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Intimate partner violence and sex among young men who have sex with men

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Abstract

Objectives—Among young men who have sex with men (YMSM) few studies have examined the relationship between intimate partner violence (IPV) perpetration versus victimization and sexual behaviors.

Methods—Using data from $n=528$ urban YMSM, multinomial logistic regression models were built to examine the distinct relationships between any IPV, victimization, and perpetration with condomless sex in the previous 30 days, controlling for key sociodemographic characteristics.

Results—In this sample of YMSM, lifetime experience of any IPV was associated with increased odds of recent condomless oral (AOR= 1.81, 95% CI = 1.21, 2.72) and anal receptive sex (AOR= 2.29, 95% CI = 1.22, 4.31). IPV victimization was associated with a greater likelihood of condomless receptive anal sex (AOR= 2.12, 95% CI = 1.15, 3.93) while IPV perpetration was associated with increased odds of condomless receptive (AOR= 2.11, 95% CI = 1.14, 3.91) and insertive (AOR= 2.21, 95% CI = 1.06, 4.59) anal sex.

Conclusions—Among YMSM, reports of both IPV perpetration and victimization were associated with increased odds of recent condomless sex. These findings indicate that the need for IPV prevention and intervention programs for this new generation of YMSM is highly warranted.

Intimate partner violence (IPV) may be a common experience among young gay, bisexual, and other young men who have sex with men (YMSM), with prior research indicating that lifetime prevalence of psychological/emotional victimization ranges from 41% to 59%, physical victimization from 23% to 66%, and sexual victimization from 18–50% [1–4]. With regards to perpetration of different forms of IPV, these same studies suggest that more than one third of YMSM have lifetime experience of at least one type of IPV perpetration [1–4]. These prevalence estimates likely vary due to differences in study methodology, but all point to a significant public health issue that merits additional investigation for its impact on the mental, psychosocial and physical well being of YMSM who are affected by IPV.

Despite these descriptive findings on the prevalence of IPV, few studies examine the association of IPV and mental and physical health problems specifically in YMSM. The extant information that is available on these relationships come from studies of adult men who have sex with men (MSM) and indicate that IPV is associated with substance abuse, HIV infection, depression, and other mental and physical health problems [5–9]. Additionally, IPV is associated with condomless anal and oral sex among adult MSM [5–9]. To our knowledge only one study examines this relationship among YMSM, and indicates that physical and sexual IPV are strongly related to condomless anal sex, the behavior conferring the greatest risk for HIV transmission [10]. While this study contributes valuable information about this association among YMSM, it has a relatively small sample ($n = 100$)

and low prevalence of IPV likely due to the fact that more than half of individuals in this sample were not in a relationship. Thus, further research with larger, and more diverse samples that are more generalizable to the YMSM community are warranted.

An understanding of the relationship between IPV and condomless sex among YMSM is important for two reasons. First, YMSM are at disproportionate risk for HIV infection, as compared to their heterosexual same aged peers, and are one of the few groups whose HIV infection rates have been rising in recent years [11]. Thus, understanding factors that contribute to increased frequency of condomless anal sex is crucial to understanding the spread of HIV among YMSM. Second, understanding IPV during emerging adulthood is particularly important, as this period of development is a notably vulnerable period of physical, emotional, and sexual growth [12]. During this stage of development, YMSM are often in the process of coming out and negotiating a sexual identity that has historically been stigmatized.

Given this background, the current study seeks to add to the growing literature of IPV among YMSM, by examining the relationship between IPV and condomless anal and oral sex. Using cross-sectional data from a prospective cohort study of racially/ethnically and socioeconomically diverse YMSM in New York City, this study examines experiences of IPV in relation to condomless sex behaviors. Specifically, we examine the relationship between (1) overall IPV, (2) IPV victimization, and (3) IPV perpetration with three distinct sexual behaviors: recent acts of receptive oral, receptive anal, and insertive anal sex without a condom.

