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Transactional sex risk and STI among HIV-infected female sex workers and HIV-infected male clients of FSWs in India

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Abstract

To describe sex risk behaviors of HIV-infected female sex workers (FSWs) and HIV-infected male clients of FSWs, to evaluate associations between risky transactional sex and number of unprotected transactional sex episodes, and to assess the association between unprotected transactional sex and self-reported sexually transmitted infection (STI). Adult HIV-infected FSWs ($n=211$) and HIV-infected male clients ($n=205$) were surveyed in Mumbai about demographics, STI, and past 90-day and past year sex and substance use histories. Gender-stratified Poisson regression models were used to evaluate associations between four risky transactional sex behaviors (number of transactional sex partners; alcohol use before transactional sex; anal transactional sex; and transactional sex with a known HIV-infected partner) and number of unprotected transactional sex episodes; logistic regression was used to assess the association between unprotected transactional sex and self-reported STI. Twenty-nine percent of females and 7% of males reported any unprotected transactional sex episodes in the past 90 days. Thirty-nine percent of females and 12% of males reported past year STI. Among males, a greater number of transactional sex partners was associated with more unprotected transactional sex episodes (adjusted incidence rate ratio [IRR]=8.2, 95% confidence interval [CI]=1.8–38.4 highest vs. lowest tertile), and any unprotected transactional sex was associated with a higher odds of self-reported STI in the past year (adjusted odds ratio [AOR]=5.6, 95% CI=1.4–22.4). For women, risky transactional sex behaviors were not associated with condom non-use, and unprotected sex was negatively associated with STI (AOR=0.4, 95% CI=0.2–0.9). Reports of condom use during transactional sex were high for these samples. However, standard predictors of unprotected transactional sex (i.e., greater number of partners) and STI (i.e., unprotected sex) only held true for males. Further research is needed to guide an understanding of sex risk and STI among HIV-infected FSWs in India.

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Keywords

female sex workers; male clients of female sex workers; HIV-infected; sex risk; India

Introduction

India has more than two million HIV-infected people, and female sex workers (FSWs) and male clients of FSWs maintain substantially higher HIV prevalence rates than that seen in the general population (National AIDS Control Organization [NACO], 2007; NACO, 2010). While the national HIV rate in India is estimated at 0.2–0.3% (NACO, 2007, NACO, 2010; Joint United Nations Programme on HIV/AIDS (UNAIDS), 2007, 2010), such rates among FSWs and their male clients in high HIV epidemic states such as Maharashtra are 18 and 12%, respectively (NACO, 2007). Ongoing sex risk among these populations poses a threat both to the transactional sex-involved and general population. To date, however, secondary prevention efforts in general and those specific to HIV-infected transactional sex-involved populations have received little attention from national prevention plans (NACO, 2010). More focus is needed toward such efforts and will benefit from understanding the sex risks occurring among these groups.

Within India, there is little research on sex practices among HIV-infected men and women of any population, but particularly those at risk of transmitting the virus via heterosexual sex. As of October 2010, we identified only two published studies examining sex risk behaviors among heterosexual HIV-infected adults in India (Chakrapani, Newman, Shunmugam, & Dubrow, 2010; Sri Krishnan et al., 2007), in addition to work from the current study (Samet et al., 2010). Overall, these studies indicate that although condom use is reported by the majority of HIV-infected adults, inconsistent and non-condom use is common, and barriers to condom use include both behavioral issues such as alcohol as well as attitudinal factors. More detailed consideration of transactional sex behaviors, such as several partners or alcohol use before transactional sex, factors linked with increased risk for HIV/sexually transmitted infection (STI) among FSWs and male clients in India generally (NACO, 2010), was not identified. Nor was there consideration of differences in risk by gender, a likely scenario given the strong affect of gender role dynamics on condom use in India and elsewhere.

To build upon this nascent but growing literature on sex risk among HIV-infected adults in India, the following study examines sex behaviors among HIV-infected adults reporting past year transactional sex involvement. In addition, this study assesses whether risky transactional sex behaviors (e.g., alcohol use at transactional sex) are associated with the number of unprotected transactional sex episodes. Secondarily, this study examined the association between unprotected sex and STI in these populations. Findings can be used to inform the development of secondary prevention efforts in India and with HIV-infected individuals involved with transactional sex, globally.

