuse and using substances prior to intercourse to test for possible synergistic effects on sexual risk.

In addition to the limitations noted above, investigations of intimate partner violence and sexual risk have almost exclusively concentrated on women. The focus on women most likely stems from feminist perspectives about gender inequality in heterosexual relationships (e.g., Millett, 1970). Because

of imbalances in men's and women's status in society, as well as women's smaller average physical size, researchers have argued that women are inherently less powerful and more vulnerable to victimization and physical injury within intimate relationships than are men (e.g., Amaro, 1995; Gomez and Marin, 1996). Although gender-related power imbalances can certainly influence women's ability to negotiate condom use, research has demonstrated that gay/bisexual men (GBM) may also be at risk for relational violence and consequent sexual risk (e.g., Kalichman *et al.*, 2001). Those with male partners may face greater risk for victimization than those with female partners, although research on violence in lesbian relationships suggests that power and control differentials are more likely to lead to abuse than is male gender (Girshik, 2002; Kaschak, 2001; Ristock, 2002). In addition, the impact of violence on health-related outcomes has been shown to differ between gay/bisexual men (GBM) and heterosexual men with HIV (Eisenman *et al.*, 2003), which suggests a need to further examine gender/sexual orientation differences in the association between violence and unprotected sex among people with HIV.

In the present study, we examined the links between violence and unprotected sex within close relationships, as reported by women, heterosexual men, and GBM living with HIV. If associations between violence and unprotected sex are stronger for women, then a gender-based power imbalance explanation would be most appropriate. If associations are stronger for both women and GBM, then a gender-of-perpetrator explanation would be most appropriate. However, to the extent that these associations are relatively comparable by respondent and partner gender, then a more inclusive theory of the effects of intimate partner violence on sexual risk is needed, one that conceptualizes the link between violence and unprotected sex in a manner appropriate for the diverse groups of individuals living with HIV.

METHOD

Sample and Procedure

Data for the present study were drawn from a survey of the 1421 people who completed the Risk and Prevention (R&P) follow-up to the HIV Cost and Services Utilization Study (HCSUS). HCSUS

used multistage national probability sampling to select random samples of geographic areas, medical providers, and adults with known HIV infection who had at least one health care visit at a facility other than a military, prison, or emergency department from January 1996 to February 1996. Detailed descriptions of the HCSUS methodology are available in prior reports (Bozzette *et al.*, 1998; Shapiro *et al.*, 1999).

A total of 2864 (71%) of patients sampled for HCSUS completed baseline interviews between January 1996 and March 1997, and of these, 2466 completed first follow-up interviews between December 1996 and July 1997, and 2267 completed second follow-up interviews between August 1997 and January 1998. Thus, 92% of those who completed the first follow-up interview also completed the second follow-up interview for HCSUS. For the R&P survey, which occurred from September through December 1998, 1794 patients who completed the second HCSUS follow-up survey were randomly selected, after stratifying by primary sampling unit, type of health care provider, age, ethnicity, and self-described sexual orientation. Only English speakers whose gender was unambiguous based on HCSUS data were eligible for the R&P survey. In addition, White gay men aged 40 and over were sampled with a probability of 33%, and White gay men aged 39 and younger were sampled with a probability of 45%; all other groups were sampled with a 100% probability.

A total of 1421 face-to-face, computer-assisted interviews were completed for the R&P survey, yielding a response rate of 79%, and a response rate of 84% after adjustment for known mortality. Respondents were eligible for the present investigation if they: reported their sexual orientation and had a husband or wife and/or a primary relationship partner during the six-month period preceding the interview. Of the 1421 interviews completed, 1362 had nonmissing data on sexual identity. Of these, 741 individuals reported having close relationship partners. Twenty-five respondents reported two or more recent close relationship partners. For the purposes of the present study, we first randomly selected and analyzed data for only one close partner for these 25 individuals. Then, we selected participants who reported that they had oral, anal, or vaginal sex within a close relationship during the six-month period preceding the interview, leaving 726 participants for analysis (286 women, 148 heterosexual men, and 292 GBM).

Measures

With the exception of socio-demographic and disease characteristics, all variables listed below were self-report measures drawn from the R&P survey. Socio-demographic characteristics were self-reported during the HCSUS baseline survey, and CD4 count was self-reported during the HCSUS baseline and follow-up surveys.

