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**LIFETIME PREVALENCE OF MALE-MALE IPV PERPETRATION IN A COMMUNITY HEALTH CLINIC-BASED SAMPLE: IMPLICATIONS FOR SELF-REPORTED STI AND CONDOM USE**

MASTER'S THESIS

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## ABSTRACT

Men who engage in sexual behaviors with other men are at high risk for developing a sexually transmitted infection (STI). They also have reduced access to health care services and poorer health outcomes after developing an STI than their white or higher-income counterparts. Intimate partner violence (IPV) is an established risk factor for STI contraction and non-condom use in male-female dyads. Such research on IPV in male-male couples is lacking. The objectives of this study are to document the lifetime prevalence of male-male IPV among an urban, minority community health center-based sample, examine associations between male-male perpetrated IPV and self-reported STI symptomology in the past year, and examine the association of male-male IPV perpetration and lifetime perpetration of forced unprotected sex against another man. We conducted a secondary analysis of data collected through a cross sectional survey of low-income, minority men. We found a lifetime prevalence of IPV perpetration of 58.8%. Nearly 20% of the sample reported ever forcing another man into unprotected sex. One third of the sample (34.1%) reported STI symptoms in the past year. IPV perpetration was highly predictive of perpetration of forced unprotected sex with another man (aOR = 32.3; 95% CI 3.19-328.0). Men reporting perpetration of IPV against another man were more likely to report STI symptoms in the past year (aOR = 4.52; 1.48-13.77). The results of this study provide evidence that male-male IPV is prevalent in low-income, minority populations, and highlights an important physical and mental health burden that is currently under-addressed.

## INTRODUCTION

Men who engage in sexual behaviors with other men are at a disproportionately high risk for the development of a sexually transmitted infection (STI), as compared to men who exclusively engage in sexual behaviors with women.<sup>1-3</sup> A survey of primary and secondary syphilis infections between 2005 and 2008 across twenty-seven US states showed that black and Hispanic men who engaged in sexual behaviors with other men had rates of syphilis infection up to 8.6 and 3.1 times that of their white counterparts over the time period, respectively.<sup>2</sup> Research on communities of men who engage in sexual behaviors with men has shown that within low income and minority groups, these men have reduced access to health care services, poorer health outcomes after contraction of an STI,<sup>4</sup> and higher risk for exposure to HIV than do their higher socio-economic and white counterparts.<sup>5</sup> The prevalence of HIV infection has been shown to be as high as 12.1% in urban minority communities that engage in male-male sexual behavior.<sup>6</sup>

Among the factors that may increase risk for STI infection within romantic sexual relationships (e.g. lack of condom use, multiple partnering), intimate partner violence (IPV) has received considerable attention as a risk factor within the context of heterosexual relationships, particularly, male perpetrated IPV against female partners.<sup>7-9</sup> On a national level, 35.6% of women reported experiencing physical or sexual IPV in their lifetime,<sup>10</sup> and it has been estimated that IPV results in health care and lost productivity costs of more than \$8 billion annually.<sup>11</sup> An important characteristic of IPV, as demonstrated by studies of male perpetration of IPV against females, is the inability for women to negotiate condom use.<sup>12</sup> Male perpetrated IPV against females is an established risk factor for contraction of sexually transmitted infections (STIs) in women<sup>7,13,14</sup> and girls,<sup>15</sup> especially within communities of color.<sup>9</sup> While women's inability to negotiate condom use is one mechanism, research has also shown that men who perpetrate IPV against women are also more likely to engage in high risk sexual behaviors such as multiple partnering and condom non-use.<sup>16</sup> Less is known, however, regarding the role of IPV in increasing the risk of STI infection among men who engage in sexual behaviors with other men.

Research on IPV among male-male couples is lacking. Most research on IPV has focused on male perpetrated IPV against women and girls, with far less work examining IPV among male-male dyads. While population-based research on male-male IPV is lacking, existing studies from university campuses and sexual assault