Methods

The Transactional sex and Alcohol: Justification for a research initiative (TAJ) research team completed surveys on HIV-infected FSWs and HIV-infected male clients of FSWs in Mumbai, India ($n=416$) from November 2008 to February 2009. Participants were recruited by way of service and health agencies focused on these populations in Mumbai, India; details on these agencies are available in previous publication from this study (Samet et al., 2010).

HIV-infected outreach workers at partnering agencies reviewed client lists and selected every fifth individual from the list to be approached and screened for study participation. Those contacted were asked to come to their respective recruitment sites for eligibility screening for the research study. A total of 326 women and 418 men were contacted for study recruitment, of which 246 (75%) women and 372 (89%) men came into their respective recruitment sites. Of these, 216 women and 210 men met the study's eligibility criteria: 18 years or older; HIV-infected; and reporting sex trade involvement in the past year (i.e., selling sex for women, purchasing sex for men) and penile-vaginal or anal sex in the past 30 days. HIV infection was confirmed by medical records brought by the participants. Of those eligible for the study, 5 women and 5 men were unwilling to participate and complete their interviews; they were excluded from the analyses, providing the final sample size of 211 female and 205 male participants.

Participants received a 45 minute interviewer-administered survey in Hindi assessing demographics, alcohol use, sex risk behaviors, and health status. Instruments were developed in English, translated into Hindi and then reviewed by a study investigator fluent in both languages. Discrepancies were resolved in consultation with the US investigators. Participants were given 100 rupees (\$2.50) as compensation for their time in this study. Study procedures were reviewed and approved by the Institutional Review Boards (IRB) of Boston University Medical Campus, Network in Maharashtra by People Living with HIV (NMP+) and the Indian Council of Medical Research.

Measures

Demographic data were single item measures including age, level of education, income, religion, marital status, and number of children.

Sex risk behaviors were assessed for each of the following types of sex partners: spouses, transactional sex partners, and other sex partners. For each of these types of partners, participants were asked the number of these partners they had, as well as the number of vaginal or anal sex episodes and the frequency of unprotected sex episodes (indicated by 1=always, 2=usually, 3=sometimes, 4=rarely, and 5=never) they had with these partners in the past year. They were also asked, again by partner type, whether any of the partners were HIV-infected and what their frequency of alcohol use before sex was with these partners (indicated by 1=always, 2=usually, 3=sometimes, sometimes, 4=rarely, and 5=never). In addition, for each of these types of partners, participants were asked, using a past 90-day timeframe, the number of vaginal sex episodes, unprotected vaginal sex episodes, and occasions of alcohol use before sex; using this same time frame, they were then asked if they had engaged in anal sex with each type of partner and the frequency of condom use during anal sex, if the behavior was reported. All of these items were used to provide descriptive data on sex behaviors of the population; in addition, using data on transactional sex partners in the past 90 days, the following primary outcome variable was developed: number of unprotected transactional sex acts in the past 90 days.

To determine STI history, participants were asked whether they had contracted a sexually transmitted disease other than HIV, such as syphilis, gonorrhea, Chlamydia, trichomoniasis, or genital warts in the past year. Those indicating yes to any of these were classified as having an STI, which also served as one of our outcome variables. We were not able to confirm STI history with medical record. We assessed date of HIV diagnosis to determine length of time since diagnosis.

Data analysis

All analyses for this study were stratified by gender. Poisson regression models were used to assess factors associated with number of unprotected transactional sex episodes in the past 90 days, as this outcome was not normally distributed. The Pearson Chi-square correction was used to account for overdispersion in the data. Four risky transactional sex behaviors were the main independent variables of interest: (1) number of transactional sex partners in the past year (categorized using tertiles); (2) any alcohol use before transactional sex in the past year; (3) any anal transactional sex in the past 90 days; and (4) any known HIV-infected transactional sex partners. The regression models controlled for the following potential demographic confounders: age, religion (Hindu vs. other), any formal education, and marital status (currently vs. formerly vs. never married). A multivariable regression model was fit including the four main independent variables and potential confounders. To avoid possible collinearity, pairwise Spearman correlations between the independent variables and covariates were assessed prior to regression modeling, and no pair of variables with correlation greater than 0.40 was included in the same model. The association between each independent variable and number of unsafe sex acts was quantified using an incidence rate ratio (IRR).

