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## Drug-using male clients of female sex workers who report being paid for sex: HIV/STI, demographic and drug use correlates

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### Abstract

**Background**—Research has focused on male clients of female sex workers (FSWs) and their risk for HIV/STIs. Yet, it is unclear whether the commercial sex behaviors of these men are limited to paying for sex, or whether they may also be paid for sex themselves.

**Methods**—We analyzed interview data and HIV/STI test results from 170 drug-using male clients of FSWS in Tijuana, Mexico, to determine the extent to which these men report being paid for sex and the association with positive HIV/STI results.

**Results**—Over one-quarter of men reported having been paid for sex in the past four months. In a multivariate logistic regression model, reporting having been paid for sex was significantly associated with testing positive for any HIV/STI (Adjusted Odds Ratio [AdjOR] 3.53, 95% C.I. 1.33–9.35), being bisexual (AdjOR 15.59, 95% C.I. 4.81–50.53), injection drug use in the past four months (AdjOR 2.65, 95% C.I. 1.16–6.03), and cocaine use in the past four months (AdjOR 2.93, 95% C.I. 1.22–7.01).

**Conclusions**—Findings suggest that drug-using male clients of FSWS may be characterized by unique risk profiles that require tailored HIV prevention interventions.

### Keywords

HIV transmission; male clients; female sex workers; drug use; Mexico

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### Contributors

KDW was responsible for the design of the study, data analysis, and drafting the final manuscript. EVP contributed to the conceptualization of the analysis and preparation of the manuscript. CVC was responsible for overseeing the data collection and contributed to the preparation of the manuscript. CM-R provided guidance on the presentation of results. TLP contributed to the design of the study, conceptualization of the analysis, and presentation of the results.

## INTRODUCTION

The commercial sex trade (i.e., trading sex for money, drugs, or other items of value) has an important influence on epidemics of HIV and other sexually transmitted infections (STIs). The burden of HIV among female sex workers (FSWs) is disproportionately high, indicating a need for the rapid scale up of interventions to prevent new HIV and STI infections.(1, 2) Interventions among FSWs have shown some success in reducing incident HIV/STI infections and rates of unprotected sex.(3) However, a focus solely on intervening with FSWs may neglect important barriers and risk factors introduced by FSWs' commercial clients.(4) Clients are in a position to connect (or "bridge") members of higher- and lower-risk networks through sexual and drug use contact with FSWs, spouses, other non-commercial partners and drug use contacts.(5) Whereas research has focused on male clients of FSWs in terms of their risk behaviors with FSWs (e.g., 6) and to some extent their non-commercial partners (5), an important research question is whether the commercial sex behaviors of these men is limited to paying for sex alone, or whether they may also be paid for sex themselves.

Men who have sex with FSWs exhibit higher HIV/STI risk than men who do not. In a study of clients in Thailand, men who had both FSW and non-FSW sex partners were twice as likely to be HIV-positive and three times as likely to have had another STI in the past year. (7) These "bridges" reported only 30% consistent condom use with their FSW partners and less than 1% consistent condom use with non-FSW partners. Likewise, half of male clients in Tijuana, Mexico who had wives or steady female partners were found to be "bridgers"; that is, to report unprotected sex with both FSWs and their wives or partners.(5) Importantly, male clients' sexual contacts are not limited to female partners. In Australia, 4.6% of male clients of FSWs recruited from a sexual health clinic also reported one or more male sex partners in the past year.(8) In two British studies, 36% and 9% of clients reported sexual contact with other men.(9, 10) Having both male and female sex partners may facilitate more connections between groups that would otherwise not come into contact (e.g., men who have sex with men [MSM] and heterosexual women), when these groups become linked through the sexual behavior of male clients.

In a parallel line of research, male sex workers (MSWs) have also been found to be at risk for HIV and other STIs due to high numbers of sexual partners and inconsistent condom use. (11) In an Indonesian study, HIV prevalence was 3.6% among MSWs; 14% reported sex with paying female clients and 65% reported sex with paying male clients.(12) These men also reported sex with non-paying female partners (31%) and non-paying male partners (32%); 54% reported sex with both male and female partners.(12) A study of MSWs in three Australian cities found that self-reported HIV prevalence was 6.6%.(13) Eighty-four percent of the Australian MSWs reported being in a permanent sexual relationship with a male partner and 15% with a female partner.(13)