Socio-Demographic and Disease Characteristics

Respondents reported their age, race/ethnicity, education, income, and geographical region. Lowest CD4 count since the baseline interview was used as a measure of disease progression.

Gender and Sexual Orientation Group

Respondents reported their gender and sexual identity. These two items were combined and used to derive three gender/sexual orientation groups: women, heterosexual men, and GBM.

Substance Use Within Close Relationships

Respondents were asked how often in the last six months they or their spousal/primary relationship partner drank alcohol before or during sex, and how often they or their partner used drugs other than alcohol to get high before or during sex. Separate questions assessed alcohol use and drug use, and respondent and partner substance use for a total of four items. Because respondents' and their partners' substance use were highly collinear, all items were combined to create a single dichotomous indicator of any substance use in conjunction with sex in the specified close relationship.

Abuse Within Close Relationships

Eight items assessed specific abusive behaviors within a particular spousal or primary relationship (threaten to hit or throw something; push, grab, or shove; kick, bite or hit with fist; force to have vaginal or anal sex), separately for perpetration and victimization. Specifically, to assess abuse perpetration, respondents were asked how often they engaged

in each behavior with their partner in the past six months, and to assess abuse victimization, respondents were asked how often their partner exhibited each behavior toward them in the past six months. Response options were *never*, *once or twice*, and *three or more times*. Responses were combined and dichotomized into two measures: *any perpetration* or *any victimization* vs. *none*. (Note that the terms “violence” and “abuse” are used interchangeably to refer to this measure.)

Unprotected Sex within Close Relationships

Respondents were asked the frequency with which condoms were used when they had vaginal or anal intercourse with a particular spousal or primary relationship partner in the past six months. Separate questions assessed condom use for vaginal and anal intercourse. Response options were *always*, *usually*, *about half the time*, *sometimes*, and *never*. Unprotected sexual intercourse was defined as any anal or vaginal sex without a condom in the past six months, within the specified close relationship.

Data Analysis

Descriptive statistics and bivariate analyses were used to examine the characteristics of the sample by gender/sexual orientation group. Bivariate analyses were also used to determine the relations among gender/sexual orientation group, abuse, and condom use. Logistic regressions were then conducted to examine the multivariate correlates of having any unprotected sex. Separate analyses were performed for the two different experiences of abuse (perpetration and victimization). In each model, any perpetration (or any victimization), gender/orientation group (women, heterosexual men, GBM), substance use, the gender/orientation group by perpetration/victimization interactions, and the substance use by perpetration/victimization interaction, were entered. The full model, with the substance use by abuse by gender/orientation interactions, could not be tested due to low cell sample sizes for the three-way interaction effects. Any significant interactions were decomposed by examining the prevalences of unprotected intercourse within the subgroups defined by the interaction. Specifically, a significant gender/risk group by perpetration interaction would be inter-

preted by examining the percentages of heterosexual men, gay/bisexual men, and women in each perpetration group (i.e., perpetration, no perpetration) who reported unprotected sex. A significant interaction between substance use and perpetration would be interpreted by computing the percentages of perpetrators and non-perpetrators who in each substance use group (i.e., substance use with sex, no substance use with sex) who reported unprotected sex.

Socio-demographic control variables for all models included age, race, income, education, and geographic region. Because individuals who feel or look healthy may be more likely and/or able to engage in risky sexual behavior (e.g., Desquilbet *et al.*, 2002), we also controlled for CD4 count in all analyses. All analyses were weighted to represent a population of adults receiving medical care in the contiguous United States, surviving two years post-baseline, and involved in a close sexual relationship. For missing values other than on sexual orientation, randomly-drawn responses within a stratum of respondents were used to fill in the less than 5% of essential missing values (“hot deck” imputation).

RESULTS

Characteristics of Sample

The characteristics of the final sample are shown in Table I. Compared to GBM, women and heterosexual men were more likely to be African American or Hispanic, to have less education, to be younger, to have lower income. In addition, women and heterosexual men were more likely to have been recruited from the Northeast and less likely to have been recruited from the Midwest, South, and West than were GBM. Women and heterosexual men were also more likely than GBM to have perpetrated any abuse and less likely to report any alcohol or drug use in conjunction with sexual intercourse.