METHODS

Study Design and Sample

Data were drawn from the baseline visit of an ongoing prospective cohort study of a diverse sample of young gay, bisexual, and other YMSM living in the New York City metropolitan area. While full study details have been described in detail in prior reports [13, 14], a brief summary is presented here. Participants were recruited from July 2009 to May 2011 with a total of 2,068 people screened for eligibility; of this sample, 600 were eligible for participation and completed baseline assessments. In order to be eligible for the study, participants had to be biologically male, be 18 or 19 years old at the time of screening, report an HIV-negative or unknown status, and report at least one same-sex sexual encounter in the previous 6 months. $n = 6$ participants tested positive for HIV at baseline and were retained in the study. Seventy participants who reported never having a male romantic partner were excluded from this analysis, as were two participants with missing or incomplete data, resulting in a final analytic sample of $n=528$. Written informed consent was obtained from all participants. A federal certificate of confidentiality was granted and the New York University Institutional Review Board approved the study protocol.

At the baseline visit, participants completed an audio computer-assisted survey instrument (ACASI) module that ascertained information on sociodemographic, mental health, and psychosocial measures. In order to obtain data on sexual behaviors during the previous 30

days, a trained staff member administered a Timeline Followback (TLFB) survey, which is a calendar-based recall instrument [15].

Measures

Participants were asked to report their race(s) and whether they identified as Hispanic/Latino. Information on race/ethnicity was examined here as: White non-Hispanic, Black non-Hispanic, Hispanic/Latino, and mixed/other race. Given the age of participants at baseline (ages 18–19), perceived familial socioeconomic status (pSES) was employed in this study, rather than total personal income as participants were most likely to be in school full-time at this point and, therefore, less likely to have their own personal income or accurately recall their familial income. Perceived SES was measured using a 5-point Likert scale (lower, lower middle, middle, upper middle, upper), which was later categorized to create three categories (Lower, Middle, Upper).

Frequency of condomless oral receptive, anal receptive, and anal insertive sexual behavior during the 30 days prior to assessment was obtained using the TLFB instrument [15]. Given the non-normal distribution of these three variables, including a large proportion of zero responses, each sexual activity item was categorized into the following three groups for analytic purposes: no instances in the last 30 days, one instance in the last 30 days, and 2 or more instances in the last 30 days. This method minimizes skew while maintaining variability and has been used in prior studies [16].

Intimate partner violence was measured using a modified version of the Conflict Tactics Scale [17]. This measure includes six yes/no items regarding experiences with verbal/emotional, physical, and sexual victimization and perpetration [*“Have you ever been insulted or verbally abused by a lover or boyfriend?” “Have you ever been hit, kicked, or slapped by a lover or boyfriend?” “Have you ever been sexually abused or raped by a lover or boyfriend?” “Have you ever insulted or verbally abused a lover or boyfriend?” “Have you ever hit, kicked, or slapped a lover or boyfriend?” “Have you ever sexually abused or raped a lover or boyfriend?”*]. The three items regarding victimization and the three items regarding perpetration were collapsed to create two distinct dichotomous variables (“IPV Victimization” and “IPV Perpetration”), which indicate at least one type of lifetime victimization or perpetration experience. This approach of grouping type of IPV experience has been used in previous research [4, 18, 19]. Given the strong association between experiences of victimization and perpetration in this sample ($\Phi = .60, p < 0.01$), a third variable was created to capture any type of lifetime IPV experience (“Any IPV”). This categorization is justified as both experiences (i.e., victimization or perpetration) can be psychologically burdensome, and research suggests that these two experiences co-occur within couples and covary highly within individuals [20].

Analytic Plan

First, descriptive analyses were conducted in order to provide estimates of condomless oral and anal sex behaviors in this analytic sample. Bivariate analyses were used to determine independent associations between IPV (any IPV, IPV victimization, IPV perpetration) and condomless sex (oral receptive, anal receptive, and anal insertive), as well as with salient

covariates of interest (race/ethnicity and pSES). Unadjusted odds ratios (UOR) were obtained and are reported in Table 1. Consistent with a prior study using baseline data from the larger cohort sample [21], bivariate findings from this analysis indicate important differences in condomless sex by race/ethnicity and pSES. Specifically, high pSES is associated with increased frequency of condomless oral sex, whereas low pSES is associated with increased frequency of condomless anal receptive and insertive sex. Participants identifying as White non-Hispanic were more likely to engage in condomless oral and anal insertive sex than those identifying as Black non-Hispanic, Hispanic/Latino, and mixed/other race. Hispanic/Latino identification was associated with increased frequency of condomless anal receptive sex, as compared with White non-Hispanic, Black non-Hispanic, and mixed/other race identification.

