

Intimate Partner Violence and HIV Risk Among Urban Minority Women in Primary Health Care Settings

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Received Dec. 4, 2001; revised Jan. 13, 2003; accepted Mar. 18, 2003

This study describes the associations between intimate partner violence (IPV) and HIV risk among urban, predominantly minority women. Interviews were conducted with 1,590 women, predominantly African American and Latina, attending hospital-based health care clinics. Approximately 1 in 5 women reported experiencing IPV in their current primary heterosexual relationships; about 1 in 8 women reported experiencing IPV in the preceding 6 months. Compared to women who reported no IPV in their primary relationships, women reporting past or current IPV perpetrated by their primary partners were more likely to report having multiple sexual partners, a past or current sexually transmitted infection (STI), inconsistent use or nonuse of condoms, and a partner with known HIV risk factors. These findings indicate that urban minority women experiencing IPV are at elevated risk for HIV infection, results that carry important implications in the efforts to improve HIV and IPV risk assessment protocols and intervention/prevention strategies for women in primary health care settings.

KEY WORDS: Intimate partner violence; sexual risk behavior; HIV prevention; sexually transmitted infection.

INTRODUCTION

There is increasing evidence that links the epidemics of intimate partner violence (IPV) and human immunodeficiency virus (HIV) among women (Eby *et al.*, 1995; El-Bassel *et al.*, 1998; Koss and Heslet, 1992; Morrill and Ickovics, 1996; Plichta and Abraham, 1996; Wingood and DiClemente, 1997). Unemployment and living with a low income, two common characteristics of urban minority neighborhoods, have also been linked to IPV (Mason and Blankenship, 1987; Straus, 1980). Because of the overrepresentation of African Americans and Latino/as among the demographics linked to IPV (e.g., poverty, unemployment) and the disproportionate representation of the same minorities among new cases of HIV

infection among women (Centers for Disease Control and Prevention, 1999), it is important to ascertain whether there is a corresponding overlap in the epidemics of IPV and HIV in these populations.

Several studies have implicated IPV as a risk factor for having unprotected sex among minority and/or urban women in health care settings. Johnsen (1995) analyzed data from a community-based sample of women and found that IPV was associated with sex without a condom. In a study of 165 primarily low-income African American women, Wingood and DiClemente (1997) found a significant association between a recent incidence of IPV and lack of condom use. Morrill and Ickovics (1996) found that IPV contributed to unprotected vaginal sex in the previous month among 141 women attending urban health clinics. Suarez-Al-Adam *et al.* (2000) documented high rates of IPV experienced among Latinas in their HIV prevention study with 46 women of Hispanic origin. The link between IPV and nonuse of condoms may stem from women perceiving themselves as having less power and control to negotiate safer sex as a consequence of experiencing IPV perpetrated by their

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partners (El-Bassel *et al.*, 2000; O'Leary and Jemmott, 1995); alternatively, women who attempt to protect themselves from sexual transmission of HIV may face violent reprisals, especially if condom use is taken as implying infidelity (El-Bassel *et al.*, 1998; Neighbors *et al.*, 1996).

Some evidence suggests that partners who perpetrate IPV may be more likely to engage in HIV-related risk behaviors, such as injecting drugs and having unprotected sex with multiple, concurrent partners. Among 273 sexually active men recruited from inner-city methadone maintenance treatment programs, men who perpetrated IPV were more likely to engage in sexual HIV risk activities, including unprotected sex, multiple partners, and sex with injection drug users (El-Bassel *et al.*, 2001a). In a study with women receiving emergency care, El-Bassel *et al.* (1998) found that women who reported experiencing IPV were four times more likely than women who reported no experiences of IPV to have had sex with a high-risk male partner (i.e., a partner who injected drugs, is living with HIV, and/or has had sex with other men). In an epidemiological study carried out with 876 Rwandan couples, van der Straten *et al.* (1995) reported a relationship between having an HIV-positive partner and experiencing physical abuse. The link between partner HIV risk and IPV may stem from the same patriarchal norms that further male-perpetrated IPV against women and also perpetuate nonmonogamy (van der Straten *et al.*, 1995), from drug use as the common factor (i.e., a third, explanatory variable) for both HIV risk and IPV, and/or from violence as a reaction to disclosure of the woman or partner's HIV infection (El-Bassel *et al.*, 2000; Garcia-Moreno and Watts, 2000; van der Straten *et al.*, 1995).