Multiple logistic regression models adjusting for potential confounders were used to assess the association between any unprotected transactional sex in the past 90 days and self-reported past year STI diagnosis. These analyses also controlled for age, religion, education, marital status, and the above described four risky transactional sex behaviors. Secondary analyses were also conducted evaluating any unprotected transactional sex in the past year (rather than past 90 days) as the main independent variable. As described above, to minimize the potential for collinearity, no pair of variables included in the same model was highly correlated. Analyses were performed using SAS software (version 9.1; SAS Institute, Cary, NC).

Results

Demographic characteristics of study participants

Female participants ranged in age from 22 to 49 years; women largely reported no history of formal education (78%) and were unmarried (91%) (Table 1). Male participants ranged in age from 20 to 49 years. Few men reported no formal education (11%), and 63% were unmarried.

Sex partners, unprotected sex and transactional sex behaviors

Among women, sex with spouses and other non-transactional sex partners in the past year was not common; however, for those reporting these behaviors ($n=18$ and $n=33$, respectively), the vast majority ($>70\%$) reported unprotected sex in these contexts (Table 2). All women reported past year transactional sex, as it was an entry criterion for the study, and almost all women (98.6%) reported transactional sex in the past 3 months; 90.5% of women reported unprotected transactional sex in the past year, whereas 28.6% reported this behavior in the past 3 months.

Sex with spouses in the past year appeared more common for men than women in this sample (reported by 39.0% of males vs. 8.5% of females), as did sex with non-transactional sex partners (reported by 22.8% of males vs. 15.6% of females) (Table 2). Among men reporting sex with spouses ($n=80$), one-third reported unprotected sex with these wives; among men reporting sex with other non-transactional sex partners ($n=47$), almost two-thirds reported engaging in unprotected sex in this context.

All participants reported transactional sex in the past year, as it was an inclusion criterion for the study; as expected the mean number of partners reported by women in the past year was far greater than those reported by men: 554 partners (standard deviation [SD]=28.7) vs. 9 partners (SD=8.9), respectively (Table 2). As almost half of women reported HIV diagnosis in the past 3 months, we explored whether in the past 90-day unprotected sex was significantly different for those diagnosed in the past 3 months relative to those diagnosed more than 3 months ago; no significant association was observed. Among men, 26% reported unprotected transactional sex in the past year, and 7% reported unprotected transactional sex in the past 90 days (Table 2).

Alcohol use before transactional sex in the past year was common for both female and male participants, reported by 48 and 67%, respectively; 12% of females and 33% of males reported always using alcohol before transactional sex involvement (Table 3). Anal transactional sex in the past 90 days was reported by 5% of females but only 0.5% of males. Less than 4% of males and females reported transactional sex with known HIV-infected partners.

Past year STI and time since HIV diagnosis

Among females, 39% reported an STI in the past year (Table 3). Mean number of months since HIV diagnosis among women was 6 months (SD=8.9 months). Among males, 12% reported STI in the past year. Mean number of months since diagnosis was 28.5 months for males (SD=36.5 months).

Associations between risky transactional sex behaviors and unprotected transactional sex

Poisson analyses revealed no significant associations between higher risk transactional sex behaviors and number of unprotected transactional sex episodes among female participants; among males, only a high number of transactional sex partners was significantly associated with unprotected sex in the past 90 days (adjusted IRR=8.2, 95% confidence interval [CI]=1.8–38.4, highest vs. lowest tertile) (Table 4). Due to the large proportion of female participants reporting recent HIV diagnosis, exploratory analyses were conducted, stratifying the female sample by whether or not HIV diagnosis occurred in the past 3 months; no difference in findings was observed across these groups in terms of the association between higher risk transactional sex behaviors and number of unprotected transactional sex episodes.

Associations between unprotected transactional sex and STI

For women, unprotected sex in the past 90 days was associated with a lower odds of STI (AOR=0.4, 95% CI=0.2, 0.9), but for men, it was a significant risk factor for STI (AOR=5.6, 95% CI=1.4, 22.4) (Table 5). Again, exploratory analyses were conducted, stratifying the female sample by whether or not HIV diagnosis occurred in the past 3 months; no difference in findings was observed.