Finally, multivariable logistic regression models were constructed to determine the associations of each distinct IPV behavior with each of the three condomless sex variables, while controlling for race/ethnicity and pSES. Specifically, 9 distinct 2-step multivariable logistic regression models were constructed with IPV (any IPV, victimization, perpetration) as the independent variables and condomless sex in the last 30 days (oral receptive, anal receptive, anal insertive) as the dependent variables. In each of these models, race/ethnicity and pSES covariates were entered into the first step and the IPV variables were entered into the second step. Adjusted odds ratios (AOR) are reported in Table 1 to illustrate the extent to which IPV influences the relative odds of engaging in each condomless sex outcome after controlling for these known sociodemographic differences in this sample.

RESULTS

Table 2 provides a summary of the sample ($n=528$) by race/ethnicity and perceived familial SES. The sample is comprised predominantly of racial/ethnic minority YMSM ($n=376$, 71.2%). Of those who identified as non-White, 16.3% identified as Black non-Hispanic, 40.3% as Hispanic, and 14.6% as mixed/other race. Thirty four percent of participants reported lower perceived familial SES, 36.6% middle SES, and 29.4% upper SES. Black non-Hispanic (53.5%), Hispanic (40.8%), and mixed/other race participants (31.2%) reported a higher proportion of lower pSES than White non-Hispanics (15.1%).

In this sample of YMSM, 44.3% ($n=234$) of participants reported at least one type of lifetime IPV experience. More specifically, 39.2% ($n=207$) reported IPV victimization, 30.5% ($n=161$) reported IPV perpetration, 14.4% ($n=76$) only reported victimization (i.e., they did not report perpetration), 5.3% ($n=28$) only reported perpetration, and 55.7% ($n=294$) did not report victimization or perpetration. Furthermore, within this sample, 44.1% of respondents reported 0 instances of condomless receptive oral sex in the last 30 days, 21.4% reported 1 instance, and 34.3% reported 2 or more instances. Regarding condomless anal insertive sex, 87.3% reported 0 instances in the last 30 days, 6.3% reported 1 instance, and 6.3% reported 2 or more instances. In addition, 84.7% of participants reported 0 instances in the last 30 days condomless receptive anal sex, 6.3% reported 1 instance, and 8.9% reported 2 or more instances.

Unadjusted odds ratios describing the independent associations between IPV, race/ethnicity, and pSES with condomless sexual behaviors are reported in Table 1. Overall all models in these analyses indicate a strong association between lifetime experiences of IPV and condomless anal and oral sex.

Any IPV

In the models adjusted for race/ethnicity and pSES, individuals reporting any IPV were more likely to report 2 or more instances of condomless oral sex (AOR = 1.81, 95% CI = 1.21, 2.72), anal insertive sex (AOR = 1.74, 95% CI = .84, 3.61), and anal receptive sex (AOR = 2.29, 95% CI = 2.29, 4.31), as compared to no instances of each of these sex behaviors.

IPV Victimization

In the models adjusted for race/ethnicity and pSES, individuals reporting IPV victimization were more likely to report 2 or more instances of condomless oral sex (AOR = 1.76, 95% CI = 1.16, 2.65) and anal receptive sex (AOR = 2.12, 95% CI = 1.15, 3.93), as compared to no instances of each of these sex behaviors. The association between IPV victimization and condomless anal insertive sex was not statistically significant.

IPV Perpetration

In the models adjusted for race/ethnicity and pSES, individuals reporting IPV perpetration were more likely to report 2 or more instances of condomless oral sex (AOR = 1.69, 95% CI = 1.10, 2.61), anal insertive sex (AOR = 2.21, 95% CI = 1.06, 4.59), and anal receptive sex (AOR = 2.11, 95% CI = 1.14, 3.91), as compared to no instances of each of these sex behaviors.

DISCUSSION

In this sample of YMSM, experiences of IPV were significantly associated with increased frequency of condomless oral and anal sex, even when controlling for race/ethnicity and pSES. Overall, those reporting experiences of IPV were more than twice as likely to have engaged in multiple instances of condomless receptive anal sex, the sexual behavior conferring the highest risk for the transmission of HIV. More specifically, victims of IPV were more than twice as likely to have engaged in 2 or more instances of condomless receptive anal sex, while perpetrators of IPV are more than twice as likely to have engaged in 2 or more instances of condomless receptive *and* insertive anal sex in the last 30 days. The elevated odds of engaging 2 or more instances of condomless oral sex are noteworthy, as more frequent oral sex may be associated with increased risk acquiring STIs. The presence of STIs, in turn, are associated with increased risk for the transmission of HIV [22].