clinic samples suggest that the frequency of male-male IPV ranges from 12.1<sup>17</sup> to 86.0%.<sup>18</sup> However, such work may not capture an important segment of the population due to reliance on snowball sampling of self-identified gay/bisexual men, namely men who do not openly identify as gay or bisexual, or remain 'closeted'.<sup>19</sup> The effects of IPV perpetration by men against other men—especially in low-income, racial and ethnic minority settings—are not well understood. The inability to use—or request the use—of a condom as the result of intimidation or fear of reprisal by a violent partner has been described in male-female IPV perpetration,<sup>9,20</sup> but may also be an important risk factor for the contraction of sexually transmitted diseases in male-male relationships.<sup>21</sup> Given the increased risk of sexually transmitted infection (STI) inherent in some male-male sexual behaviors,<sup>1-3</sup> differences in sexual mores, attitudes toward condom usage, and multiple partnering;<sup>22</sup> as well as a disproportionately high HIV/AIDS burden in this population as compared to other demographic groups,<sup>6,23</sup> greater insight into the relationship between IPV and STI transmission among men of color who engage in sex with men is needed.

The purpose of the current study is threefold. The first objective is to document the lifetime prevalence of male-male intimate partner violence among an urban, minority community health center (CHC) based sample. The second objective is to examine the association between male-male perpetrated IPV and self-reported STI symptomology in the past twelve months. The final objective is to examine the association of male-male IPV perpetration and lifetime perpetration of forced sex without a condom against another man.

## METHODS

We conducted a secondary analysis of the data collected by the Men's Ecological Systems, Development, and Abuse Study (MESDA), results from which have been described elsewhere.<sup>9,24,25</sup> The MESDA data were generated through an anonymous, cross-sectional survey designed to investigate risk and protective factors related to male perpetration of IPV and other forms of violence. The survey was administered in Boston, MA between January 2005 and December 2006 at three urban community health centers (CHCs): Dorchester, Jamaica Plain, and Roxbury. The participating CHCs were the main source of primary health care services for more than 120,000 men and women annually, with high racial/ethnic minority and immigrant representation (49% African American/Black and 27% Hispanic).<sup>26</sup>

All men presenting to the clinic for any reason (e.g., personally seeking health care services, accompanying a patient, or other reason) who spoke English, Spanish, or Portuguese were approached for participation, as these were the three most predominantly spoken languages in the clinic catchment areas. Recruitment and eligibility screening was performed by trained, graduate research assistants with fluency in the eligible languages. Participant eligibility was as follows: aged 18-35 years, English, Spanish, or Portuguese fluency, presentation to the clinic. 3,430 men were approached for enrollment during the survey administration period. 2,229 men (65%) agreed to participate in the survey. Lack of time (58%), waiting for an appointment (41%), and other (1%) were reasons cited for refusal of participation. A research assistant obtained verbal consent from each participant in a private room. Consenting participants completed the survey using an audio computer-assisted survey instrument (ACASI). ACASI technology allowed for self-administration of the surveys, which helped to preserve the privacy of responses and reduce social desirability bias, as well as remove literacy barriers by incorporating audio playback of survey questions in each of the eligible languages. Prior research has demonstrated the facility of ACASI technology for the investigation of violent and sexual behaviors.<sup>27,28</sup> After completion of the survey, the participants received a \$20 gift card and information regarding general and mental health resources in their community, including resources targeted specifically at violence prevention. Onsite counseling was available at each CHC.

In order to capture IPV occurring in the broad spectrum of male-male sexual behavior and within each behavioral identity given sampling concerns in LGBT research,<sup>19,29</sup> we used a combination of self-reported

sexual identity, lifetime, and past year same-sex sexual experiences as the basis of our sample. Figure 1 depicts a schematic of the sample selection process. Three percent of the respondents were excluded from the analysis due to data irregularities (e.g., responding “not applicable” to all survey questions). 172 of the remaining respondents identified their sexuality as “bisexual,” “mostly homosexual,” or “completely homosexual.” 104 of these men reported ever having sexual intercourse with another man. Ninety-four of these men reported homosexual intercourse in the past twelve months. Nine of these respondents did not have complete response profiles for the exposure and outcome variables of interest and were excluded, resulting in an analytic sample of 85 individuals. The secondary data analysis was granted an exemption by the Yale University Human Subjects Committee.