Among women, alcohol before transactional sex (AOR=2.0, 95% CI=1.0, 3.8) and having the highest number of transactional sex partners (AOR=3.0, 95% CI=1.4, 6.7, highest vs. lowest tertile) were, however, significantly associated with STI; though this was not revealed to be the case for men. In addition to these behavioral predictors of STI, marital status was also found to be significantly associated with STI for both females and males. For females, those formerly married had a higher odds of reporting an STI diagnosis in the past year compared with those currently married (AOR=3.6, 95% CI=1.0, 12.4). For males, those never married had significantly higher odds of reporting an STI in the past year compared to those currently married (AOR=3.5, 95% CI=1.0, 12.3).

Discussion

The current study documents high rates of condom use among HIV-infected men and women involved in transactional sex, a finding consistent with that seen in previous studies with non-transactional sex involved HIV-infected adults in India (Chakrapani et al., 2010; Sri Krishnan et al., 2007). Such findings are also consistent with growing evidence from India indicating a slowing of the HIV epidemic and substantial reductions in HIV transmission among those involved in transactional sex, which have largely been attributable to increased condom use in this population (NACO, 2007, NACO, 2010; UNAIDS, 2007, 2010).

Nonetheless, unprotected sex is still occurring among a substantial number of these individuals, with patterns differing for women and men. Although the proportion of sex episodes reported as unprotected is relatively low for both male and female participants, it was more likely among FSWs. Further, the large number of sex episodes reported by HIV-infected FSWs (a median of 90 episodes in the past 3 months) maintains a notable number of unprotected transactional sex encounters in this population. Male clients, in contrast, were more likely than FSWs to report non-transactional sex partners, with unprotected sex being more likely with these partners than with FSWs. Overall, these findings indicate that the risk for sex transmission among this HIV-infected sample persists, though to different classes of partners for FSWs and male clients.

As unprotected sex patterns varied by gender, so did associations between unprotected transactional sex and past year STI diagnosis. For men, a greater number of transactional sex partners was associated with more unprotected transactional sex, which in turn was associated with a higher odds of past year STI diagnosis. These findings clearly support the potential utility of behavioral risk reduction approaches to intervention for this population. For women, we were unable to detect associations between risky transactional sex behaviors and frequency of unprotected sex, and unprotected sex was actually associated with lower odds of past year STI. These conflicting findings for females may be indicative of their having less control than male partners or others over condom use in the transactional sex encounter. The observed relationship between unprotected sex being associated with STI may be a consequence of the timeframes used to assess this association or the cross-sectional nature of the study. Such findings demonstrate the need for greater research to understand unprotected sex and STI risk among HIV-infected sex workers, with an eye toward what interventions can reduce these risks.

Some insight into this issue is provided via our secondary analyses, which demonstrate higher odds of STI among FSWs reporting the highest number of transactional sex partners and alcohol use before the transactional sex encounter. Increased STI risk as a consequence of greater exposure from more partners is understandable, but increased risk for STI among those FSWs using alcohol is less clear, particularly as current findings did not demonstrate a significant association between alcohol use and the frequency of unprotected transactional sex episodes. Rather, use of alcohol before transactional sex may be a marker for a context of increased risk. In India, there are venues that provide alcohol and sex together for clients (Go et al., 2011; Schensul, Singh, Gupta, Bryant, & Verma, 2010), and these may pose a greater risk for STI among FSWs working within them. More research is needed to examine whether this in fact may be the case and the potential utility of alcohol venue-based interventions to address both HIV and STI transmission between FSWs and male clients.

Limitations

The current study must be considered in light of a number of study limitations. The sample was drawn from individuals linked to agencies serving HIV-infected FSWs and men in a

single metropolitan area (Mumbai), limiting generalizability of findings. In addition, much of the data in this study came from self-report and is thus subject to both social desirability and recall biases. Finally, associations are based on the use of different timeframes for the assessment period for certain variables and cross-sectional rather than longitudinal data; the latter precludes assumptions of causality based on the observed associations. More research with larger samples and longitudinal data would be useful to confirm current findings and explore in greater detail issues unable to be examined in this study due to reported low frequency events, such as anal sex and sex with HIV-infected partners. The latter issues have been seen to be a major predictor of STI in a previous study within India (Subramanian et al., 2008).