Recent findings indicate that IPV and sexually transmitted infections (STIs), including HIV, may be associated among non-drug-using women (Eby *et al.*, 1995; El-Bassel *et al.*, 1998; Koss and Heslet, 1992; Martin *et al.*, 1997; Plichta and Abraham, 1996). In a random survey of 1,599 women, Plichta and Abraham (1996) found that a recent history of spouse abuse was significantly associated with gynecologic problems, including STIs, urinary tract infections, and pelvic inflammatory disease. El-Bassel *et al.* (1998) found that abused women were almost five times more likely than nonabused women to report having contracted an STI in the previous year. The dynamics linking IPV and STIs may stem directly from an association of inconsistent or nonuse of condoms with IPV, from a pattern of sexual risk taking among women with a past

or current history of IPV and sexual assault (Maman *et al.*, 2000), and/or from women being forced to exchange sex to procure money or drugs for their abusive partner (El-Bassel *et al.*, 2000).

Although a primary health care setting may represent an ideal site for carrying out HIV-preventive intervention activities within communities highly affected by the HIV epidemic, few of the earlier studies were carried out in such settings and many of these studies relied on relatively small sample sizes. This study examines the relationships between IPV and a spectrum of sexual HIV risk-related factors among a sample of 1,590 predominantly African American and Latina women attending an urban outpatient health clinic. More specifically, we assessed the associations between experiencing IPV in a primary heterosexual relationship and the following HIV risk behaviors in the prior 90 days: (1) having multiple sexual partners over the prior 90 days, (2) condom use consistency with the primary partner during the prior 90 days, (3) the woman's STI history, (4) partner-related risk (i.e., having a partner who is having sex with more than one partner, is HIV-infected, injects drugs, and/or has an STI), and (5) the woman's perception of risk for HIV infection. Given that social and cultural factors such as age, race/ethnicity, employment status, and length of relationship are related to differential rates and/or reporting of both IPV (Bachman, 2000; Raphael and Tolman, 1997; Tjaden and Thoennes, 1998) and HIV risk (Buchacz *et al.*, 2001; Centers for Disease Control and Prevention, 1999; Sikkema *et al.*, 1996), the aforementioned associations are also examined while controlling for these factors.

METHODS

Recruitment

As part of a larger, randomized clinical trial of a relationship-based HIV/STI preventive intervention program, study participants were recruited from outpatient clinics at a large urban hospital in New York City (El-Bassel *et al.*, 2001b, 2003; Witte *et al.*, in press). In four of the six neighborhoods served by the hospital, over 40% of local residents live in poverty; 35% of residents are African American and 48% are Latino. In some neighborhoods served by these outpatient clinics, the AIDS prevalence is two to three times higher than in New York City as a whole (New York City Department of Health, 2000).

Although the recruitment procedures and measures of their success are described in more detail elsewhere (El-Bassel *et al.*, 2001b; Witte *et al.*, in press), a brief overview is provided. All women patients entering the outpatient clinic were approached by project staff, handed a flyer describing the parent study, and invited to complete a brief screening questionnaire to determine eligibility for the parent study; about one third agreed to participate (Witte *et al.*, in press). Interested women were asked to come to a small private office, where they completed the 15-min, face-to-face screening administration by a female interviewer. The screening interviews were conducted in either English or Spanish, according to the preference of the participant. Due to feasibility constraints, interviewers were not matched by race/ethnicity to the participant; almost half of the participants were interviewed by a Latina (of Puerto Rican descent) interviewer and the rest were interviewed by an African American interviewer. The data presented in this report originate from the responses to the screening assessment tool used during implementation of the parent study. Participants were reimbursed with a subway card worth \$3.00 following completion of the screening assessment.

Eligibility Criteria

The data presented here were obtained from the screening protocol that was used to determine eligibility for the parent study; thus, for this phase, a woman was eligible at this point if she was at least 18 years old and a patient at any of the study-site clinics. For the study presented here, responses were used from screened women who indicated that they currently had a regular male partner (i.e., a male considered to be a “spouse, lover, or boyfriend” and hereinafter referred to as the “primary partner”) with whom they had sex in the preceding 90 days. The distribution of age, race/ethnicity, and employment status among the sample for this study is very similar to that of the population of adult female patients served at the hospital where the research was carried out; unfortunately, hospital census data with respect to language preference, marital status, and length of relationship were unavailable for comparison (Witte *et al.*, in press).