## MEASURES

Lifetime history of male-perpetrated IPV against a male partner was assessed based on responses to nine questions adapted from the Conflict Tactics Scale 2 (CTS-2)<sup>30</sup> and the Sexual Experiences Survey (SES).<sup>31</sup> Six questions addressed the respondent’s history of physical violence perpetration and three questions addressed the respondent’s history of sexual violence perpetration (e.g., “Have you ever threatened to hit or throw something at or otherwise hurt your boyfriend or male sex partner?” and, “Have you ever needed to use force (like hitting, holding down) to make a man have sex?”). Each of these survey items queried respondents specifically about violence against male partners. Participants’ responses were used to create an individual binary variable representing any lifetime perpetration of IPV against another man. Self-identified sexuality was based on a participant’s response to the following question: “Do you consider yourself: (completely heterosexual/straight; mostly heterosexual/straight; bisexual; mostly homosexual/gay; completely homosexual/gay; don’t know; refuse to answer; not applicable).” Past year STI symptomology was assessed through five symptom-based survey items (e.g., “Have you had any of the following symptoms in the past 12 months: Burning when you urinate or pee?”). The single survey item, “Have you ever made a man have sex without a condom even though he wanted to use one?,” served as the basis for the ever forced sex without a condom variable. Experience of childhood sexual abuse (CSA) was assessed based on two questions assessing childhood experiences: “How many times did an adult or a person at least 5 years older than you: Touch or fondle you in a sexual way, or have you touch their body in a sexual way?” and, “How many times did an adult or a person at least 5 years older than you: Actually have oral or anal intercourse with you?” A response indicating one or more occasions of either experience was classified as positive for CSA. Single survey items were also used to assess STI risk behaviors such as current multiple partnering, current relationship status, and history of infidelity. Demographic characteristics such as age, race/ethnicity, place of birth, education, and employment were measured using single questions adapted from the National Behavioral Risk Factor Surveillance System.<sup>32</sup> All data were self-reported.

## ANALYSIS

All analyses were conducted using SAS version 9.3.<sup>33</sup> Prevalence estimates were generated for the exposure variable of lifetime IPV perpetration, and outcome variables of lifetime perpetration of forced sex without a condom and past year STI symptomology. Chi-square analyses (or Fisher’s exact test, where appropriate) were conducted to test associations between demographic covariates, risk behaviors, and each exposure-outcome pairing. Demographic and risk behavior covariates were also independently tested for association with IPV. A complete case analysis was conducted. The significance level for tests of two-way associations was set at  $p < 0.05$ .

Associations between the exposure and outcomes of interest (of lifetime IPV perpetration, lifetime perpetration of forced homosexual intercourse without a condom, and past year STI symptomology) and demographic and risk covariates were described using maximum likelihood multivariable logistic regression.

Our approach to model building was framed by theoretical rationale and conceptual grounding a priori, rather than the exclusive consideration of empirical associations among variables.<sup>34</sup> The small sample size underscored our models' parsimony. Experience of racial discrimination was excluded from the model because of limited variation and nearly the entire the sample was nonwhite. A significant amount of missing data regarding childhood sexual abuse and the outcomes reduced its utility as a predictor variable. To preserve power, the categorical variable for current relationship status was collapsed into a binary indicator for involvement in a serious relationship.

## RESULTS

### PREVALENCE OF LIFETIME IPV PERPETRATION AND ASSOCIATIONS WITH COVARIATES

Overall, 58.8% (n=50) of men in the sample reported ever perpetrating any act of IPV against a male partner (Table 1). The 22-26 year-old age group showed a significantly lower prevalence of all-type IPV perpetration as compared to all other groups (p=0.037, 31.6% ages 22-26 vs. 60.0% ages 18-21; 76.5% ages 27-30; and, 64.7% ages 31-35). A majority of men who reported perpetration of IPV (68.9%; n=31) also reported at least one experience of childhood sexual abuse (CSA), indicating that CSA was highly associated IPV perpetration among men in this sample (p=0.007). There was no significant difference among the men who reported perpetrating IPV based on race/ethnicity, birth country, employment, education level, relationship status, multiple-partnering, or experience of racial discrimination in this sample, indicating that male-male IPV perpetration was similarly prevalent across a wide array of socio-demographic indicators among the men in our sample.

### PERPETRATION OF FORCED HOMOSEXUAL INTERCOURSE WITHOUT A CONDOM AND ASSOCIATIONS WITH COVARIATES

About one fifth of the sample reported lifetime perpetration of forced sex without a condom against another man, 18.8% (n=16) (Table 2). Two socio-demographic characteristics were highly correlated with the perpetration of forced homosexual intercourse without a condom outcome: lifetime experience of racial discrimination (p=0.002) and sexual intercourse with a female in the past twelve months (p<0.001). Unemployed men were also significantly more likely to report this outcome than men who were employed in full or part-time jobs (29.4% vs. 11.8%; p=0.041). In the bivariate analysis, no statistically significant differences were detected among the men who reported ever forcing a partner to have homosexual intercourse without a condom based on age group, race/ethnicity, education level, or CSA.