Alcohol and drug use appears to be common among both clients of FSWs and MSWs. Drug use, particularly drug use during sex, has been associated with increased odds of reporting unprotected sex (6) and "bridging" behavior among male clients.(5) In Australia, MSWs reported alcohol or drug consumption during 51% of commercial sex encounters.(14) In Madrid, Spain, 16% of MSWs reported injection drug use, and HIV prevalence among IDUs was 60%, compared to 17% among non-IDUs.(15)

Despite the findings that both male clients of FSWs and MSWs are at elevated risk for HIV through both sex and drug use and report a variety of sexual partner types including both paid and paying partners, very little research exists examining the overlap of these behaviors in a single population. To that end, the primary aim of the current study was to examine the

extent to which drug-using male clients of FSWs have also been paid for sex. We hypothesized that men who reported paying partners (i.e., partners who paid them for sex) would report higher sexual and drug risks than men who did not report paying partners.

## METHODS

### Setting

Our sample was recruited in Tijuana, Mexico, where sex work is tolerated in a permitted *Zona Roja* (i.e. “Red Light District”). Previous work has found the prevalence of HIV, syphilis, gonorrhea, and chlamydia among male clients in Tijuana to be 4%, 2%, 2.5%, and 7.5%, respectively, rates comparable to FSWs in the region.(4) Tijuana is located on the Mexico-US border, only 17 miles south of its sister city of San Diego, California. Situated on one of the world’s busiest land border crossings, Tijuana is characterized by high degrees of cross-border mobility and is a destination for US residents seeking drugs and commercial sex in the *Zona Roja*, as well as migrants from Mexico and Central America.(16) Understanding the characteristics of individuals who have the potential to connect sexual and drug using networks both within Mexico and across the border has important implications for stemming the growing and dynamic HIV epidemic in this region.(17) In addition, findings may help inform HIV/STI prevention efforts in other border regions.

### Participants and Recruitment

Data for this analysis were collected as part of an ongoing cross-sectional study of social factors associated with HIV risk among drug-using male clients of FSWs in Tijuana, Mexico. Eligibility criteria included: being 18 years old; reporting use of heroin, methamphetamine, or cocaine in the past 4 months; having paid or traded something of value for sex with an FSW in Tijuana in the past 4 months; and ability to speak English or Spanish. Participants were recruited by indigenous Spanish-speaking outreach workers, who contacted men in areas of the *Zona Roja* characterized by sex work and invited them to return to the study field site to conduct a brief eligibility screener. Upon determination of eligibility, participants provided written informed consent and completed a Computer Assisted Personal Interview (CAPI) administered by Spanish-speaking or bilingual interviewers, depending on the respondent’s preference. Respondents also provided biological specimens for testing for HIV, chlamydia, syphilis, and gonorrhea. After the interview, men were provided with referrals for services, including treatment for HIV/STIs, if appropriate. The Institutional Review Boards of the University of California San Diego (US) and el Colégio de la Frontera Norte (Mexico) approved all study procedures.

### Measures

Demographic questions included: age, race/ethnicity, location of residence, deportation history, and marital status. Sexual orientation was assessed with a single self-report item. Drug use items assessed drug type, frequency of use, mode of administration, and for injection drug users, frequency of receptive syringe sharing (RSS). Sexual behavior items included asking the respondent to give the number of sexual partners in the past four months in each of the following categories: regular female (e.g., a girlfriend or spouse), casual female (i.e., someone you see only occasionally), paid female (i.e., a woman you paid for sex), paying female (i.e., a woman who paid you for sex), regular male, casual male, paid male, and paying male.

Biological specimens were collected to test for HIV/STIs. The protocol included testing for HIV, Syphilis, *Neisseria gonorrhoeae*, and *Chlamydia trachomatis*. The Advanced Quality™ Rapid Anti-HIV (1&2) test was used to detect the presence of HIV antibodies. Reactive and indeterminate specimens were re-tested with a second rapid test and confirmed through

HIV-1, 2 serum antibody enzyme immunoassay (EIA) and indirect fluorescent antibody (IFA) tests. The One Step Syphilis test (IND Diagnostic Inc., Delta, Canada) was used to conduct syphilis serology. All reactive samples were subjected to the rapid plasma reagin (RPR) test and the *T. pallidum* particle agglutination assay (TPPA). Urine samples were tested using the Gen-Probe Aptima Combo 2<sup>®</sup> Assay for *C. trachomatis* and *N. gonorrhoeae* tests.