Conclusion

The current study contributes to the small but growing literature on sex risk among HIV-infected adults in India by examining these issues among those at greatest risk for transmission – HIV-infected FSWs and HIV-infected male clients of FSWs. The findings document that ongoing unprotected sex persists at low levels, concentrated for FSWs within transactional sex, and for male clients within non-transactional sex (e.g., sex with wives). In addition, among women, issues of alcohol use at transactional sex and very high numbers of transactional sex partners heighten their odds for STI, whereas unprotected sex did not appear to do this; in contrast among men, unprotected sex does heighten the risk for STI. These findings support the need for gender-tailored secondary HIV prevention efforts in India.

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Table 1

Demographic characteristics of HIV-Infected FSWs ($n = 211$) and HIV-infected male clients of FSWs ($n = 205$) in Mumbai, India.

Characteristic	Female sample		Male sample	
	Mean	SD	Mean	SD
Age, years	30.6	5.0	32.8	5.5
Number of months since diagnosis	6.0	8.9	28.5	36.5
Income, rupees, past month	3107.9	1912.4	4878.9	2004.2
	<i>n</i>	Percentage (%)	<i>n</i>	Percentage (%)
Married				
Currently married	20	9.5	76	37.1
Previously married	105	49.8	41	20.0
Never married	86	40.8	88	42.9
Religion				
Hindu	164	77.7	157	76.6
Muslim	25	11.8	19	9.3
Other	22	10.4	29	14.1
No formal education	165	78.2	23	11.2

Table 2

Types of sex partners and unprotected sex practices by partner type among HIV-infected FSWs ($n = 211$) and HIV-infected clients of FSWs ($n = 205$) in Mumbai, India.

Characteristics	Female sample				Male sample			
	Median	IQR	n	Percentage (%)	Median	IQR	n	Percentage (%)
Sex with a spouse, past year			18	8.5			80	39.0
Number of sex episodes	120.0	(80.0–200.0)			70.0	(41.5–96.0)		
Any unprotected sex			13	72.2% (no./ $n = 13/18$)			31	38.8% (no./ $n = 31/80$)
Sex with other (non-transactional) partners, past year			33	15.6%			47	22.8%
Number of sex episodes	82.0	(40.0–300.0)			16.0	(7–50)		
Any unprotected sex			31	93.9% (no./ $n = 31/33$)			30	63.8% (no./ $n = 30/47$)
Transactional sex, past year			211	100%			205	100%
Number of sex episodes	650	(420.0–800.0)			6	(4–12)		
Number of partners	600	(360.0–720.0)			6	(4–10)		
Any unprotected transactional sex			191	90.5% (no./ $n = 191/211$)			53	25.9% (no./ $n = 53/205$)
Transactional sex, past 3 months			208	98.6%			199	97.1%
Number of sex episodes	90.0	(60.0–190.0)			2.0	(1–3)		
Any unprotected sex			60	28.6% (no./ $n = 60/211$)			13	6.5% (no./ $n = 13/205$)

Table 3

High risk transactional sex behaviors and STI among HIV-Infected FSWs ($n = 211$) and HIV-infected clients of FSWs ($n = 205$) in Mumbai, India.

	Female sample		Male sample	
	<i>n</i>	Percentage (%)	<i>n</i>	Percentage (%)
Frequency of alcohol use before transactional sex				
Always	25	11.8	68	33.3
Usually	11	5.2	13	6.4
Sometimes	39	18.6	54	26.5
Rarely	13	6.2	2	1.0
Never	122	57.8	67	32.8
Any anal transactional sex, past 3 months	11	5.2	1	.5
Any transactional sex with known HIV+ partners	8	3.8	7	3.4
Any STI, past year	82	38.9	25	12.3

Table 4

Associations between risky transactional sex behaviors and number of unprotected sex episodes in the past 90 days among HIV-Infected FSWs ($n = 211$) and HIV-infected male clients of FSWs ($n = 205$).

