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Sexual Risk, Behavior, and HIV Testing and Status among Male and Transgender Women Sex Workers and their Clients in Lima, Peru

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Abstract

Objectives —To determine the socio-demographics, sexual practices, and HIV prevalence of male sex workers (MSWs), transwomen sex workers (TSWs), and their male clients in Lima, Peru.

Methods —Following ethnographic mapping of sex work venues, we revisited randomly selected venues to survey MSWs, TSWs and their clients.

Results —MSWs and TSW clients are more educated than MSW clients and TSWs. Only 50% of TSW clients have received HIV testing. Self-reported HIV positivity is highest among MSW clients and TSWs.

Conclusion —Notable differences exist between MSWs and TSWs and their clients that can affect the health of these groups and warrant intervention.

Keywords

HIV/AIDS; Peru; sex work; sex work clients; transgender

INTRODUCTION

Though the estimated prevalence of adults with HIV in Peru is 0.4% (0.2–1.3)(Joint United Nations Programme on HIV/AIDS (UNAIDS), 2013), the HIV prevalence among men who have sex with men (MSM) and transgender women (TW) is much higher (12.4% among MSM (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2013) and 29% among TW (Garcia, Bayer, & Cárcamo, 2014)). HIV rates among female sex workers, are much lower – 1% in Peru and 2.4% in Lima (Bautista et al., 2006; Cárcamo et al., 2012; Perla et al., 2012). MSM, in this case including TW, also represent the largest source of HIV transmission in Peru, accounting for 56% of new infections in 2012, according to the 2013 UNAIDS Global Report (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2013). Garcia et al reported a 2.1:1 ratio of men to women living with HIV in Peru, with similar

proportions for other countries in the Andean region, which includes Bolivia, Colombia, Ecuador, Venezuela, and Brazil (García et al., 2014).

The likelihood of HIV transmission is increased by risky sexual practices, including multiple sex partners or sex without a condom. These behaviours place male sex workers (MSWs) and transgender women sex workers (TSWs), groups known to engage in such risky behaviours, at an increased risk of HIV and other sexually transmitted infections (STIs) (Baral et al., 2015; Nureña et al., 2011; Operario, Nemoto, Iwamoto, & Moore, 2011; Poteat et al., 2015; Silva-Santisteban et al., 2011). Bayer et al showed that the transactional nature of sex left low-income MSWs in Lima feeling more at risk for HIV due to their inability to afford condoms, their clients' requests that they not use condoms and their inability to negotiate condom use (Bayer, Garvich, Díaz, Sánchez, et al., 2014). Studies in different contexts have shown that these risks and vulnerabilities increase since low-income or street-based MSWs tend to be younger, less educated, and more dependent on sex work to survive (Bayer, Garvich, Diaz, Sanchez, et al., 2014; Bayer, Garvich, Díaz, García, & Coates, 2014; Infante, Sosa-Rubi, & Cuadra, 2009; Mariño, Minichiello, & Disogra, 2003). In Lima, only 38–50% of MSWs surveyed reported always using a condom during sex with recent male or TW partners and only 23–53% reported doing so with female partners, with lower condom use for low-income versus higher-income MSWs (Bayer, Garvich, Diaz, Garcia, et al., 2014). Studies in Peru, Argentina, and Mexico with MSWs have also shown inconsistent condom use (Bayer, Garvich, Díaz, García, et al., 2014; Infante et al., 2009; Mariño et al., 2003). There are few health and social services available to MSW and TSW populations in Latin America (Baral et al., 2015; Bayer, Garvich, Díaz, Sánchez, et al., 2014; Infante et al., 2009), and many sex workers are homeless or face considerable social stigma (Baral et al., 2015; Bayer, Garvich, Díaz, Sanchez, et al., 2014; Bayer, Garvich, Díaz, García, et al., 2014; Infante et al., 2009; Mariño et al., 2003).