## Analysis

Our analysis plan was designed to address three aims: 1) to examine the prevalence of various sex partner types (e.g., male regular, male paying, female regular, female paying, etc.) reported by a sample of male clients of FSWs, 2) to determine the association between reporting different sex partner types and HIV/STI infection and 3) to investigate the correlates of reporting paying sex partners. Because the total number of partners in each of the categories (i.e., regular female, regular casual, etc.) was small and highly skewed, we collapsed each partner type into a dichotomous indicator of whether or not the respondent named at least one partner of that type. RSS was also dichotomized into any vs. no syringe sharing. First, we calculated descriptive statistics for all independent variables of interest, including measures of frequency, central tendency and dispersion. Second, we conducted bivariate analysis using logistic regression to determine the association between reporting any sexual partner in each of the eight categories and having a positive HIV/STI test. We collapsed the data for HIV, syphilis, chlamydia and gonorrhea into a dichotomous indicator of any positive HIV/STI test, due to small numbers in some cells that diminished power for subsequent analyses. Third, based on the results from that analysis, we conducted bivariate and multivariate analyses to determine the factors associated with reporting any paying partners (male or female). Bivariate comparisons were made using univariate logistic regression. Factors significant at the  $p < 0.10$  level were entered into a multivariate logistic regression model. The final model retained only those independent variables achieving statistical significance at the  $p < 0.05$  level.

## RESULTS

Between June 2011 and August 2012, 170 drug-using male clients provided sociobehavioral and biological data for this analysis. Overall, participants had a mean age of 39 years old (standard deviation=10.1). Seventy-two percent lived in Mexico (vs. the US), 42% reported having ever been deported from the US, and 87% were Hispanic. A minority (13.9%) reported bisexual sexual orientation; 86.1% identified as heterosexual and none identified as homosexual. Nearly one-third reported being married or in a common law arrangement. Eighteen percent tested positive for any HIV/STI; 8.4% were positive for syphilis (lifetime or current), 4.1% were positive for HIV, and 7.5% were positive for chlamydia (data not shown). None tested positive for gonorrhea.

In terms of the various partner types reported, in addition to reporting at least one paid female partner (i.e., FSW), almost half (47.7%) reported having at least one regular non-commercial female partner in the past four months, while 57% reported at least one casual non-commercial female partner (Table 1). Five percent reported having at least one regular male partner, 7.7% reported having at least one casual male partner, and 2.9% reported having at least one MSW partner.

In terms of paying partners, 19.4% reported having at least one paying female partner and 13.5% reported having at least one paying male partner in the past four months (Table 1). Altogether, 45 (26.5%) male clients in this sample reported having any male or female paying partners. Of those, 24% (n=11) reported having both male and female paying partners, 49% (n=22) reported having only female paying partners and 27% (n=12) reported

having only male paying partners (data not shown). Being positive for HIV/STIs was associated with reporting any female paying partners (Odds Ratio [OR] 2.54, 95% Confidence Interval [C.I.] 1.05, 6.14) and the collapsed indicator of any male/female partners (OR 3.07, 95% C.I. 1.35, 6.99), and was marginally associated with reporting any paying male partners (OR 2.36, 95% C.I. 0.87, 6.37;  $p=0.09$ ).

Table 2 shows the results of the bivariate analysis investigating demographic, sexual, and drug use factors associated with reporting any male/female paying sex partners in the past four months. Reporting any paying partners was more likely among those who reported being bisexual (vs. heterosexual; OR 14.57, 95% C.I. 4.96–42.85), those who reported injection drug use in the past four months (OR 2.78, 95% C.I. 1.09–4.36) and those who used cocaine in the past four months (OR 2.92, 95% C.I. 1.40–6.10). In the final multivariate logistic regression model retaining only significant covariates, clients who were positive for any HIV/STI were 3.5 times as likely to report having paying partners (95% C.I. 1.33–9.35; Table 3). Being bisexual (Adjusted Odds Ratio [AdjOR] 15.59, 95% C.I. 4.81–50.53), injection drug use in the past four months (AdjOR 2.65, 95% C.I. 1.16–6.03), and cocaine use in the past four months (AdjOR 2.93, 95% C.I. 1.22–7.01) also remained independently associated with reporting any paying sexual partners.