Measurement

Sociodemographic data collected included a woman’s age, race/ethnicity, language preference (English or Spanish) as indicated by the language

in which the interview was conducted, employment (both legal and/or illegal) status, current legal or common law marital status, and whether the relationship with the primary partner was greater than 6 months in duration.

Questionnaire items assessing for IPV and HIV risk were worded to focus specifically on the participant’s relationship with this primary partner. IPV was assessed using modified items from the physical and sexual abuse subscales of the Revised Conflict Tactics Scale (CTS2) by Straus *et al.* (1996). Minor physical abuse was assessed with two questions: “Has your partner twisted your arm or hair, or threw something at you that could hurt?” And “Has your partner pushed, grabbed, or slapped you?” Severe physical abuse was assessed with three questions: “Has your partner kicked you or slammed you against a wall, punched or hit you with something that could hurt you?” “Has your partner beat you up, or burned or scalded you on purpose?” And “Has your partner choked you, or used a knife or gun on you?” Sexual abuse was assessed by asking “Has your partner used force, like hitting, holding you down, or using a weapon, to make you have sex?” Answer choices covered violence within the last 6 months as well as periods in the relationship prior to the preceding 6 months. “Lifetime” experience of IPV was operationalized as any positive response to the above questions; “current” experience was operationalized as positive responses in which the participant indicated that IPV occurred in the preceding 6 months. In circumstances where a participant reported having experienced severe violence within the past 6 months, the study recruiter offered to provide referrals related to appropriate partner violence.

Sexual HIV risk behaviors were measured using responses from selected items of the Sexual Risk Behavior Questionnaire (SRBQ). The SRBQ was developed by the investigators and used in several prior studies with over 1,500 female and male participants recruited from a range of settings, including drug treatment, STI clinics, primary health care, and emergency departments (El-Bassel *et al.*, 1995, 2001a; Gilbert *et al.*, 2000). The selected items included the woman’s number of sexual partners in the preceding year, history of having an STI, and condom use consistency during instances of sex with the primary partner during the prior 3 months. For condom use consistency, participants were prompted to select answers from a 5-point Likert scale (0 = *Never* to 4 = *Every time*). A 3-month window for condom use consistency was used based on conceptual and theoretical

arguments indicating that it would be an optimal balance of validity and reliability. For example, although the reliability of sexual behavior and condom use has been shown to decrease as the duration of the timeframe increases (Kauth *et al.*, 1991) compared to shorter or longer timeframes due to difficulties in recall, validity increases for individuals who engage in sex and/or condom use relatively infrequently as well as allowing participants to use a choice or combination of cognitive processes, for example, episodic or reconstruction versus rule-based or calculation estimates, to report retrospective sexual practices (Jaccard *et al.*, 2002; Kauth *et al.*, 1991). This timeframe for self-reports of sexual and condom use behaviors has been used in many randomized clinical trials testing the efficacy of behavioral HIV/STI preventive interventions (DiClemente and Wingood, 1995; Ehrhardt *et al.*, 2002; Jemmott *et al.*, 1998; Kamb *et al.*, 1996; The National Institute of Mental Health Multisite HIV Prevention Trial Group, 1998).

Participants were also asked if they had knowledge that their primary partners had a risk factor placing them at risk for HIV infection. Positive responses were coded if the woman indicated that she had knowledge that her primary partner had sex with another man or woman recently (i.e., within the last 90 days), a recent STI diagnosis, recent STI symptoms (e.g., pain during urination, sores on the penis), recent injection drug use, or an HIV-positive diagnosis.

In addition, a psychological variable, perceived HIV risk, was assessed by asking the participant "How worried are you that you might already have or in the future get HIV, the virus that causes AIDS?" using responses from a Likert scale (0 = *Not at all worried*, 1 = *A little worried*, 2 = *Somewhat worried*, and 3 = *Very worried*).

All protocols for this study were approved by the institutional review boards of both the research institution and the hospital at which recruitment took place.