Consistent with previous studies, our findings indicate that IPV experiences are associated with health risk behaviors among MSM [6–10]. However, our study furthers the extant literature by examining the relationship between IPV and condomless sexual behaviors

among a large sample of YMSM, where the prevalence of IPV is consistent with recent prevalence estimates reported by studies among YMSM [1–3].

As noted by previous researchers [10], the relationship between IPV and condomless sex may be driven by power imbalances inherent in relationships where IPV exists. For example, victims of IPV may have reduced ability to negotiate safer sex practices with their partner. More specifically, victims may not feel safe insisting on using condoms with their partner. Relationships that are characterized by extreme forms of violence and control, such as forced sex, may exacerbate the likelihood that safer sex methods are not followed. Perpetrators of IPV, on the other hand, may be more likely to endorse stereotyped masculine gender role ideologies that encourage hypersexuality, impulsivity, and adversarial dyadic attitudes [23]. Additionally, the potential ramifications of such power imbalances are not exclusive to opposite-sex relationships, as historically theorized in gender-based conceptualizations of domestic violence [24]. Finally, given the high association between experiences of victimization and perpetration, it appears that classifying YMSM as either in the role of the victim or the perpetrator is overly simplistic and fails to illustrate the more complex dynamic that likely exists in violent relationships.

Limitations and Strengths

Prior to drawing final conclusions, several study strengths and limitations should be discussed. First, the characteristics of our sample, a cohort of diverse YMSM residing in New York City, preclude generalization to other populations of MSM, such as those who are older or living in non-urban settings. However, given the paucity of research on the relationship between IPV and condomless sex, data from this population may nonetheless contribute valuable information about the relationship between IPV and HIV/STI risk in other populations.

Second, all data were collected via self-report and findings may be subject to response bias. However, the use of ACASI technology likely minimized chances that participants underreported their experiences or responded in a socially desirable manner. Further, the use of the TLFB calendar-based technique as a method of gathering information on sexual behavior enabled us to assess condomless sex behaviors over a 30-day period, which increases accuracy over the more commonly used three- or six-month referent periods [25]. Additionally, our analyses employed trichotomized versions of the condomless sex variables, which likely reduces error due to recall.

Third, we have analyzed our independent variable, IPV status, dichotomously (i.e., no lifetime experience of IPV or any lifetime experience of IPV). We acknowledge that the measurement of IPV experience is fraught with complexities. Although our classification lacks specificity, for example it does not assess the frequency or severity of IPV experiences, we believe that the vulnerability of this population, and the limited research in this area, warrants being more inclusive regarding IPV. Conversely, several of our IPV items assess the participants' perceptions of abuse (e.g., "Have you ever been insulted or verbally abused by a lover or boyfriend?"), rather than discrete behaviors. Thus, if participants do not perceive certain behaviors to be abusive, it is possible that we have underestimated the prevalence of IPV experiences. Additionally, our measure of IPV does

not capture characteristics (e.g., age, sex, race/ethnicity) of the partner with which IPV occurred.

Fourth, we have measured condomless sex behaviors categorically and without regard to partner type (i.e., casual or main partner). We believe that our categorical coding of sexual behaviors allows us to distinguish between potentially incidental sexual behaviors (i.e., 1 instance) and behaviors that may be more patterned (i.e., 2+ instances). Also, we believe that including all condomless sex behaviors, regardless of partner type, is justified in this analysis. Specifically, research demonstrates that YMSM are more likely to engage in condomless sex with a perceived main partner [26]. Moreover, the majority of new HIV infections among YMSM occur within the context of a relationship with a main partner [27]. On the other hand, YMSM may have a greater number of different sexual partners than their heterosexual peers, and increased frequency of sex with different partners may be associated with increased risk for HIV/STIs. As such, privileging sex with one type of partner over another is not warranted.

Fifth, our measures of IPV and condomless sex do not capture with which partners – main or casual, participants in our sample experienced violence or engaged in condomless sex with. As such, our analysis does not assess the dynamics of IPV and condomless sex at the relationship-level. Future analyses may be improved by analyzing the relationship between violence and condomless sex at this level.