## DISCUSSION

In this sample of drug-using male clients of FSWs in Tijuana, more than one-quarter reported that they had been paid or given something of value for sex in the previous four months. While some research has found that MSWs report both paying and paid partners (12), to our knowledge this is the first study to examine these behaviors in a sample of drug-using male clients of FSWs. Forty five men in our sample reported having male and/or female paying partners in the past four months, and having paying partners was significantly associated with an increased likelihood of being positive for HIV/STIs.

The HIV/STI prevalence in our sample was relatively high compared to a sample of male clients recruited from a sexual health clinic in Australia, which found HIV, syphilis, gonorrhea, and chlamydia prevalence of 0.2%, 1%, 0.8%, and 1.8%, respectively.(8) However, it was lower than the 10.9% found by a study in three Indian states.(18) The prevalence in our study is fairly comparable to the HIV/STI prevalence of FSWs in Tijuana.(19) In contrast, Mexico's general population HIV prevalence is low at 0.3%,(20) while studies among Mexican MSWs have found HIV prevalence rates ranging from 3% in Acapulco to 26% in Monterrey.(21)

It is important to consider the additional risk conferred by the high levels of drug use reported by the men in our study. Nearly half of the drug-using clients in our study reported injection drug use in the past four months, and IDUs were nearly three times as likely to report having paying sexual partners during that time period. This association may be indicative of elevated drug dependence that requires a reliable source of income for purchasing drugs. Injection drug use has also been reported as a correlate of HIV infection in other studies of male clients.(22) The majority of our respondents reported using methamphetamine in the past four months, which has been associated with elevated levels of sexual risk behavior and HIV/STIs among clients,(4) FSWs,(19) heterosexual men,(23) and MSM.(24, 25) Interestingly, however, our analysis found cocaine use in the past four months to be independently associated with having paying partners. This may suggest that drug use is localized among various drug-using subgroups, and that clients who are paid for sex in Tijuana are characterized by different drug use patterns than the general population. In a study of young heroin users in Hanoi, Vietnam, Clatts and colleagues found that MSWs were significant more likely than male non-sex workers to report lifetime use of marijuana,

MDMA, amphetamines, cocaine, and morphine.(26) While methamphetamine tends to be localized in the Western United States and Mexico (27) and is quite common among clients of FSWs in Tijuana,(6) a focus on other stimulant drugs such as cocaine may be necessary to reduce HIV/STI risk among particular subgroups. Among IDUs, injecting cocaine has been reported as a significant risk factor for HIV infection, due perhaps in part to the increased frequency of cocaine injection relative to other drugs.(28) Crack cocaine injection has also been associated with increased risk for sexual transmission of HIV among IDUs.(29) If it is the case that clients who are also paid for sex exhibit different drug use profiles than other drug-using clients, interventions tailored to different drug using groups (e.g., cocaine injectors) may be required.

Some limitations of the current findings should be acknowledged. Our study was designed to recruit drug-using male clients, so our findings may not generalize to non-drug using men. However, as others have shown, drug use is quite common in this population (8) and is an independent risk factor for HIV infection.(22) Due to the cross-sectional nature of our design, we have no information about the life history of our respondents or the trajectory of the onset of various risk behaviors. Understanding the various pathways through which individuals initiate drug use and sex work could help guide intervention efforts, since the order in which drugs and sex work are initiated can have important implications.(30) Because of the small sample size we were unable to investigate some differences, such as differences by type of STI or type of paying partner. Larger studies will be required to elucidate more fine-grained differences. Finally, future studies using network approaches in which all sexual partners are enumerated and the characteristics of and connections between those individuals are elicited will help to enhance our understanding of the possible HIV/STI transmission dynamics in these drug and sex networks.

## CONCLUSION

While considerable research has been focused on FSWs to understand risk factors for HIV/STI infection, less attention has been paid to FSW's commercial partners, even though clients are thought to outnumber FSWs 50:1.(31) Our findings suggest that, at least among drug-using men, the behaviors of male clients and male sex workers may overlap in a distinct group of individuals who both pay for and are paid for sex. If condom use and sterile injection practices are inconsistent, men's network position as "bridges" between groups provides the opportunity for HIV/STI transmission between various population sub-groups. Our findings suggest that these men may be distinguished by a unique set of behavioral factors, including injection drug use and cocaine use. More research will be required to investigate the other defining characteristics of this group. In addition, research into the characteristics of the sexual partners who paid or traded for sex with the men in this study and how men's condom use and drug use varies depending on partner type will be needed. In the meantime, prevention efforts should focus globally on increasing condom availability in sex work venues; condom use skills among FSWs, MSWs, and their clients; and social norms influencing the acceptability of condom use in these venues. Interventions may need to be tailored to particular drug-using communities, since drug preference may be a marker for other behavioral characteristics such as commercial sex work.