Data Analysis

Logistic regression analyses were performed to elucidate the relationships between IPV and HIV risk. Although the nature of the relationships between IPV and HIV risk most likely is bidirectional, for the purposes of this study, we conceptualized IPV as the independent variable and HIV risk as the dependent variable. We report relative increase or decrease of the presence of an HIV risk factor dependent on the

presence or absence of IPV using odds ratios (ORs) with 95% confidence intervals (CIs). "Current" IPV was operationalized according to two criteria: (1) a positive response to at least one of the IPV questions and (2) at least one of the positive responses indicating that the abuse occurred within the preceding 6 months; the operational definition of "past" IPV with the current primary partner was identical except that the respondent had to indicate that none of the abuse occurred in the preceding 6 months. The dependent variables of HIV risk included self-report on behaviors (i.e., having more than one sexual partner in the last year, condom use consistency, and being in a relationship with a risky partner), an indicator of risk behavior (i.e., a past or current STI diagnosis), and one psychological variable (i.e., level of concern about becoming HIV infected). The final regression models included adjustment for potentially confounding sociodemographic variables, the selection of which was guided by theoretical considerations and previous research, which indicated a potential relationship among specific sociodemographic factors, HIV risk, and IPV among women (Dolezal *et al.*, 1998; El-Bassel *et al.*, 2001a; Garcia-Moreno and Watts, 2000; Gilbert *et al.*, 2000; van Vliet *et al.*, 2001); the selected variables included age, race, employment status, marital status, and a dichotomous measure of the length of the relationship. The sensitivity of the final model was assessed by examining whether patterns of significance changed when run with different subgroups and/or various interaction terms (e.g., age \times IPV) were included in the equations.

RESULTS

Sociodemographics

The sociodemographic characteristics of the study sample are presented in Table I. For the 1,590 participants, the mean age of participants was 35.4 years ($SD = 10$ years), with the majority identifying as African American or Latina. About one fifth preferred to converse in Spanish, with all but 2 of the Spanish speakers identifying as Latina. Almost three fourths of the participants were unemployed. About half were single, never married, with the remainder identifying (in descending order of proportion) as married, separated or divorced, and widowed. The vast majority of women indicated that the duration of their relationships with their current primary partners was at least 6 months.

Table I. Sociodemographic Characteristics of the Study Sample (*N* = 1,590)

	<i>n</i>	%
Age (years)	Mean = 35.4 <i>SD</i> = 10.1	
Race/ethnicity		
Latina	873	54.9
African American	643	40.3
White and other	76	4.8
Language preference		
English	1242	78.2
Spanish	346	21.8
Unemployed	1190	74.8
Marital status		
Married	363	22.8
Single, never married	805	50.6
Separated or divorced	362	22.8
Widowed	60	3.8
Length of Relationship		
≤6 months	152	9.6
>6 months	1438	90.4
HIV-positive	131	8.2

HIV Risk

The prevalence of self-reported HIV-infection among this sample was 8.2% (*n* = 131). About one-fourth of the women had more than one sexual partner in the past year, about one third reported a history of having an STI, less than 1 in 10 used a condom during every instance of penetrative sex with their primary partners during the preceding 3 months, and over three fourths never used condoms with their primary partners during sex within that time period. More than 1 in 10 women reported knowing that their primary partners placed them at risk for HIV transmission; almost two thirds of the HIV-negative women expressed some concern about contracting HIV (see Table II).

Intimate Partner Violence

Minor physical violence perpetrated by the current primary partner was reported by 17.3% (*n* = 275) of the participants, and about two thirds of those reporting minor physical IPV indicated that such abuse occurred within the preceding 6 months. Severe physical abuse was reported by 7.8% (*n* = 125) of the participants; of these women, about two thirds reported that severe physical IPV was perpetrated by their primary partners in the preceding 6 months. Sexual violence perpetrated by the primary male partner was reported by 2.7% (*n* = 43) of the participants; about two

Table II. HIV Risk Factors and Perception Among Participants (*N* = 1,590)

	<i>n</i>	%
>1 partner in last year	414	26.1
Have/had an STI	537	33.8
Condom use consistency		
Every time	152	9.6
More than half of the time	89	5.6
Half of the time	60	3.8
Less than half of the time	70	4.4
Never	1219	76.7
Primary partner with known HIV risk	185	13.5
Perception of HIV risk		
Not at all worried	537	36.8
A little worried	332	22.8
Somewhat worried	165	11.3
Very worried	425	29.1

of three of the women who reported sexual IPV indicated that it occurred within the preceding 6 months. Combining physical or sexual abuse, almost one fifth (18.4%, *n* = 291) of the women reported experiencing IPV perpetrated by their current primary partners; about 70% of these women reported that this IPV was perpetrated within the preceding 6 months (see Table III).