Relationship of Abuse Perpetration to Sexual Risk

Bivariate analyses indicated that respondents who had perpetrated abuse within their close relationships were more likely than those who did not to report engaging in any unprotected intercourse in the past 6 months (OR = 1.69, 95% CI = 1.15–2.50, $p < .01$). In the multivariate model, gender/sexual

Table I. Characteristics of the Study Sample by Gender/Sexual Orientation Group

	Women (<i>n</i> = 286)	Heterosexual Men (<i>n</i> = 148)	Gay/Bisexual Men (<i>n</i> = 292)
Age [mean years(SE)]***	36.3 (.66)	43.3 (.69)	38.8 (.39)
Race/ethnicity (%)**			
White	29.6	28.5	70.1
African American	52.7	52.3	11.8
Latino	16.6	17.7	14.4
Other	1.1	1.5	3.7
Education (%)**			
Some high school	41.0	39.4	12.0
High school graduate	32.8	31.1	26.2
Some college	22.6	21.0	31.6
College Graduate	3.6	8.4	30.2
Income (%)**			
\$0–\$5,000	22.3	16.6	10.2
\$5001–\$10,000	32.0	33.6	19.3
\$10001–\$25,000	30.4	30.3	24.0
>\$25,000	15.3	19.4	46.5
Geographical region (%)**			
NorthEast	35.3	48.5	11.4
Midwest	14.2	6.2	11.3
South	42.5	36.1	29.0
West	8.0	9.2	48.3
CD4 Count (%)			
≥500	7.7	3.4	4.1
200–499	46.9	36.5	36.6
50–199	28.1	37.4	34.8
0–49	17.2	22.8	24.5
Any unprotected sex (%)	39.0	23.5	36.0
Abuse (%)			
Any perpetration*	24.9	23.2	16.3
Any victimization	19.8	24.2	16.7
Any substance use before/during sex (%)**	40.1	32.2	62.8

p* < .05; *p* < .001.

orientation and substance use moderated the effects of abuse perpetration on unprotected sexual behavior, after adjusting for age, race, income, education, geographic region, and CD4 count (Table II). The gender/sexual orientation by perpetration interaction indicated that perpetration of abuse and unprotected sex were positively associated among women and GBM, but not among heterosexual men. The percentage of heterosexual males who had unprotected sex was approximately equal, whether they were perpetrators of abuse (21%) or not (24%). In contrast, unprotected sex was substantially more common among perpetrators than non-perpetrators in the other two subgroups (54% vs. 33% for GBM; 49% vs. 36% for females). Moreover, the substance use by perpetration interaction indicated that the relationship between perpetration and unprotected sex held for those who reported substance use in conjunction with sex, but not for those who did not.

Perpetrators who reported substance use with sex were almost twice as likely as nonperpetrating substance users (57% vs. 33%, respectively) to have unprotected sex with their close relationship partner. Among those who did not report using substances with sex, the percentages who had unprotected sex were approximately equal (22% of perpetrators vs. 30% of non-perpetrators).

Relationship of Abuse Victimization to Sexual Risk

The bivariate analysis indicated that respondents who had been abused within their close relationships were more likely than those who had not to report engaging in any unprotected intercourse (OR = 2.52, 95% CI = 1.85–3.43, *p* < .001). As presented in Table III, the relationship between victimization and unprotected sexual

Table II. Impact of Gender, Sexual Orientation, Abuse Perpetration, and Substance Use on Risk of Unprotected Sex

	Odds ratio (95% confidence interval)
Female ^a	1.2 (0.7, 2.2)
Heterosexual Men ^a	0.7 (0.3, 1.6)
Perpetration	1.0 (0.4, 2.2)
Female × Perpetration	0.8 (0.3, 1.9)
Heterosexual men × Perpetration	0.4 (0.1, 0.9)*
Substance use	1.0 (0.6, 2.0)
Substance use × Perpetration	3.8 (1.6, 9.0)**

Note. Results are shown for a multivariate logistic regression model that controlled for age, race/ethnicity, educational attainment, income level, geographical region, and CD4 cell count ($n = 726$).

^aReference group = gay/bisexual men.