Finally, as is the case with cross-sectional analyses, we are unable to draw causal inferences regarding our study findings. Although we cannot draw any causal conclusions regarding the link between IPV and condomless sex risk, the time frames utilized in our measures enable us to infer some temporal precedence. Specifically, IPV is assessed with items regarding lifetime experiences, whereas condomless sex is only measured for the last 30 days. Further research on the link between IPV and HIV/STI risk in YMSM should employ longitudinal methods to help determine causal relationships between these variables.

Implications

Given the significant association between IPV and condomless sex, HIV/STI prevention and intervention efforts may be improved by accounting for the increased risk accorded by IPV. For example, HIV/STI testing sites should consider screening for IPV when conducting HIV/STI testing, as it may be an important risk factor for condomless sex. Other points of access for YMSM, including LGBT community centers, may improve their services by screening for IPV and making appropriate referrals for those YMSM reporting experiences of IPV. Better screening tools to identify victims or perpetrators of IPV should be developed for use with YMSM. Additionally, HIV/STI prevention interventions may be improved by addressing relationship-level factors, including IPV, and how violent relationship dynamics may relate to condomless sexual behaviors.

Also, given the high prevalence of IPV among YMSM, IPV prevention and intervention efforts should be tailored to the unique needs of this vulnerable population. Most existing interventions for victims of IPV were designed for women. As such, they may not be effective for other groups of individuals, including YMSM [28]. Also, although some

interventions have been developed for male perpetrators of IPV, few have been adapted to meet the needs of men in same-sex relationships, such as YMSM [24].

Additionally, a recent analysis finds that there are fewer resources available to men who have experienced IPV, as compared to women [29]. To address this disparity, we recommend an expansion of these resources and the development of new resources, particularly tailored to the needs of YMSM.

Finally, our findings, taken in conjunction with the extant literature [30–32], indicate that IPV may exist in a web of interlocking health problems disproportionately affecting this vulnerable population (e.g., substance abuse, mental health problems, etc.). For example, IPV may increase risk for condomless sex, which in turn increases risk for HIV/STI acquisition. HIV/STI acquisition may increase risk for mental health problems or substance abuse. The synergistic relations between health disparities affecting YMSM call for a more integrated, holistic approach to health promotion in sexual minority young men [33].

Conclusions

Our findings indicate that experiences of IPV victimization and perpetration may be critical in understanding the sexual behaviors that confer HIV/STI risk for YMSM. Of particular importance is the finding that individuals reporting IPV experiences are more than twice as likely to have engaged in multiple instances of condomless receptive anal sex, the sexual behavior that accords the highest risk for HIV transmission. In line with syndemic theory, IPV may be understood as a public health threat that interacts synergistically with other risk factors, placing YMSM at a disproportionately high risk for HIV/STI transmission. Our results suggest that the scope of HIV/STI prevention and intervention efforts should be broadened to include IPV screening and relationship-level components, as YMSM continue to be at risk for health problems in the context of sexual and romantic relationships.

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IMPLICATIONS AND CONTRIBUTION

These findings extend previous research by demonstrating that young men who have sex with men (YMSM) who have experienced intimate partner violence (IPV) are at increased risk for recent condomless anal receptive, anal insertive, and oral sex. Thus, YMSM experiencing IPV may be at increased risk for HIV infection.

Table 1a

Unadjusted OR (95% CI)^a and Adjusted OR (95% CI)^a of Race/Ethnicity, pSES, and Any IPV on Condomless Sex Acts Among n=528 YMSM, P18 Cohort Study, 2009–11

	Oral Receptive UOR 1 instance	2+ instances	AOR 1 instance	2+ instances
Any IPV	1.46 (0.92, 2.30)	1.74 ^c (1.17, 2.58)	1.43 (0.91, 2.23)	1.81 ^c (1.21, 2.72)
Race/Ethnicity				
Hispanic/Latino	1.08 (0.61, 1.91)	0.56 ^b (0.35, 0.90)	1.06 (0.58, 1.94)	0.61 (0.37, 1.01)
Black	0.79 (0.39, 1.60)	0.30 ^c (0.16, 0.57)	0.79 (0.37, 1.65)	0.34 ^c (0.17, 0.67)
Asian/Other	0.90 (0.43, 1.87)	0.44 ^b (0.23, 0.83)	0.89 (0.42, 1.87)	0.46 ^b (0.24, 0.88)
White	1.00	1.00	1.00	1.00
SES				
Low	1.02 (0.57, 1.81)	0.58 ^b (0.36, 1.81)	0.99 (0.54, 1.84)	0.70 (0.41, 1.21)
Middle	0.86 (0.49, 1.54)	0.60 ^b (0.37, 0.97)	0.85 (0.47, 1.54)	0.67 (0.41, 1.11)
High	1.00	1.00	1.00	1.00

Fully adjusted model includes all covariates listed; model fit statistics: $\chi^2(12) = 29.75$, $p = 0.003$; Nagelkerke $R^2 = 6.2\%$.