Binary and multinomial logistic regression analyses between sociodemographic variables and experience of IPV indicate that African American women were 1.7 (95% CI = [1.3, 2.1]) times more likely than Latinas to report past or current IPV by their primary partners. Women who preferred to speak in English were 3.9 (95% CI = [2.5, 6.0]) times as likely to report past or current IPV compared to their English-speaking counterparts. Unemployed women were 2.0 (95% CI = [1.4, 2.8]) times as likely to experience past or current IPV from their primary partners compared to employed women. Compared to women married to

Table III. Experience of Intimate Partner Violence (IPV) Among Participants (*N* = 1,590)

	<i>n</i>	%
Minor physical abuse		
Within the preceding 6 months	192	12.1
Before the preceding 6 months	83	5.2
Severe physical abuse		
Within the preceding 6 months	75	4.7
Before the preceding 6 months	50	3.1
Sexual abuse		
Within the preceding 6 months	27	1.7
Before the preceding 6 months	16	1.0
Any IPV		
Within the preceding 6 months	206	13.0
Before the preceding 6 months	85	5.4

their primary partners, single (i.e., never married) and separated/divorced women were 1.7 (95% CI = [1.2, 2.4]) and 1.8 (95% CI = [1.2, 2.7]) times more likely, respectively, to report experiencing past or current IPV by their primary partners; women who had been with their primary partners for more than 6 months were 4.4 (95% CI = [2.1, 9.1]) times as likely to report past or current IPV than women who had been with their primary partners for a shorter period of time.

IPV and HIV Risk

The relationships among HIV risk factors and IPV, after adjusting for sociodemographic variables, are indicated in Table IV. Compared to women who reported no IPV in their relationships with their primary partners, women who reported experiencing past or current IPV with their current primary partners were 2.9 times as likely to have multiple sexual partners in the past year and 2.5 times more likely to report having a past or current STI. In our sample, those who experienced past or current IPV were 2.1 and 3.6 times more likely, respectively, to never use condoms or use condoms less than half of instances of sex with their primary partners versus using condoms 100% of the time compared to women in relationships with no IPV. Compared to women who reported never experiencing IPV in their current primary relationships, those who reported past or current IPV by their primary partners were 3.0 times more likely to

report having a partner with a known HIV risk factor. Among participants who reported that they were not HIV-positive, those with a past or current experience of IPV were 2.1, 2.7, and 2.4 times, respectively, to report being “a little,” “somewhat,” or “very” worried, rather than “not at all” worried, about being infected by HIV compared to women who reported no IPV in their primary relationships.

When analyses were restricted so as to compare only women who reported current (i.e., in the last 6 months) IPV by their current primary male partners ($n = 206$) versus women who reported no instances of IPV ($n = 1297$) in their current primary partnerships, all of the significant relationships remain except never using condoms. Compared to women reporting no IPV within their primary relationships, women who reported current IPV were more likely to report having multiple partners (OR = 3.4), a history of having an STI (OR = 2.7), and a primary partner with known HIV risk factors (OR = 4.0). In addition, compared to women who reported no past or current IPV in their primary relationships, women who reported current IPV were 2.5 times more likely to use condoms less than half of the time with their primary partners versus during every instance of sex. Finally, among the HIV-negative participants in the sample, women who reported current IPV were 1.9, 2.7, and 2.6 times more likely to report being “a little,” “somewhat,” and “very” worried, respectively, than “not at all” worried about becoming infected by HIV compared to HIV-negative women who reported no IPV during their relationships with their current partners. All reported

Table IV. Relationship Among Intimate Partner Violence (IPV) and HIV Risk, Listed with Odds Ratios (ORs) and 95% Confidence Intervals (CIs)

Dependent HIV Risk Variable	Past and/or current IPV				Current IPV			
	OR	95% CI	Adjusted OR ^a	95% CI	OR	95% CI	Adjusted OR ^a	95% CI
>1 partner in last year	2.7	2.0, 3.5	2.9	2.2, 3.8	3.2	2.4, 4.4	3.4	2.5, 4.7
Have/had an STI	2.6	2.0, 3.3	2.5	1.9, 3.3	2.8	2.1, 3.8	2.7	1.9, 3.7
Condom use consistency								
Every time	—	—	—	—	—	—	—	—
More than half of the time	2.2	1.0, 4.6	2.0	0.93, 4.3	1.6	0.72, 3.7	1.5	0.67, 3.5
Half of the time	2.3	1.0, 5.2	2.2	0.96, 5.1	2.0	0.85, 4.9	2.0	0.83, 4.9
Less than half of the time	4.0	1.9, 8.4	3.6	1.7, 7.6	2.9	1.3, 6.4	2.5	1.1, 5.7
Never	2.1	1.2, 3.6	2.1	1.2, 3.7	1.5	0.87, 2.7	1.6	0.86, 2.8
Primary partner with known HIV risk	3.3	2.3, 4.6	3.0	2.1, 4.3	4.2	2.9, 6.0	4.0	2.7, 5.8
Perception of HIV risk ^b								
Not at all worried	—	—	—	—	—	—	—	—
A little worried	1.9	1.3, 2.7	2.1	1.4, 3.0	1.7	1.1, 2.7	1.9	1.2, 3.0
Somewhat worried	2.5	1.6, 3.9	2.7	1.7, 4.2	2.5	1.5, 4.2	2.7	1.6, 4.5
Very worried	2.1	1.5, 3.0	2.4	1.6, 3.4	2.3	1.5, 3.4	2.6	1.7, 3.8