### PREVALENCE OF PAST TWELVE-MONTH STI SYMPTOMS AND ASSOCIATIONS WITH COVARIATES

Of the 29 (34.1%) men in the sample who reported experiencing STI symptoms in the past twelve months, having less than a high school education (n=14, 50.0%) was the only covariate that was significantly associated with STI symptomology in the bivariate analysis (p=0.030). No other covariates were significantly associated with report of past year positive STI symptoms in this sample.

### UNADJUSTED AND ADJUSTED ASSOCIATIONS BETWEEN IPV AND STI SYMPTOMOLOGY OR CONDOM USE

Past year IPV perpetration was highly predictive of perpetration of forced sex without a condom against another man [adjusted odds ratio (aOR) = 32.3; 95% CI 3.19-328.0]. Men involved in a serious relationship were 84% less likely to report having ever forced homosexual intercourse with another man (aOR = 0.16; 0.04-0.64). Employment and increased age were also protective in the logistic regression model, although each covariate only approached significance (aOR = 0.28; 0.07-1.17 and 0.88; 0.77-1.01, respectively). Men reporting lifetime perpetration of IPV against another man were over four times more likely to report STI

symptoms in the past twelve months (aOR = 4.52; 1.48-13.77). Increased age was marginally protective against STI symptoms in our model, though once again, the covariate only approached significance (aOR = 0.92; 0.84-1.01). Having multiple concurrent sex partners (male or female) was not significantly predictive of increased odds of self-reported STI symptoms (aOR = 1.58; 0.55-4.57).

## DISCUSSION

This study of an urban, CHC-based sample of low income, primarily racial/ethnic minority men suggests that IPV perpetration is an important correlate of sexually transmitted infections in male-male sexual relationships, both in terms of increased likelihood of perpetration of forced sex without a condom, and, in increased likelihood of STI symptoms. We found a high prevalence of intimate partner violence perpetration at 58.8% of the sample. The results of this study improve our knowledge of the dynamics of IPV perpetration and STI transmission in male-male dyads, and suggest important areas toward which future research should be directed.

Our estimate of the lifetime prevalence of homosexual intercourse (4.7%) is consistent with the findings of Dunkle and colleagues in their study of homosexual behavior, sexual violence, and HIV in men in South Africa, in which the authors reported a 5.4% lifetime prevalence of any consensual sexual activity.<sup>21</sup> Further, our estimate of lifetime homosexual IPV perpetration (1.5%) is also similar to Dunkle and colleagues' population-based prevalence estimate of male-male sexual violence perpetration in South Africa (3.0%).<sup>21</sup> Our estimates of lifetime IPV among men who reported sexual behavior with other men (58.8%) also echo research conducted in a separate CHC-based sample of African American men in Boston who identified as MSM, which found a lifetime prevalence of physical IPV of 50.6%.<sup>35</sup> We found a statistically significant lower level of IPV perpetration in the 22-26 year old age group ( $p=0.037$ , 31.6% ages 22-26 vs. 60.0% ages 18-21; 76.5% ages 27-30; and, 64.7% ages 31-35); however, the marginal significance level and small sample size likely indicate that this finding is circumstantial and not indicative of a wider pattern in the population. Our findings reiterate the small amount of research that has targeted this population and further highlight an unmet public health need in addressing the high level of male-male IPV and associated health risks occurring in low-income, ethnic and racial minority, urban settings.