Global research on sex workers and their clients has focused primarily on female sex workers, including in Latin America and Peru (for example, (Crael, Slaymaker, Lyerla, & Sarkar, 2006; Day, Ward, & Perrotta, 1993; Miller et al., 2004; Murray et al., 2007; Patterson et al., 2009; Robertson et al., 2014)). Much less is known about MSWs and TSWs and even less about their clients. Baral et al conducted a global review of MSWs' practices and vulnerabilities, as well as of interventions with this group (Baral et al., 2015), and Poteat et al reviewed the global evidence on TSWs' structural, interpersonal and individual vulnerabilities and interventions with this group (Poteat et al., 2015). Though sex worker clients may represent a bridge population from key to general populations, very few studies have looked at the clients of MSWs and TSWs. A study in Argentina asked MSWs to provide descriptions of their clients to generate client profiles, but did not contact the clients themselves (Mariño, Minichiello, & Disogra, 2004). Grov et al collected 495 responses to an online survey of male clients of MSWs from around the world regarding client characteristics and satisfaction with the encounter (Grov, Wolff, Smith, Koken, & Parsons, 2014). The internet-based nature of this survey means that both the sex workers and clients included are of a higher socioeconomic status than the global population of each group. To our knowledge, there have been no studies comparing MSWs or TSWs and their clients.

Given the paucity of information on MSWs, TSWs, and their clients, we conducted a survey of these groups to study their sociodemographic characteristics, recent sexual practices, and HIV testing history and status.

METHODS

Study setting

Peru, located in Western South America, is home to about 31.1 million people (de la Población, n.d.). The population is distributed across three regions, the coast, Andean highlands and Amazon jungle. The Lima capital metropolitan area, including the neighboring province of Callao, is home to one-third of the population (10.8 million) (Instituto Nacional De Estadística E Informática, 2015, p. 30).

The work situation of young people in Peru has remained unchanged in recent years, with many youth and particularly youth who are transwomen facing challenges. While the adult unemployment rate in Peru has decreased over time (from 2.6% in 2009 to 1.7% in 2014), the youth unemployment rate has remained the same and is much higher (at 7.6% in 2014). Additionally, most youth are hired without work contracts and without benefits such as access to health insurance or retirement funds (Informe Nacional de las Juventudes en el Perú – 2015., 2015). Transwomen have very limited work opportunities in Peru, as in other contexts globally. They look primarily to sex work and hairdressing (Silva-Santisteban et al., 2011).

Sexual diversity rights in Peru were well characterized by Cáceres and co-authors: “certain aspects of the social and legal status of LGBT communities may be regarded as progressive or as having undergone significant improvements... while others still reflect deep social exclusion”. Homosexual acts between consenting adults have been legal since 1924. LGBT activism started in the 1980s and has expanded in the capital and around the country, with organized groups in university settings, grassroots and community-based organizations, and nongovernmental organizations. Since 2004/5, it has been recognized that people should be protected from discrimination due to sexual orientation and that the state – including the military – should not intervene in people’s sex lives (Cáceres, Cueto, & Palomino, 2007). However, homosexuality remains highly stigmatized in Peru, especially in low-income populations and depending on the region of the country. Similarly, policies to protect people of different sexual orientations and gender identities are consistently under debate in the country (Cáceres et al., 2007; Promsex, n.d.).

In Peru, there is significant gender-based violence and discrimination and violence against LGBTI communities, as well as significant violence against MSWs. In 2016, a very high 68% of Peruvian women reported having suffered from some emotional, physical or sexual violence by their partner at least once in their lifetime (“INEI - Perú: Encuesta Demográfica y de Salud Familiar 2016 - Nacional y Regional,” n.d.). A recent report documented 230 cases of physical violence against LGBTI communities over 7 years and 157 homicides among LGBTI communities over 11 years, including 8 murders of LGBTI communities between mid-2015 and mid-2016 (Promsex, n.d.). Our research group explored partner violence among MSWs in Lima. Over half of the MSWs surveyed had been a victim or

perpetrator of violence in the last 6 months, with men reporting similar rates of being a victim (42%) and a perpetrator (39%). Of the 53 MSWs who were recent victims of violence, 27% reported emotional violence, 25% reported physical violence and 16% reported sexual violence. Additionally, 5% reported all three types of violence and 15% reported two types of violence (George et al., 2016).

Study participants

Our study group carried out ethnographic mapping guided by the PLACE (Priorities for Local AIDS Control Efforts) methodology developed by MEASURE Evaluation (Weir, Tate, Hileman, & Khan, 2005). This mapping process is described in brief here and in greater detail in a forthcoming manuscript. The activities described here took place from May to July 2013. First, we defined the geographic boundaries and key populations. We included the 49 districts of the Lima capital metropolitan area (including Callao) and the key populations of MSWs, TSWs and their clients. Second, we identified potential sex work venues during brief interviews with 755 key informants who included personnel from MSM and TW venues, taxi drivers, health personnel and MSWs and TSWs. Third, we visited the potential venues identified to verify that they were sex work venues and describe the venues, confirming a total of 81 MSW and TSW sex work venues.