	Anal Insertive UOR 1 instance	2+ instances	AOR 1 instance	2+ instances
Any IPV	1.09 (0.54, 2.21)	1.77 (0.87, 3.62)	1.06 (0.52, 2.17)	1.74 (0.84, 3.61)
Race/Ethnicity				
Hispanic/Latino	0.92 (0.41, 2.06)	0.38 ^b (0.16, 0.94)	0.84 (0.36, 2.01)	0.26 ^c (0.10, 0.67)
Black	0.62 (0.19, 2.00)	0.85 (0.33, 2.19)	0.57 (0.17, 1.96)	0.56 (0.20, 1.57)
Asian/Other	0.50 (0.13, 1.83)	0.52 (0.16, 1.64)	0.48 (0.13, 1.78)	0.43 (0.13, 3.18)
White	1.00	1.00	1.00	1.00
SES				
Low	1.11 (0.45, 2.76)	2.27 (0.86, 6.02)	1.24 (0.46, 3.34)	3.26 ^b (1.13, 9.43)
Middle	1.21 (0.50, 2.92)	1.68 (0.61, 4.58)	1.27 (0.51, 3.18)	2.23 (0.79, 6.30)
High	1.00	1.00	1.00	1.00

Fully adjusted model includes all covariates listed; model fit statistics: $\chi^2(12) = 15.34$, $p = 0.224$; Nagelkerke $R^2 = 4.7\%$.

	Anal Insertive UOR 1 instance	2+ instances	AOR 1 instance	2+ instances
Any IPV	1.48 (0.73, 3.00)	2.45 ^c (1.32, 4.58)	1.54 (0.75, 3.16)	2.29 ^c (1.22, 4.31)
Race/Ethnicity				
Hispanic/Latino	1.36 (0.53, 3.51)	1.08 (0.54, 2.16)	1.49 (0.55, 4.01)	0.89 (0.42, 1.89)
Black	0.71 (0.18, 2.84)	0.56 (0.19, 1.59)	0.86 (0.21, 3.57)	0.44 (0.15, 1.35)
Asian/Other	3.00 ^b (1.09, 8.24)	0.70 (0.24, 2.01)	3.23 ^b (1.16, 9.01)	0.64 (0.22, 1.87)
White	1.00	1.00	1.00	1.00
SES				

	Anal Insertive UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
Low	0.64 (0.25, 1.64)	1.61 (0.77, 3.39)	0.61 (0.22, 1.64)	1.67 (0.74, 3.79)
Middle	1.02 (0.45, 2.32)	0.87 (0.38, 1.96)	1.00 (0.42, 2.35)	0.88 (0.38, 2.06)
High	1.00	1.00	1.00	1.00

Fully adjusted model includes all covariates listed; model fit statistics: $\chi^2(12) = 22.79, p = 0.030$; Nagelkerke $R^2 = 6.5\%$.

^a 0 instances is reference category;

^b 0.05;

^c 0.01;

^d 0.001.

Table 1b

Unadjusted OR (95% CI)^a and Adjusted OR (95% CI)^a of Race/Ethnicity, pSES, and IPV Victimization on Condomless Sex Acts Among 528 YMSM, Baseline Data P18 Cohort Study, 2009–11

	Oral Receptive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
Victimization	1.53 (0.96, 2.42)	1.75 ^c (1.17, 2.61)	1.50 (0.94, 2.39)	1.76 ^c (1.16, 2.65)
Race/Ethnicity				
Hispanic/Latino	1.08 (0.61, 1.91)	0.56 ^b (0.35, 0.90)	1.08 (0.59, 1.98)	0.63 (0.38, 1.03)
Black	0.79 (0.39, 1.60)	0.30 ^c (0.16, 0.57)	0.81 (0.38, 1.69)	0.35 ^c (0.18, 0.69)
Asian/Other	0.90 (0.43, 1.87)	0.44 ^b (0.23, 0.83)	0.91 (0.43, 1.91)	0.47 ^b (0.25, 0.90)
White	1.00	1.00	1.00	1.00
SES				
Low	1.02 (0.57, 1.81)	0.58 ^b (0.36, 1.81)	0.99 (0.53, 1.83)	0.71 (0.41, 1.21)
Middle	0.86 (0.49, 1.54)	0.60 ^b (0.37, 0.97)	0.85 (0.47, 1.55)	0.68 (0.41, 1.12)
High	1.00	1.00	1.00	1.00
Fully adjusted model includes all covariates listed; model fit statistics: χ^2 (12) = 28.90, p = 0.004; Nagelkerke R^2 = 6.1%.				