Similar to Houston and McKirnan,<sup>36</sup> we found a strong correlation between lifetime perpetration of IPV and perpetration of forced sex without a condom in male-male dyads (Table 3), a correlation of behaviors that has also been demonstrated in the literature on the dynamics of heterosexual IPV. Mittal and colleagues showed that women who recently experienced IPV by a male partner reported unprotected sexual intercourse for 73% of their sexual encounters occurring in the previous three months.<sup>37</sup> Decker's survey of women attending a family planning clinic showed that women who reported recent IPV by male partners had increased odds of being forced into unprotected intercourse (aOR = 1.87; 1.51-2.33).<sup>20</sup> The correlation between IPV perpetration and non-condom use in male perpetrated IPV against females and male-male IPV may occur through similar mechanisms. While the present survey of men did not assess feelings of intimidation at requesting condom use during intercourse or refusing sex with an abusive partner, such psychological responses have been shown to be highly predictive of unprotected intercourse in male-female partnerships from clinic samples.<sup>20</sup> We also found that both lifetime experience of racial discrimination and sexual intercourse with a female in the past twelve months were highly correlated with perpetration of forced sex without a condom against another man. The statistical significance of these covariates should be acknowledged with caution, as our sample was small. Despite this, it remains possible that these covariates denote internalized feelings of fear, resentment, or homophobia (i.e. displaying normative sexual behaviors despite strong attraction to the same sex), and might manifest as an act of sexual violence against a vulnerable partner.<sup>35</sup> More research in this area is needed.

Perpetration of IPV was strongly predictive of self-reported STI symptoms among the men in the sample (Tables 3 and 4). Given the strong association between IPV perpetration and CSA demonstrated in the bivariate analysis, as well as the documented links between CSA, risk-taking behavior, and STI infection in the literature,<sup>38</sup> future research should focus on exploring the linkage between IPV perpetration, CSA, and STI transmission in male-male relationships. The correlation we identified between IPV perpetration and forced unprotected sex could also be an important mechanism for STI transmission in this population. Our finding that multiple concurrent sex partners was not predictive of increased STI risk among men in the sample differs from the literature.<sup>6,39,40</sup> This discrepancy might be explained by higher rates of condom use in this population,<sup>22</sup> or, more likely, an artifact due to the small size of the sample. In light of our and others<sup>7-9</sup> finding that IPV perpetration is correlated with increased risk of STI infection, more research is needed to explore this potential association. Increased social stability, as measured by involvement in a serious relationship and employment, appeared to be protective against this outcome, indicating a potential target for prevention efforts.

## STRENGTHS & LIMITATIONS

An important strength of this study lays in the method of data collection. The MESDA survey was specifically developed for the collection of information regarding violence and sexual risk-taking behavior in men of color.<sup>24</sup> Additionally, the use of computer-assisted survey technology helped ensure privacy and improve the reliability of the data collected on violent and stigmatized behaviors.<sup>27,28</sup> An additional strength of the present study lays in its utilization of a CHC-based men's survey, as opposed to a gay venue-based sampling method. By doing so, there is an increased likelihood that a greater diversity of sexual behaviors and identities of men were captured in our analysis than would have been captured using a sampling technique that relied on open acknowledgement of sexual orientation. Lastly, our research represents one of only a small number of studies that attempt to determine levels of IPV perpetration among men who have sex with men in an urban, low-income, racial and ethnic minority setting.

Acknowledging these strengths, there are also important limitations of this study, most important of which, is small sample size. Given that only a subset of the general population engages in male-male sexual relationships, a larger sample would be required to evaluate the research questions with greater validity and reliability. This study lacks the power to detect behavioral associations with statistical certainty. As a result, its conclusions should be considered as hypothesis-generating. Additionally, as this study uses data from a single-administration survey, the cross-sectional nature of its observations precludes our ability to establish causal relationships between exposures and outcomes. Because this work is a secondary analysis of previously collected data, the investigators had no ability to direct the collection of data. The MESDA survey was targeted at heterosexual young men, thus the measures of this study may not fully reflect the population in the current analysis. As with all self-reported data, there is concern over social desirability bias and a loss of power due to generalized under-reporting, although we attempted to address this through the use of ACASI technology. Lastly, it is essential to acknowledge the limitations inherent in studying any sexual minority population. As research in this community is predicated on sampling methods defined by self-reported sexual identity and/or same-sex behavior, when identifying a research sample there is little ability to meet the standards equivalent to sampling a random population,<sup>41</sup> and may not reflect all manifestations of sexuality and sexual behavior.<sup>29</sup> Our CHC-based sample does not reflect the behaviors or experiences of men who seek primary health care services elsewhere.

## CONCLUSION AND RECOMMENDATIONS

This study adds to the scarce amount of literature that describes IPV occurring in male-male sexual relationships and its implications on the transmission of STIs within this population. It provides additional



evidence that male-male IPV perpetration is indeed prevalent in low-income, urban, racial and ethnic minority populations, and highlights an important physical and mental health burden that is currently under-addressed.