The final step of the ethnographic mapping was surveys with MSWs, TSWs and their clients. We took separate random samples of MSW sex work venues and TSW sex work venues and revisited the selected venues to carry out the surveys. MSWs and TSWs were considered separate sub-groups during the survey process. We surveyed all SWs at venues with less than 20 SWs and 20 SWs at venues with 20 or more SWs. We surveyed as many clients as were willing to participate.

Data collection activities

For the survey process, we implemented brief surveys. Field workers who had extensive experience working with MSM and TW carried out the surveys as face-to-face interviews. The survey asked the MSWs, TSWs, and MSW and TSW clients about their socio-demographics, recent sexual practices in the last 3 months, and HIV testing history and status. Surveys were applied using smartphones programmed with Magpi (Washington, DC). Magpi enabled us to minimise data collection errors and carry out monitoring of field workers and quality control in real time.

Data analysis

This analysis is limited to sex work venues where we were able to survey at least one sex worker client. We analyzed the survey data using STATA version 14 (College Station, TX). We present descriptive analyses that compare MSW and MSW clients and TSW and TSW clients, including means and 95% confidence intervals (CIs) for continuous variables and frequencies and percentages for categorical variables. SW figures are weighted for the proportion of SWs surveyed at each venue.

Ethical considerations—This study was reviewed and approved by the institutional review boards of the University of California, Los Angeles and the Universidad Peruana

Cayetano Heredia. All participants provided their verbal informed consent prior to initiating their participation in the study.

RESULTS

Sociodemographics

Clients are on average 10 years older than sex workers, who were in their mid-twenties (see Table 1). The majority of MSWs and their clients have complete secondary education (73% vs. 67%), while TSW clients are much more educated than TSWs (93% vs. 34% complete secondary school). In both groups, clients were more likely than SWs to be born in metropolitan Lima.

Sexual identity and stable partnerships

All TSWs identified as transwomen (see Table 1). TSW clients identified primarily as bisexual (54%) or heterosexual (41%), with only 4% considering themselves homosexual. Only 18% of MSWs identified as homosexual, with 59% identifying as bisexual and 23% identifying as heterosexual. 67% of MSW clients identified as homosexual, while the remaining 33% considered themselves bisexual.

TSW clients were much more likely than MSW clients (54% vs. 24%) to have stable partners. Both groups of sex workers were similarly likely to have a stable partner (34 vs. 37%). The vast majority of TSWs' stable partners were male (85%), while TSW clients had primarily female stable partners (88%). More MSWs reported having stable partners that were female (68%) rather than male (28%). MSW clients, on the other hand, were more likely to have stable male (50%) than female (33%) partners.

HIV testing history, HIV status and perceived HIV risk

Lifetime HIV testing was reported by the majority of TSWs (84%), MSW clients (81%) and MSWs (72%), but by only 50% of TSW clients (see Table 1). While most MSWs (82%) reported HIV testing in the last 6 months, only 44% of TSWs did so. Additionally, 33% of MSW clients and 57% of TSW clients reported their last HIV test as more than one year ago. Self-reported HIV status was much higher among TSWs (19%) and MSW clients (18%) than among TSW clients (4%) and MSWs (3%). Among those living with HIV, 77% of MSWs and 71% of MSW clients reported currently receiving antiretroviral therapy (ART), compared to only 37% of TSWs. Among those not living with HIV, when asked about their perceived risk of the disease, sex workers were more likely to believe that they had high to very risk for contracting HIV (47% and 62% for MSWs and TSWs respectively), while their clients mostly believed they had little to some HIV risk (69% and 62% for clients of MSWs and TSWs, respectively).

Recent male and transgender women sex partners

All sex workers and clients had had at least one male or TW sex partner in the past three months within the context of a transaction (see Table 2). TSWs reported a much higher average number of male or TW partners than MSWs (114 vs. 39). On average, MSW clients had slightly more transactional male or TW partners than TSW clients (11 vs. 6).

Outside the context of a transaction, MSWs were the most likely to have had at least one male or TW sex partner in the last three months, with 42% reporting such a relationship. Lower proportions of the other sub-groups reported non-transactional male or TW sex partners: MSW clients (33%), TSWs (28%) and TSW clients (17%). The number of non-transactional partners was much lower than transactional partners, with an average of 5 partners for sex workers, 2 for MSW clients and 0 for TSW clients.