^aAdjusted for age, race/ethnicity, employment status, marital status, and length of relationship.

^bOnly women who were not HIV-positive were included.

ORs are greater than 1.0 at the 95% confidence level.

Several analyses were carried out to examine the sensitivity of the model formulation and these procedures provided further confirmation with respect to the robustness of the observed associations between IPV and HIV risks. Several relevant examples are discussed and results from all analyses involving interaction terms and/or comparing results conducted with different subgroups are available upon request. In one model, the participant's HIV status was added to the group of sociodemographic variables included as covariates in the models used to explore the association between IPV and HIV risk. The results for any lifetime IPV as well as the results examining current IPV indicate that all of the significant relationships between IPV and HIV risk behaviors/perception remain at the 95% confidence level. The maximum likelihood estimates of the ORs changed by less than 5% with one exception: women experiencing current IPV are 4.7 (95% CI = [3.2, 7.1]) times as likely to report having primary partners with a known HIV risk factor compared to women who report no IPV by their primary partners after controlling for sociodemographic factors and the HIV status of the woman. A second set of analyses involved using separate regression models for African Americans and Latinas. Overall, the pattern of significant associations remained unchanged except (1) African American women who reported past and/or current IPV were significantly more likely to report using condoms half of the time versus every time compared to African American women who reported no IPV (adjusted OR = 3.2, 95% CI = [1.1, 9.9]), (2) the significant association between condom use consistency and current IPV remained only for Latinas, and (3) reporting being a little worried versus not at all worried remained significantly associated with current IPV only for African American women. These changes are minor given that the patterns of significance and estimates of effect size for the other attributes within the same HIV risk variables as well as across HIV risk variables were very similar. Finally, another series of models explored the choice and interaction of race/ethnicity variables with language preference due to the conceptual link and empirical low tolerance between these variables; again, using language preference instead of race/ethnicity did not change the patterns of significance among the associations between IPV, HIV risk, and other sociodemographic variables. In summary, the substantive conclusions drawn from the Table IV are not altered based on these and other regression models explored.

DISCUSSION

Findings from this study suggest that a significant proportion of low-income African American and Latina women in intimate relationships had indicators of elevated risk for HIV infection and transmission. Furthermore, the great majority of these women did not consistently use condoms with their primary partners. These findings are consistent with other studies and underscore the fact that HIV protection has not yet been incorporated into the sexual activities of women and men in intimate relationships (El-Bassel *et al.*, 2000; Gilbert *et al.*, 2000; Morrill and Ickovics, 1996; Wingood and DiClemente, 1997). Moreover, the prevalence of IPV among the sample was found to be higher than among women in the general population. One in five women reported experiencing IPV at some point in their current relationships with their primary partners and about one in eight women reported experiencing such abuse in the past 6 months. For comparison, in a recent survey conducted by the National Institute of Justice and the Centers for Disease Control and Prevention with 8,000 women recruited from the general population, prevalence of IPV in the past year was 1.5% (Tjaden and Thoennes, 1998).