Future research on male-male IPV should concentrate on the use of larger, more representative samples from diverse geographic areas in order to build externally valid conclusions regarding the dynamics of male-male IPV. Longitudinal study designs will be essential for establishing a causal relationship between male-male IPV perpetration, victimization, and STI contraction. Such research will facilitate our understanding of IPV in this subset of our communities and help identify the most promising targets for intervention and subsequent amelioration of the burden of violence in this community.

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**Table 1. Description of the sample by socio-demographic characteristics, sexual behavior, history of abuse, and lifetime male-male intimate partner violence perpetration: (N = 85)**

Characteristic	Number <sup>a</sup>	Any IPV	p <sup>†</sup>
<b>Total</b>		50 (58.8)	
<b>Age (years)</b>	28.0 ± 5.5		<b>0.037</b>
18-21	15 (17.7)	9 (60.0)	
22-26	19 (22.4)	6 (31.6)	
27-30	17 (20.0)	13 (76.5)	
31-35	34 (40.0)	22 (64.7)	
missing	0	0	
<b>Race/Ethnicity</b>			0.450
Non-Hispanic white	6 (7.1)	4 (66.7)	
Non-Hispanic black or African American	28 (33.3)	19 (67.9)	
Hispanic/Latino	42 (50.0)	24 (57.1)	
Other	8 (9.5)	3 (37.5)	
missing	1 (1.2)	1 (1.2)	
<b>Place of Birth</b>			0.415
Born outside the US	26 (30.6)	17 (65.4)	
Born in the US	59 (69.4)	33 (55.9)	
missing	0	0	
<b>Employment Status</b>			0.653
Unemployed	34 (40.0)	21 (61.8)	
Employed	51 (60.0)	29 (56.9)	
missing	0	0	
<b>Educational Level</b>			0.804
Less than high school	28 (32.9)	17 (60.7)	
High school or greater	57 (67.1)	33 (57.9)	
missing	0	0	
<b>Relationship Status</b>			0.610
Married	9 (10.6)	4 (44.4)	
In a serious relationship	26 (30.6)	15 (57.7)	
Not in a serious relationship	50 (58.8)	31 (62.0)	
missing	0	0	
<b>Current Sexual Relationship Status</b>			0.256
Multiple current sex partners	30 (36.6)	20 (66.7)	
Single or no current sex partner	52 (63.4)	28 (53.9)	
missing	3 (3.5)	3 (3.5)	
<b>Sex with a female in the past year</b>			0.280
Yes	50 (58.8)	27 (54.0)	
No	35 (41.2)	23 (65.7)	
missing	0	0	
<b>Childhood Sexual Abuse</b>			<b>0.007</b>
Yes	45 (57.0)	31 (68.9)	
No	34 (43.0)	13 (38.2)	
missing	6 (7.1)	6 (7.1)	
<b>Experienced Racial Discrimination</b>			0.536
Yes	59 (69.4)	36 (61.0)	
No	26 (30.6)	14 (53.9)	

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missing	0	0
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<sup>a</sup> Table values are mean  $\pm$  SD for continuous variables and n (column %) for categorical variables. Percentages may not sum to 100% due to rounding.

<sup>b</sup> Table values are n (row %) for binary and categorical variables. Percentages may not sum to 100% due to rounding.

<sup>f</sup> P-value for  $\chi^2$  test.

**Table 2. Ever perpetration of forced sex without a condom (against a man) and current self-reported STI symptoms among men reporting sexual intercourse (men or women) in the past 12 months: (N = 85)**