The majority of MSWs (60%) and TSWs (74%) reported being asked at least once to have sex without a condom during a transactional encounter in the past 3 months, but fewer MSWs (24%) than TSWs (42%) then agreed to have sex without a condom. Only 13% of MSW and TSW clients said they ever asked for sex without a condom and 50% of those clients said they engaged in condomless intercourse at least once. In the context of a transaction, more MSWs (94%) than their clients (43%) reported having any insertive anal intercourse, while the results were the reverse for TSWs (45%) and their clients (93%). Consistent condom use during insertive anal intercourse was high for MSWs, MSW clients and TSW clients (91%–100%), but much lower for TSWs (64%). Receptive anal intercourse was higher among MSW clients (73%) and TSWs (99%) than MSWs (29%) and TSW clients (24%). Again, consistent condom use was high (97%–100%) among all groups except TSWs, of whom only 69% said they always used a condom during receptive anal intercourse.

When comparing transactional and non-transactional sex, rates of insertive anal intercourse were similar for clients, while insertive anal intercourse was higher in the transactional versus non-transactional context for MSWs (94% vs. 72%) and TSWs (45% vs. 24%). Consistent condom use during non-transactional insertive anal intercourse was lower than for transactional insertive anal intercourse across the groups, with particularly low condom use (29%) among the few TSWs engaging in non-transactional insertive anal intercourse. Rates of receptive anal intercourse were similar in transactional versus non-transactional sex across groups, with the exception of MSW clients, who reported more receptive anal intercourse with transactional versus non-transactional partners (73% vs. 50%). Consistent condom use during non-transactional receptive anal intercourse was universal for all groups except TSWs, of whom only 48% reported consistent use.

Finally and notably, 14% of MSW clients in the transactional context and 13% of MSWs and 31% of MSW clients in the non-transactional context reported no recent insertive anal intercourse or receptive anal intercourse with their sex partners.

Recent female sex partners

Several of the MSW, MSW client and TSW client participants and very few TSW participants had female sex partners in the past 3 months (see Table 3). Of the 62% of MSWs (n=62) reporting a female partner, 23% had at least one female client and 85% had at least one nontransactional female partner. Of the 2% of TSWs (n=4) reporting female sex partners, 100% of these were within the context of a transaction. One fifth of MSW clients (n=10) reported having female partners, 1 person reporting at least one transactional partner and 9 people at least one non-transactional partner. TSW clients were the most likely to have female partners, with 76% (n=35) reporting at least one in the past 3 months. Among TSW

clients with recent female partners, 3 people reported at least one transactional partner and the remaining 32 people reported at least one non-transactional partner. The average number of female partners was consistently low among all groups, though higher in a non-transactional context (2–4 partners) than a transactional one (0–1 partners).

Among participants with recent female partners, all MSWs, MSWs client, and TSWs clients, as well as 75% of TSWs, reported having vaginal sex with their transactional partners. All MSWs, MSW clients, and TSW clients had vaginal sex with their non-transactional partners. Condom use during vaginal sex varied by circumstance. Only 58% of TSWs said they used a condom during every transactional vaginal sex encounter, lower than in transactional encounters with male and TW partners (64%). About three-fourths (73%) of MSWs always used a condom during transactional vaginal sex, though that dropped to 48% consistent condom use outside of a transaction. The majority of MSW clients (78%) reported consistent condom use during vaginal sex with their non-transactional partners, while TSW clients had much lower consistent condom use during vaginal sex with non-transactional partners (19%). Anal sex was less frequent than vaginal sex across groups, with the exception of TSWs, more of whom reported anal than vaginal sex (80% vs. 70%) with their transactional female partners and higher consistent condom use during anal versus vaginal sex (74% vs. 58%). 54% of MSWs said they had anal sex with their female partners, both during and outside of transactions, though more (71%) had consistent condom use during transactions than outside of them (55%). About half of MSW clients and TSW clients (56% and 44%, respectively) had anal sex with their non-transactional female partners, though more MSW clients (80%) than TSW clients (50%) always used a condom. Finally, overall recent practices with female partners were similar within and outside of transactions.