Our findings also support other studies on the relationships among sexual HIV risks and IPV. We found that women who reported past or current IPV by their intimate partners tended to report a history of STIs, never using condoms or using condoms during less than half of the instances of sex, and having sexual partners who put them at risk for HIV infection. Among the HIV-seronegative women, those with any experience of IPV by their current partner were more likely to worry about becoming infected with HIV than women who reported no IPV. With one exception (never using condoms), the same relationships were found among women who reported IPV by their current partner within the preceding 6 months. It is important to highlight that women who used condoms less than half the time tended to be at higher risk for IPV than women who always or never used condoms, consistent with other studies (El-Bassel *et al.*, 2002; Harlow *et al.*, 1993; Jemmott and Jemmott, 1991; Quina *et al.*, 1997; Wingood and DiClemente, 1997). Earlier research and speculation about such findings posit either that IPV may arise as a result of the attempt to negotiate condom use or that women tend to relinquish HIV-protective behavior (i.e., condom use) in order to prevent further abuse or because they fear reprisals (El-Bassel *et al.*,

1998; Neighbors *et al.*, 1996; O'Leary and Jemmott, 1995).

Regardless of the directionality, all of these findings emphasize a serious dilemma that some women face: to increase protection from HIV infection at the risk of being abused, or to reduce the chance of experiencing IPV at the risk of being infected by HIV. Woman-initiated or woman-controlled devices, such as the female condom, must be promoted and be available to women in health care settings such that women have additional avenues to protect themselves from HIV. However, because the use of the female condom requires male cooperation, the female condom by itself is unlikely to represent a completely viable solution toward enhanced protection from HIV infection, especially among women experiencing IPV. Female-controlled pharmaceutical interventions, such as microbicides, represent a promising technology for HIV prevention among women experiencing IPV. Efforts to empower women and enhance their perceived rights and abilities to negotiate safer sex with their partners or select partners who will use barrier protection may represent an important avenue for HIV prevention and intervention research among urban minority communities, which carry a disproportionate burden of the HIV epidemic. For women experiencing IPV who wish to remain with their partners, work should focus on identifying and practicing in a safe environment ways to introduce safer sex in a manner that will not further expose them to violent or abusive behavior (e.g., enhancing sexual communication skills).

Perpetrators of IPV represent another important focus for basic behavioral and intervention research. If IPV is a precursor for HIV risk, perpetrators should be educated and held accountable with respect to HIV/STI risk behavior as a form of violence. From a perspective where HIV/STI risk is thought to lead to IPV, interventions with perpetrators of IPV should educate and provide skills on dealing with disclosure and/or knowledge of HIV and STI statuses in a non-violent manner and reinforce that enacting violent or controlling behavior still puts both partners at risk for HIV and STIs. Interventions with men should also normalize the use of barrier protection and sexual communication, introducing and reinforcing the notion that these issues are not signs of infidelity, but are essential or beneficial components to healthier mutual relationships (e.g., talking about sex is a sign of intimacy and trust, condom use may prolong or enhance sexual pleasure for both partners). Finally, if there are common factors (e.g., drug use) that more fully ex-

plain the comorbidity of HIV/STI and IPV, IPV prevention programs such as batterers intervention need to integrate information and activities that seek to ameliorate the common cause. Clearly, there is a need to address the paucity of research on the etiology of the overlap in perpetration of IPV and engagement in HIV/STI risk behavior as well as the continued efforts to identify, empirically validate, and implement interventions with perpetrators of IPV. Certainly, intervention with perpetrators of IPV should be promoted not only as an important public health initiative regarding violence against women, but one that concomitantly addresses the HIV/STI epidemic among urban minority communities, which may be epicenters for these diseases.

Finally, HIV behavioral interventions may be expanded to include couple-based modalities in which the woman and her long-term partner receive the intervention together. This modality may provide a safe place for the couple to learn safer sex communication skills as well as the technical skills to use both female and male condoms. It is also important to point out that couple-based interventions are not appropriate for couples engaged in severely abusive relationships.

The findings from this report also suggest that IPV against women is associated with the male partner's HIV risk behavior. Women with partners who engaged in HIV risk behaviors (e.g., injected drugs, had extraregion affairs, was HIV-positive, etc.) tended to be at higher risk for IPV than their counterparts, consistent with findings from earlier studies with different populations (El-Bassel *et al.*, 2001a; Gilbert *et al.*, 2000). These findings may suggest that the stress of being involved in an intimate relationship with someone who engages in HIV risk behaviors may increase the likelihood of IPV or that those women who are aware of their partners' risk behaviors may increase their risk of IPV while trying to enact protective behaviors to prevent HIV infection from those partners. The connection between IPV and risks of HIV transmission needs to be addressed simultaneously in HIV prevention strategies for women.