Characteristic	Number <sup>a</sup>	Ever Forced Sex Without A Condom <sup>b</sup>	p <sup>†</sup>	Past Year Positive STI Symptoms <sup>b</sup>	p <sup>†</sup>
<b>Total</b>		16 (18.8)		29 (34.1)	
<b>Age (years)</b>	28.0 ± 5.5		0.094 <sup>F</sup>		0.100
18-21	15 (17.7)	6 (40.0)		9 (60.0)	
22-26	19 (22.4)	1 (5.3)		4 (21.1)	
27-30	17 (20.0)	3 (17.7)		6 (35.3)	
31-35	34 (40.0)	6 (17.7)		10 (29.4)	
missing	0	0		0	
<b>Race/Ethnicity</b>			0.307 <sup>F</sup>		0.290
Non-Hispanic white	6 (7.1)	2 (33.3)		2 (33.3)	
Non-Hispanic black or African American	28 (33.3)	7 (25.0)		6 (21.4)	
Hispanic/Latino	42 (50.0)	7 (16.7)		18 (42.9)	
Other	8 (9.5)	0		2 (25.0)	
missing	1 (1.2)	1 (1.2)		1 (1.2)	
<b>Place of Birth</b>			0.590		0.120
Born outside the US	26 (30.6)	4 (15.4)		12 (46.2)	
Born in the US	59 (69.4)	12 (20.3)		17 (28.8)	
missing	0	0		0	
<b>Employment Status</b>			0.041		0.852
Unemployed	34 (40.0)	10 (29.4)		12 (35.3)	
Employed	51 (60.0)	6 (11.8)		17 (33.3)	
missing	0	0		0	
<b>Educational Level</b>			0.873		0.030
Less than high school	28 (32.9)	5 (17.9)		14 (50.0)	
High school or GED	57 (67.1)	11 (19.3)		15 (26.3)	
missing	0	0		0	
<b>Current Relationship Status</b>			0.032		0.675
Married	9 (10.6)	2 (22.2)		2 (22.2)	
In a serious relationship	26 (30.6)	9 (34.6)		10 (38.5)	
Not in a serious relationship	50 (58.8)	5 (10.0)		17 (34.0)	
missing	0	0		0	
<b>Sex with a female in the past year</b>			<0.001		0.978
Yes	50 (58.8)	16 (32.0)		17 (34.0)	
No	35 (41.2)	0		12 (34.3)	
missing	0	0		0	
<b>Childhood Sexual Abuse</b>			0.335 <sup>F</sup>		0.123
Yes	45 (57.0)	8 (17.8)		18 (40.0)	
No	34 (43.0)	3 (8.8)		8 (23.5)	
missing	6 (7.1)	6 (7.1)		6 (7.1)	
<b>Experienced Racial Discrimination</b>			0.002 <sup>F</sup>		0.120
Yes	59 (69.4)	16 (27.1)		17 (28.8)	
No	26 (30.6)	0		12 (46.2)	
missing	0	0		0	

<sup>a</sup> Table values are mean ± SD for continuous variables and n (column %) for categorical variables. Percentages may not sum to 100% due to rounding.

<sup>b</sup> Table values are n (row %) for categorical variables. Percentages may not sum to 100% due to rounding.

<sup>†</sup> P-value for  $\chi^2$  test.

<sup>F</sup> Denotes Fisher's exact test.

**Table 3. Crude and adjusted logistic regressions for associations between exposure to IPV perpetration and lifetime perpetration of forced sexual intercourse without a condom against another man among men attending one of three Boston area CHCs between January 2005 and December 2006: (N=85)**

IPV Perpetration	Perpetration of Forced Sex without a Condom		
	Number (%)	Crude Odds Ratio (95% CI)	Adjusted Odds Ratio <sup>a</sup> (95% CI)
Yes	15 (30.0)	14.57* (1.82, 116.47)	32.33* (3.19, 328.0)
No (Ref)	1 (2.9)	1.00	1.00

Note: CI = confidence interval. Logistic regression analysis included only participants with complete responses regarding IPV perpetration, perpetration of forced sex without a condom against another man, and all other covariates.

<sup>a</sup>Adjusted for age, employment, current relationship status.

\*p<0.05.

**Table 4. Crude and adjusted logistic regressions for associations between exposure to IPV perpetration and positive self-reported STI symptomology in the past twelve months among men attending one of three Boston area CHCs between January 2005 and December 2006: (N=82)**

IPV Perpetration	Positive Self-Reported STI Symptomology in the Past Twelve Months		
	Number (%)	Crude Odds Ratio (95% CI)	Adjusted Odds Ratio <sup>a</sup> (95% CI)
Yes	22 (26.8)	3.14* (1.16, 8.53)	4.52* (1.48, 13.77)
No (Ref)	7 (8.5)	1.00	1.00

Note: CI = confidence interval. Logistic regression analysis included only participants with complete responses regarding IPV perpetration, STI symptomology in the past twelve months, and all other covariates.

<sup>a</sup>Adjusted for age, multiple partnering, current relationship status.

\*p<0.05.

Figure 1. Schematic outlining sample selection based on Men's Ecological Systems, Development, and Abuse Study (MESDA) data