DISCUSSION

The results of this study add complexity to the current conceptions of the dynamics between MSWs, TSWs, and their clients. As in past studies in other contexts, SW clients were older and earned more than SWs but in contrast with studies elsewhere, MSWs were more educated than their clients. In our context, TSWs were more vulnerable than MSWs, with greater power imbalances with their clients and higher dependence on sex work for their income than MSWs, compounded by lower consistent condom use than all other sub-groups. Clients of TSWs had the lowest HIV testing rates, MSW clients and TSWs had the highest prevalence of self-reported HIV, and most clients of both MSWs and TSWs perceived only little to some risk of HIV.

Clients of sex workers have the “upper hand” in many traditional markers of power, given that they are usually older, more educated and of higher socio-economic status than sex workers. In this study, clients were older and had higher incomes than sex workers. Interestingly, TSWs were much less educated than their clients but MSWs were more educated than their clients. It has been well documented in different global contexts including Peru that MSWs and TSWs tend to be of lower socioeconomic status, lower educational level and younger than their clients, which may lead to power imbalances between sex workers and their clients (Bayer, Garvich, Díaz, Sanchez, et al., 2014; Bayer, Garvich, Díaz, Garcia, et al., 2014; Infante et al., 2009; Mariño et al., 2004; Poteat et al.,

2015; Silva-Santisteban et al., 2011). In two papers from Argentina, 77% of MSWs reported that they could “only manage to get by,” (Mariño et al., 2003) but, when MSWs were asked to classify their clients, they considered 85% of their clients to be rich or middle class (Mariño et al., 2004). In earlier work in Lima, Bayer et al demonstrated that low-income MSWs engage in sex work to “meet their basic needs” of food, water, and shelter, which may make them more hesitant to refuse a client or to negotiate condom use with a client (Bayer, Garvich, Díaz, Sanchez, et al., 2014). This imbalance can affect the way sex workers view their relationships with their clients and limit both their ability to charge more for their services and to require the use of condoms. More work is needed to explore these findings regarding education and other sociodemographic characteristics that may impact the dynamics of the relationship between sex workers and their clients.

TSWs in particular face a unique set of challenges and can be difficult to design interventions for due to their unique challenges and the limited number of interventional studies done with this population. TSWs are especially stigmatised in society, both by family and law enforcement, and often face unsupportive or even unfriendly legal systems (Bockting, Robinson, & Rosser, 1998; Infante et al., 2009; Nemoto, Bödeker, Iwamoto, & Sakata, 2014; Operario et al., 2011; Poteat et al., 2015; Silva-Santisteban et al., 2011; Thompson et al., 2013). They can experience violence from both partners and police (Hawkes et al., 2009; Krüsi, Kerr, Taylor, Rhodes, & Shannon, 2016). This study has shown that TSWs have the lowest condom use rates of all the sub-groups surveyed and, when compared to MSWs, have almost three times as many clients, are much less likely to have graduated high school, earn less per sexual encounter and are more likely to make most of their money from sex work. Additionally, many more TSW clients than TSWs had graduated from secondary school and TSW clients had higher incomes than TSWs, highlighting the sociodemographic divide and likely power imbalance between the two groups. TSWs were also almost twice as likely to engage in insertive anal intercourse during a transactional sexual encounter as during a non-transactional encounter, showing that they may engage in sexual activity during sex work that they do not choose for themselves. Other studies have confirmed that transwomen have a preference for receptive anal intercourse with primary, non-transactional partners, and that transwomen reported increased insertive anal intercourse with non-primary partners (Mariño et al., 2003; Operario et al., 2011). Finally, TSWs reported a higher rate of HIV and their clients were the least likely to have ever been tested for the infection. These results affirm that TSWs are a highly vulnerable population that need sexual health education and support.

Regarding female recent partners, clients of TSWs were most likely and TSWs were very unlikely to have recent female partners. Female partners were more common in the nontransactional context across groups. Consistent condom use with female partners was lower than for male and TW partners. Male partners and clients of female sex workers have long been studied as a potential bridge between high-risk, high-HIV incidence groups and the general population, though evidence has been mixed about the overall risk (Day et al., 1993; Miller et al., 2004; Patterson et al., 2009). Our study results suggest that female partners of MSWs, TSWs, and their clients may be at an increased risk for transmission of HIV and other STIs and that related sexual health education and support is needed.