We note that the five HIV risk variables are likely to be collinear and that the separate regression models do not allow for inference on whether each variable represents a different HIV risk factor or whether this may be a single relationship measured multiple times. Future analyses will be conducted to investigate the factor structure of HIV risk and/or composite risk indices to capture better theoretically distinct

domains of HIV risk. Future research should also focus on elucidating the mechanisms linking these two public health epidemics, as a cross-sectional study is less well suited to test causal hypotheses in a scientifically rigorous manner.

Some additional limitations with this study should also be mentioned. First, because recruitment was neither random nor systematic, our findings may not be representative of all women in primary health care clinics. Second, this study did not control for important partner-related variables that may have confounded the relationship between IPV and various sexual risk outcomes, such as the partner's substance use or level of financial dependency. Third, the associations between recent IPV and sexual risk indicators may reflect a reporting bias: Women who felt comfortable disclosing IPV and HIV-related risk may have been more likely to report both compared to women who did not feel comfortable with disclosure of such intensely personal information. Fourth, several of our measures covered different time frames (e.g., questions about condom use asked about the past 90 days, whereas questions about number of sexual partners queried about the past year). Many of the aforementioned limitations stem from using data that were drawn from a screening instrument for a larger study. More detailed measures (e.g., number of instances of IPV) and additional important information (e.g., type and extent of participants' drug use) with respect to potentially relevant confounding factors were collected during the subsequent baseline and follow-up assessments during the parent study. However, because one of the study arms involved joint counseling (i.e., both the woman and her partner received the intervention together), women who reported experiencing IPV in their current primary relationship were excluded to ensure that the study did not place them in greater jeopardy with respect to IPV; thus, attempting to link screening data to those collected during the main phase would not allow for valid nor meaningful estimates, especially for women who experienced IPV and, as a result, did not provide additional data as part of the larger study.

Nevertheless, this study has several important implications. The findings clearly indicate that among this sample of women, those who experienced IPV are at very high risk of HIV infection and/or transmission. Efforts to design and implement HIV prevention strategies for abused women in primary health care settings should be redoubled. Such strategies should consider the specific combination of risk-related issues that abused women are more likely to present,

namely failure to use condoms and having sex with a partner who engages in HIV risk behaviors.

The higher prevalence of IPV among our sample of women attending primary care clinics indicates that such locales may constitute an advantageous and important venue for reaching out to women who are experiencing IPV and associated risk for HIV infection and transmission. Screening and assessment for IPV and HIV risks are crucial and must become an integral part of patient treatment. Medical staff need to be trained on how to address these issues and become informed on referral strategies and community resources for domestic violence and HIV services. For example, medical staff and other professionals at primary care settings need to be knowledgeable about the relationship between HIV and IPV. They must also be trained to identify signs of partner abuse and to provide counseling in crisis situations when a patient needs a safety plan and a referral to community-based victim services programs to cope with or escape the abusive situation. Prevention efforts should include educational strategies about abused women's increased risk of HIV infection and transmission as well as strategies on how these women might increase their safety in their primary intimate relationships. Given our findings regarding IPV and various sociodemographic factors, all of these steps must accommodate for cultural and contextual factors that affect disclosure and/or risk (e.g., Latinas may be more reluctant to report experiencing IPV).

In addition, primary care clinics may be an optimal setting to launch an intervention and prevention program on IPV and its connection to HIV risks. Because most patients visit these clinics consistently, the setting provides an opportunity to intervene over an extended period of time on a regular basis. There are no reports in the empirical literature that document an efficacious or effective HIV preventive intervention specifically targeting the overlapping problems of IPV and HIV. Given that the sample in this study was recruited from an area that has one of the highest HIV prevalence rates in the nation, these findings suggest important considerations to more effectively and safely promote HIV prevention among women residing in communities hardest hit by the epidemic. The findings also serve as an additional clarion call and provide further support for the nascent research to develop and empirically validate interventions that target HIV and IPV comorbidity.

Finally, although minority and marginalized populations carry a disproportionate burden of social and economic costs from these epidemics, these issues cut

across all sociodemographic strata. The implications from this study and other efforts to address IPV and HIV in health care settings should allow significant progress to be made in addressing these two prominent public health issues.

ACKNOWLEDGMENTS

This study was supported by a National Institute of Mental Health (NIMH) grant awarded to Nabila El-Bassel (grant No. MH57145). Data in this paper were reported in part at the American Public Health Association 129th Annual Meeting held at Atlanta, Georgia, October 2001. The content presented in this article is solely the responsibility of the authors and does not necessarily represent the official views of NIMH or the Columbia University School of Social Work.

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