	Anal Insertive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
Victimization	1.36 (0.67, 2.77)	1.74 (0.86, 3.52)	1.32 (0.64, 2.70)	1.64 (0.80, 3.39)
Race/Ethnicity				
Hispanic/Latino	0.92 (0.41, 2.06)	0.38 ^b (0.16, 0.94)	0.85 (0.36, 2.02)	0.27 ^c (0.10, 0.69)
Black	0.62 (0.19, 2.00)	0.85 (0.33, 2.19)	0.59 (0.17, 2.02)	0.58 (0.21, 1.62)
Asian/Other	0.50 (0.13, 1.83)	0.52 (0.16, 1.64)	0.49 (0.13, 1.82)	0.44 (0.14, 1.42)
White	1.00	1.00	1.00	1.00
SES				
Low	1.11 (0.45, 2.76)	2.27 (0.86, 6.02)	1.20 (0.45, 3.24)	3.25 ^b (1.12, 9.39)
Middle	1.21 (0.50, 2.92)	1.68 (0.61, 4.58)	1.27 (0.51, 3.16)	2.22 (0.79, 6.24)
High	1.00	1.00	1.00	1.00
Fully adjusted model includes all covariates listed; model fit statistics: χ^2 (12) = 15.32, p = 0.224; Nagelkerke R^2 = 4.7%.				

	Anal Insertive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
Victimization	1.42 (0.70, 2.90)	2.31 ^c (1.26, 4.24)	1.51 (0.73, 3.10)	2.12 ^b (1.15, 3.93)
Race/Ethnicity				
Hispanic/Latino	1.36 (0.53, 3.51)	1.08 (0.54, 2.16)	1.51 (0.56, 4.07)	0.92 (0.43, 1.94)
Black	0.71 (0.18, 2.84)	0.56 (0.19, 1.59)	0.88 (0.21, 3.65)	0.46 (0.15, 1.40)

	Anal Insertive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
Asian/Other	3.00 ^b (1.09, 8.24)	0.70 (0.24, 2.01)	3.29 ^b (1.18, 9.17)	0.66 (0.23, 1.94)
White	1.00	1.00	1.00	1.00
SES				
Low	0.64 (0.25, 1.64)	1.61 (0.77, 3.39)	0.61 (0.22, 1.65)	1.69 (0.75, 3.80)
Middle	1.02 (0.45, 2.32)	0.87 (0.38, 1.96)	1.00 (0.43, 2.36)	0.90 (0.38, 2.08)
High	1.00	1.00	1.00	1.00
Fully adjusted model includes all covariates listed; model fit statistics: $\chi^2 (12) = 21.55, p = 0.043$; Nagelkerke $R^2 = 6.1\%$.				

^a 0 instances is reference category;

^b 0.05;

^c 0.01;

^d 0.001.

Table 1c

Unadjusted OR (95% CI)^a and Adjusted OR (95% CI)^a of Race/Ethnicity, pSES, and IPV Perpetration on Condomless Sex Acts Among 528 YMSM, Baseline Data P18 Cohort Study, 2009–11