Imperfect condom usage can help to explain the elevated rates of HIV and other STIs in the MSM and TW populations, as well as illustrate how MSWs and TSWs serve as bridges to the general population in continuing the spread of disease. In China, Zhao et al showed high rates of unprotected anal intercourse among MSWs in transactional and non-transactional sex with male partners, and with female partners (Zhao et al., 2010). In Pakistan, Thompson et al reported that only 31% of MSW and 41% of TSWs had perfect condom use (Thompson et al., 2013). In our study, MSWs reported high consistent condom use during both insertive and receptive anal intercourse while TSWs reported low consistent condom use for both practices. While this may be client driven, Marino et al found that only 6% of MSWs reported that their clients asked for unsafe anal sex (Mariño et al., 2004). In our study, a much higher 60% of MSWs and 74% of TSWs reported being asked for intercourse without a condom at least once in the past three months, although only 13% of MSW and TSW clients reported asking for condomless intercourse in the same time period. It should be noted that TSWs are more likely than MSWs to acquiesce to condomless intercourse. Importantly, condom use during insertive anal intercourse with male partners declined during non-transactional intercourse for MSWs and TSWs. This may be due to increased feelings of intimacy with non-transactional partners, which can lead to riskier behaviour (Bayer, Garvich, Díaz, Sánchez, et al., 2014; Murray et al., 2007; Ngugi, Benoit, Hallgrimsdottir, Jansson, & Roth, 2012).

Past studies have examined HIV testing among MSWs and TSWs and have shown very low testing rates and awareness of the importance and availability of testing (Hawkes et al., 2009; Scheim et al., 2016; Tohme, Egan, Stall, Wagner, & Mokhbat, 2016; van Griensven & de Lind van Wijngaarden, 2010; Zhao et al., 2010). In past studies in several Asian countries and Argentina, a wide range (6–68%) of MSWs reported at least one lifetime HIV test (Marino et al., 2003; van Griensven & de Lind van Wijngaarden, 2010; Zhao et al., 2010). A study by Hawkes et al in Pakistan found that only 1% of MSWs and 5–14% of TSWs had ever been tested (Hawkes et al., 2009; Mariño et al., 2003). There has been little work with clients of MSWs and TSWs, but a study in Cambodia showed that 15% of clients of FSWs had ever had an HIV test (Hor, Detels, Heng, & Mun, 2005). Studies around the world have shown that access to STI testing and prevention are among the greatest barriers to health for MSWs around the world (Baral et al., 2015; Bayer, Garvich, Díaz, García, et al., 2014; Infante et al., 2009; Thompson et al., 2013; Zhao et al., 2010). Our study found higher testing rates in every group but clients of TSWs, an at-risk group that is rarely targeted for health interventions. Only 50% of TSW clients had ever been tested for HIV, and of those tested, only 43% had been tested in the previous year. Despite this, most TSW clients believed they had no to some risk of HIV. MSW clients were also more likely to perceive their risk of contracting HIV as very low, though the self-reported HIV prevalence was among the highest of the sub-groups surveyed (18%). These disparities speak to the need for greater HIV education for the general population, as well as increased education and services for sex workers and their clients.

This study is one of the first globally to compare MSWs, TSWs, and their clients, and in doing so, manages to highlight key points of equality, inequality, and opportunities for intervention. While MSWs and their clients are on more even educational footing than expected, the corresponding gap between TSWs and their clients remains vast. TSWs are

shown to be asked for, and acquiesce to, higher levels of risky sexual behaviours, and to have higher levels of HIV than MSWs. TSW clients are the least likely to have ever been tested for HIV and estimate their risk of disease to be minimal. Overall, none of the groups interviewed had perfect rates of HIV testing and all groups had significant instances of unsafe sexual practices. Though this study focused on male and transgender female persons, our data supports that most participants also have female partners, creating bridges to the general population and possible points of vertical transmission.

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Table 1.