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**SUMMARY**

In a study of drug-using male clients of female sex workers, 26.5% reported also having been paid for sex. HIV/STI-positive clients were 3.5 times as likely to have been paid for sex as HIV/STI negative clients.

**Table 1**

Association between reporting various types of male and female sex partners and positive results for HIV/STIs (syphilis, Chlamydia, gonorrhea or HIV) among 170 male clients of FSWs in Tijuana, Mexico.

	Total		Any HIV/STI positive (n=30; 17.7%)		HIV/STI negative (n=140; 82.4%)		Odds Ratio	95% Confidence Interval	p-value
	N	%	N	%	N	%			
<b>Reported at least one...</b>									
regular female partner	81	47.7	16	53.3	65	46.4	1.32	0.60, 2.91	0.49
casual female partner	96	56.5	16	53.3	80	57.1	0.86	0.39, 1.89	0.70
regular male partner	9	5.3	2	6.7	7	5.0	1.36	0.27, 6.89	0.71
casual male partner	13	7.7	3	10.0	10	7.1	1.44	0.37, 5.60	0.60
paid male partner	5	2.9	1	3.3	4	2.9	1.17	0.13, 10.88	0.89
paying female partner	33	19.4	10	33.3	23	16.4	2.54	1.05, 6.14	0.04
paying male partner	23	13.5	7	23.3	16	11.4	2.36	0.87, 6.37	0.09
any (male/female) paying partner	45	26.5	14	46.7	31	22.1	3.07	1.35, 6.99	0.007

Demographic, sexual, and drug use factors associated with reporting male or female paying sex partners in the past 4 months among male clients of FSWs (N=170).

Table 2

	Total		Any paying partner (N=45)		No paying partner (N=125)		Odds Ratio	95% C.I.	p-value
	N	%	N	%	N	%			
<b>Demographics</b>									
Age (mean; SD)	39.1	10.1	37.4	9.3	39.8	10.4	0.98	0.94–1.01	0.19
Live in Mexico (vs. US)	122	71.8	33	73.3	89	71.2	1.11	0.51–2.39	0.79
Ever deported from US	71	41.8	22	48.9	49	39.2	1.48	0.75–2.95	0.26
Hispanic	147	86.5	40	55.9	107	85.6	1.35	0.47–3.87	0.58
Bisexual (vs. hetero)	22	12.9	17	37.8	5	4.0	14.57	4.96–42.85	0.0001
Married/common law (vs. separated, divorced, widowed)	54	31.8	14	31.1	40	32.0	0.96	0.46–2.00	0.91
<b>Sex and drug use behavior</b>									
Had sex with a regular female sex partner in the past 4mo	81	47.7	25	55.6	56	44.8	1.54	0.78–3.06	0.22
IDU in past 4mo	78	45.9	27	60.0	51	40.8	2.78	1.09–4.36	0.03
RSS in past 4mo (n=78)	58	74.4	51	77.8	37	72.6	1.32	0.44–3.96	0.62
Non-injection drug use in past 4mo	139	81.8	38	84.4	101	80.8	1.29	0.51–3.24	0.59
Heroin use in past 4mo	84	49.4	24	53.3	60	48.0	1.24	0.63–2.45	0.54
Meth use in past 4mo	140	82.4	40	88.9	100	71.4	2.00	0.72–5.90	0.19
Cocaine use in past 4mo	44	25.9	19	42.2	25	20.0	2.92	1.40–6.10	0.004
Crack use in past 4mo	20	11.8	6	13.3	14	11.2	1.22	0.44–3.40	0.70

**Table 3**

Factors independently associated with reporting any male or female paying sex partners in the past four months among male clients of FSWs (N=170)

	<b>AdjOR</b>	<b>95% C.I.</b>	<b>p-value</b>
Positive for any STI	3.53	1.33–9.35	0.01
Bisexual (vs. heterosexual)	15.59	4.81–50.53	0.0001
IDU in past four months	2.65	1.16–6.03	0.02
Any cocaine use in past four months	2.93	1.22–7.01	0.02