	Female sample		Male sample	
	Crude IRR (95% CI)	Adjusted IRR ^a (95% CI)	Crude IRR (95% CI)	Adjusted IRR ^a (95% CI)
Number of transactional sex partners, past year ^b				
Low	1.0	1.0	1.0	1.0
Mid-range	1.74 (0.73, 4.17)	1.69 (0.71, 3.98)	0.23 (0.01, 6.09)	0.28 (0.01, 6.37)
High	1.87 (0.79, 4.43)	1.75 (0.72, 4.23)	5.17 (1.06, 25.34)	8.21 (1.76, 38.39)
Any alcohol use before transactional sex, past year	1.14 (0.61, 2.15)	1.07 (0.55, 2.09)	1.72 (0.32, 9.26)	1.32 (0.34, 5.06)
Any anal transactional sex, past 90 days	1.17 (0.32, 4.32)	1.17 (0.31, 4.47)	*	*
Any transactional sex with HIV+ partner, past 90 days	1.80 (0.51, 6.36)	1.49 (0.41, 5.45)	*	*
Any formal education	1.27 (0.63, 2.57)	1.05 (0.51, 2.16)	1.00 (0.10, 10.34)	0.62 (0.09, 4.26)
Muslim/other religion vs. Hindu	1.45 (0.73, 2.88)	1.67 (0.81, 3.43)	0.56 (0.07, 4.12)	0.60 (0.11, 3.33)
Age ≥ 30 years	1.84 (0.91, 3.72)	1.90 (0.89, 4.06)	0.07 (0.01, 0.68)	0.09 (0.01, 0.81)
Marital status				
Former vs. current	0.83 (0.28, 2.49)	1.15 (0.38, 3.50)	0.27 (0.04, 1.96)	0.22 (0.04, 1.29)
Never vs. current	0.87 (0.29, 2.64)	0.97 (0.32, 2.97)	0.21 (0.04, 1.02)	0.27 (0.06, 1.24)

^aPoisson regression models with overdispersion adjusted for age, any formal education, marital status, and religion.

^bCategorized based on tertiles. For women, low = 10–440 partners, mid-range = 450–672 partners, highest = 799–1344 partners. For men, low = 1–4 partners, mid-range = 5–8 partners, high = 9–80 partners.

* Reported by too few participants to allow for analyses.

Table 5

Association between unprotected transactional sex and past year self-reported STI among HIV-infected FSWs ($n = 211$) and HIV-infected male clients of FSWs ($n=205$) in Mumbai, India.

	Female sample		Male sample	
	Crude OR (95% CI)	AOR ^a (95% CI)	Crude OR (95% CI)	AOR ^a (95% CI)
Any unprotected transactional sex, past 90 days	0.55 (0.29, 1.04)	0.44 (0.22, 0.88)	4.91 (1.47, 16.40)	5.62 (1.41, 22.43)
Any alcohol use at transactional sex	1.59 (0.91, 2.78)	1.97 (1.04, 3.75)	1.30 (0.55, 3.47)	1.30 (0.48, 3.50)
Any anal transactional sex	0.33 (0.07, 1.57)	0.25 (0.05, 1.29)	*	*
Any HIV+ transactional sex partners	0.92 (0.21, 3.96)	0.92 (0.19, 4.55)	*	*
No. of transactional sex partners (Tertiles) ^b				
Lowest	1.0	1.0	1.0	1.0
Mid	0.88 (0.43, 1.79)	1.01 (0.47, 2.15)	0.63 (0.23, 1.72)	0.91 (0.29, 2.91)
Highest	2.13 (1.07, 4.22)	3.01 (1.35, 6.72)	0.68 (0.26, 1.81)	1.04 (0.34, 3.19)
Any formal education	1.02 (0.52, 1.98)	0.86 (0.41, 1.82)	0.88 (0.24, 3.21)	1.20 (0.28, 5.06)
Muslim/other religion vs. Hindu	0.97 (0.50, 1.89)	1.36 (0.63, 2.93)	0.81 (0.29, 2.29)	0.60 (0.19, 1.87)
Age ≥ 30 years	1.30 (0.73, 2.32)	1.22 (0.63, 2.35)	0.69 (0.30, 1.60)	0.60 (0.21, 1.71)
Marital status				
Former vs. current	2.25 (0.76, 6.65)	3.60 (1.04, 12.44)	1.64 (0.47, 5.76)	2.13 (0.55, 8.32)
Never vs. current	1.78 (0.59, 5.35)	1.95 (0.57, 6.63)	2.18 (0.79, 5.98)	3.50 (1.00, 12.29)

^aLogistic regression models adjusted for age, any formal education, marital status, religion, and all other risky transactional sex behaviors.

^bThis variable was created based on tertiles. For women, low = 10–440 partners, mid-range = 450–672 partners, highest = 799–1344 partners. For men, low = 1–4 partners, mid-range = 5–8 partners, high = 9–80 partners.

* Reported by too few participants to allow for analyses.