* $p < .05$; ** $p < .01$.

intercourse remained significant after adjusting for socio-demographic characteristics and disease progression (OR = 2.6, 95% CI = 1.20–6.00, $p < .01$). This effect was not moderated by substance use or gender/sexual orientation group.

DISCUSSION

The present results suggest that both men and women living with HIV are vulnerable to and at risk for violence. Victimization by intimate partner abuse was associated with higher levels of unprotected sex in a national sample of heterosexual men, gay/bisexual men, and women receiving medical care for HIV. These findings are consistent with prior research showing greater sexual risk among

individuals experiencing intimate partner violence (El-Bassel *et al.*, 2000; Gielen *et al.*, 2002; Gilbert *et al.*, 2000; Molina and Basina-Smith, 1998; Plichta and Abraham, 1996; Wingood and DiClemente, 1997; Wu *et al.*, 2003) and substantially extend the present literature by calling attention to the harmful consequences of victimization for both men and women. In addition, the present study's findings for sexual orientation complement those of Kalichman and colleagues (2001), who found that GBM who had been sexually coerced in adulthood had a higher likelihood of reporting multiple unprotected anal intercourse partners than did those who had not been similarly victimized.

None of the findings for victimization regarding unprotected sex significantly differed by respondent gender/orientation, suggesting that both men and women are susceptible to the effects of abuse. However, the effects of abuse perpetration were modified by sexual orientation. Perpetration of abuse was associated with unprotected sex among both groups who have male partners—gay males and females, but not among heterosexual men. Although it is tempting to attribute the finding to partner gender, the fact that we did not find a parallel difference when looking at victimization (i.e., we did not find that heterosexual men and GBM were more likely to be victims) makes this interpretation questionable.

Together, the victimization and perpetration findings suggest that neither gender of the perpetrator nor gender of the victim entirely explains the abuse-unprotected sex association. Instead, it may be something about the balance of power in heterosexual relationships in combination with the HIV status of those in the relationship. All of our respondents were HIV-positive, although not all of their close partners had HIV. Thus, the perpetrators and victims described by our instrument are not mirror images of one another. It may be that this factor accounts for the disjunction between perpetration and victimization. Ideally, we would have restricted our examination of unprotected sex to partners with negative or unknown serostatus, whose infection poses the greatest risk to the public health. However, the low prevalence rates of unprotected sex with individuals of negative or unknown serostatus (17%), perpetration of abuse (15%), and victimization by abuse (15%) in our dataset did not allow sufficient power to examine this across gender/orientation, violence, and substance use patterns. Regardless of its source, the finding that perpetration of abuse is related to sexual risk only among women and GBM suggests that

Table III. Impact of Gender, Sexual Orientation, Abuse Victimization, and Substance Use on Risk of Unprotected Sex

	Odds Ratio (95% Confidence Interval)
Female ^a	1.3 (0.7, 2.4)
Heterosexual Men ^a	0.6 (0.2, 1.5)
Victimization	2.6 (1.2, 6.0)*
Female × Victimization	0.8 (0.2, 2.9)
Heterosexual men × Victimization	0.7 (0.2, 2.3)
Substance use	1.2 (0.7, 2.2)
Substance use × Victimization	1.3 (0.5, 3.3)

Note. Results are shown for a multivariate logistic regression model that controlled for age, race/ethnicity, educational attainment, income level, geographical region, and CD4 cell count ($n = 726$).

^aReference group = gay/bisexual men.

* $p < .01$

these groups be the target of interventions to reduce perpetration of partner abuse, whereas all those with HIV need assistance with victimization.

We also found that the correlation between perpetrating abuse and unprotected sex differed by substance use. Strikingly, as compared to respondents who did not perpetrate intimate partner abuse, respondents who perpetrated abuse were nearly twice as likely to have unprotected intercourse if substances were used in association with sex. Because we did not collect detailed data regarding the context in which sexual behavior occurred, we do not know the mechanisms by which the combination of substance use and abuse are associated with increased risk, or the reasons why substance use would moderate the effects of perpetration, but not victimization. Nonetheless, in agreement with prior qualitative research (El-Bassel *et al.*, 2000), we speculate that substance use can work synergistically with violence to lower motivations to use condoms with a partner in the context of abuse. Moreover, substance use may have a stronger disinhibitory effect on perpetrators than on those who are victimized, perhaps because perpetrators may consume a greater quantity of substances. Although these explanations cannot be tested with the present dataset, our findings complement this prior work by demonstrating the need to recognize the perpetrator's perspective in the abuse-sexual risk equation when designing interventions.