	Oral Receptive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
IPV Perpetration	1.19 (0.72, 1.95)	1.55 ^b (1.02, 2.35)	1.18 (0.71, 1.94)	1.69 ^b (1.10, 2.61)
Race/Ethnicity				
Hispanic/Latino	1.08 (0.61, 1.91)	0.56 ^b (0.35, 0.90)	1.06 (0.58, 1.94)	0.59 ^b (0.36, 0.98)
Black	0.79 (0.39, 1.60)	0.30 ^c (0.16, 0.57)	0.77 (0.37, 1.62)	0.32 ^c (0.17, 0.63)
Asian/Other	0.90 (0.43, 1.87)	0.44 ^b (0.23, 0.83)	0.88 (0.42, 1.84)	0.44 ^b (0.23, 0.83)
White	1.00	1.00	1.00	1.00
SES				
Low	1.02 (0.57, 1.81)	0.58 ^b (0.36, 1.81)	1.03 (0.56, 1.91)	0.74 (0.43, 1.26)
Middle	0.86 (0.49, 1.54)	0.60 ^b (0.37, 0.97)	0.86 (0.47, 1.55)	0.68 (0.41, 1.12)
High	1.00	1.00	1.00	1.00
Fully adjusted model includes all covariates listed; model fit statistics: χ^2 (12) = 26.93, p = 0.008; Nagelkerke R^2 = 5.7%.				

	Anal Insertive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
IPV Perpetration	1.39 (0.67, 2.92)	2.03 (1.00, 4.15)	1.41 (0.67, 2.98)	2.21 ^b (1.06, 4.59)
Race/Ethnicity				
Hispanic/Latino	0.92 (0.41, 2.06)	0.38 ^b (0.16, 0.94)	0.81 (0.34, 1.95)	0.24 ^c (0.09, 0.62)
Black	0.62 (0.19, 2.00)	0.85 (0.33, 2.19)	0.56 (0.16, 1.93)	0.53 (0.19, 1.47)
Asian/Other	0.50 (0.13, 1.83)	0.52 (0.16, 1.64)	0.46 (0.12, 1.73)	0.39 (0.12, 1.27)
White	1.00	1.00	1.00	1.00
SES				
Low	1.11 (0.45, 2.76)	2.27 (0.86, 6.02)	1.22 (0.45, 3.29)	3.35 ^b (1.16, 9.68)
Middle	1.21 (0.50, 2.92)	1.68 (0.61, 4.58)	1.26 (0.51, 3.17)	2.29 (0.81, 6.49)
High	1.00	1.00	1.00	1.00
Fully adjusted model includes all covariates listed; model fit statistics: χ^2 (12) = 17.97, p = 0.117; Nagelkerke R^2 = 5.5%.				

	Anal Insertive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
IPV Perpetration	0.91 (0.41, 2.02)	2.15 ^b (1.17, 3.94)	0.88 (0.39, 1.96)	2.11 ^b (1.14, 3.91)
Race/Ethnicity				
Hispanic/Latino	1.36 (0.53, 3.51)	1.08 (0.54, 2.16)	1.53 (0.57, 4.14)	0.84 (0.39, 1.79)
Black	0.71 (0.18, 2.84)	0.56 (0.19, 1.59)	0.84 (0.20, 3.51)	0.41 (0.14, 1.25)

	Anal Insertive			
	UOR		AOR	
	1 instance	2+ instances	1 instance	2+ instances
Asian/Other	3.00 ^b (1.09, 8.24)	0.70 (0.24, 2.01)	3.25 ^b (1.16, 9.07)	0.58 (0.20, 1.70)
White	1.00	1.00	1.00	1.00
SES				
Low	0.64 (0.25, 1.64)	1.61 (0.77, 3.39)	0.64 (0.24, 1.72)	1.78 (0.79, 4.01)
Middle	1.02 (0.45, 2.32)	0.87 (0.38, 1.96)	1.01 (0.43, 2.37)	0.89 (0.38, 2.08)
High	1.00	1.00	1.00	1.00
Fully adjusted model includes all covariates listed; model fit statistics: $\chi^2 (12) = 20.64, p = 0.056$; Nagelkerke $R^2 = 5.9\%$.				

^a 0 instances is reference category;

^b 0.05;

^c 0.01;

^d 0.001.

Table 2

Distribution of Sample Race/Ethnicity by pSES Among 528 YMSM, Baseline Data P18 Cohort Study, 2009–11

	Black non-Hispanic % (n)	White non-Hispanic % (n)	Hispanic % (n)	Mixed/other race % (n)	Total % (n)
Perceived familial SES					
Lower	53.5 (46)	15.1 (23)	40.8 (87)	31.2 (24)	34.1 (180)
Middle	32.6 (28)	32.9 (50)	41.8 (89)	33.8 (26)	36.6 (193)
Upper	14.0 (12)	52.0 (79)	17.4 (37)	35.1 (27)	29.4 (155)
			40.3 (213)		100
Total	16.3 (86)	28.8 (152)	(213)	14.6 (77)	(528)