HIV-prevention is increasingly directed at altering the sexual risk behavior of those already infected with the virus. Overall, our results suggest that a greater emphasis on violence in prevention interventions for this group, and for both men and women, heterosexuals and gays, is warranted. HIV prevention researchers have recently called for expanding prevention interventions to address violence (Kelly and Kalichman, 2002; Logan *et al.*, 2002). Nevertheless, the focus of attention thus far has been on those who are seronegative and on women, and the effects of victimization on HIV-positive men's sexual risk have largely been ignored. Perpetration of abuse should also be addressed, particularly in transmission-prevention interventions for HIV-positive GBM and women.

Although interventions that instruct participants about condom use negotiation are important, such interventions also need to reconsider ways in which condoms may be introduced with a violent partner, such as through improved assertiveness skills, as well as via communication with one's partner

about the health benefits of reducing the risk of STD transmission. As shown in prior research, women may be abused or fear abuse for suggesting condom use (for a review see Logan *et al.*, 2002), and ironically, some women have been physically victimized after introducing the female condom (El-Bassel *et al.*, 2000), a method originally thought to be an attractive, female-controlled alternative to the male condom. Efforts currently underway to develop microbicides, which can be applied without partners' knowledge, hold promise as barrier methods that can reduce the need for overt negotiation with a violent or potentially violent partner. Finally, the obtained differences by sexual orientation suggest a particular need to understand the context of violence in gay/bisexual couples.

Several limitations to the present study deserve mention. Our data were obtained from self-report measures in a cross-sectional investigation, and therefore we cannot make conclusions about the direction of causality. In addition, sensitive behaviors, such as substance use, violence, and condom use among people living with HIV may be subject to social desirability biases. Although self-administration of these measures may have minimized these biases, it is unlikely that they were removed entirely. Thus, the numbers reported here may be underestimated, although notably, the obtained effects were robust. Measurement of the key study variables for close relationship partners means that we cannot draw conclusions regarding casual partners. In particular, the influence of violence on risk with certain casual partners, such as those in sex work contexts, needs to be elucidated. Infecting such partners with HIV would have the potential to spread the virus very quickly in the segment of the population who engage in commercial sex. In addition, the sampling methodology used in HCSUS limits the study to those who received some care for their disease. Thus, people with HIV who have poorer access to care may not be represented.

Because the present study did not capture the experiences of women in lesbian relationships, we cannot make comprehensive conclusions regarding male, versus female, perpetrators with same-sex and opposite-sex partners. Prior research suggests that abuse perpetration is more likely by lesbians who feel dependent on their partners and who feel internalized homophobia or stress from being a member of an oppressed societal group (Balsam, 2001; Kaschak, 2001; Miller *et al.*, 2001; Ristock, 2002). In combination with the present study, which found stronger

effects for women and gay/bisexual perpetrators than for heterosexual male perpetrators, these previous findings suggest that disempowerment—related to one's sexual orientation or gender—may play a larger role in abuse perpetration than is recognized in the feminist literature (Balsam, 2001). Nevertheless, because lesbians are less at risk for HIV than gay/bisexual men and heterosexuals, there were insufficient numbers of lesbians in the present sample to examine this issue. Thus, future research is needed to understand fully the relationship between violence, dependence, and power in all types of close relationships.

Despite these limitations, the present investigation demonstrates robust associations between abuse and unprotected sex among women, heterosexual men, and GBM who are living with HIV. We also provide evidence suggesting that any effects of abuse on unprotected sexual behavior may be exacerbated by substance use. Prior research has rarely examined the myriad ways in which violence, substance use, and sexual behavior interact within intimate relationships, and has not examined these relations by gender and sexual orientation, or in an HIV-positive sample. The co-occurrence of violence, substance use, and unprotected sex in this and other studies demonstrates a need for comprehensive, multi-pronged general prevention interventions, which focus on reducing sexual risk, as well as substance use and violence, for all men and women with HIV.

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