Sociodemographic characteristics, HIV testing history, and perceived HIV risk of male sex workers (MSWs), transwomen sex workers (TSWs), and their male clients, Lima, Peru, 2013

	MSW	MSW weighted	Male MSW clients	TSW	TSW Weighted	Male TSW clients
	N = 100		N = 49	N = 181		N = 46
	% (n)	% (CI)*	% (n)	% (n)	% (CI)	% (n)
Age, mean (CI)	25 (24–26)	25 (22–27)	36 (32–39)	25 (2426)	25 (23–26)	35 (31–38)
Secondary School Graduate	76% (76)	73% (59–84)	67% (33)	36% (66)	34% (22–49)	93% (43)
Born in Metropolitan Lima (vs. Provinces of Peru)	61% (61)	60% (5466)	78% (38)	54% (97)	52% (40–64)	61% (28)
Amount earned in past week, in USD, mean (CI)	118 (95–142)	114 (89–139)	171 (134–207)	123 (113–134)	121 (102–139)	166 (126–206)
Amount earned from sex work in past week, in USD, mean (CI)	83 (62103)	76 (49–103)		113 (104123)	111 (96–126)	
Amount received / paid for last sexual encounter, in USD, mean (CI)	13 (11–15)	12(9–16)	11 (9–12)	9(9–10)	9(7–11)	12 (10–14)
Sexual Identity						
Heterosexual	22% (22)	23% (15–33)	0% (0)	0% (0)	0%	41% (19)
Homosexual	15% (15)	18% (9–31)	67% (32)	0% (0)	0%	4% (2)
Bisexual	63% (63)	59% (42–75)	33% (16)	0% (0)	0%	54% (25)
Transwoman	0%	0%	0%	100%	100%	0%
Has stable partner	39% (39)	37% (27–49)	24% (12)	34% (61)	34% (24–47)	54% (25)
Stable partner identity						
Only male	31 % (12)	28% (19–39)	50% (6)	87% (53)	85% (73–92)	4% (1)
Only female	64 % (25)	68% (53–80)	33% (4)	0% (0)	0%	88% (22)
Only trans	3% (1)	2% (014)	17% (2)	11% (7)	13% (723)	4% (1)
Male and trans	0% (0)	0%	0% (0)	2% (1)	2% (012)	0% (0)
Female and trans	3% (1)	2% (013)	0% (0)	0% (0)	0%	4% (1)
Ever been tested for HIV	73% (73)	72% (58–84)	81% (40)	85% (153)	84% (75–90)	50% (23)
Most recent HIV test						
In past 6 months	79 % (58)	82% (69–91)	28% (11)	46% (71)	44% (32–57)	17% (4)
6 months –1 year	5% (4)	5% (3– 9)	40% (16)	33% (50)	35% (24–48)	26% (6)
1+ years ago	15 % (11)	13% (6–24)	33% (13)	21% (32)	21% (14–30)	57% (13)
Received results of HIV test	96% (70)	96% (92– 98)	98% (39)	92% (140)	92% (82– 97)	100% (23)
Ever tested positive for HIV	4% (3)	3% (0– 14)	18% (7)	21% (29)	19% (12–30)	4% (1)
Is on antiretroviral therapy	1 00% (3)	77% (33–96)	71% (5)	38 % (11)	37% (18–61)	0% (0)
Perceived risk of HIV						
No risk	N=97 7% (7)	7% (6–9)	N=42 7% (3)	N=152 1% (2)	2% (0–5)	N=45 7% (3)
Little to some risk	51% (49)	46% (26– 67)	69% (29)	34% (52)	36% (25– 49)	62% (28)
High to very high risk	42% (41)	47% (27– 68)	24% (10)	64% (98)	62% (49– 74)	31% (14)

* (CI) 95% confidence interval

AI: anal intercourse

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Table 2.

Sexual practices with male and transwomen partners among male sex workers (MSWs), transwomen sex workers (TSWs) and their clients in the last 3 months, Lima, Peru 2013

	Transactional				Non-transactional				
	MSW N = 100 % (n)	MSW weighted % (CI)	MSW clients N = 49 % (n)	TSW N = 181 % (n)	MSW N = 100 % (n)	MSW weighted % (CI)	MSW clients N = 49 % (n)	TSW N = 181 % (n)	TSW clients N = 46 % (n)
Any male partner at all:	100% (100)	100%	100% (49)	100% (181)	100% (100)	100% (100)	100% (49)	100% (181)	100% (46)
At least one male/trans partner	100% (100)	100%	100% (49)	100% (181)	100% (100)	100% (100)	100% (49)	100% (181)	100% (46)
Number of male/trans partners (mean (CI))	48 (23–73)	39 (10–68)	11 (8–14)	113 (100–127)	5 (1–8)	5 (3–8)	2 (1–3)	5 (3–8)	5 (1–8)
Was asked for / asked for sex without condom at least once	59% (56)	60% (53–67)	12.5% (6)	75% (134)	5 (1–8)	5 (3–8)	2 (1–3)	5 (3–8)	5 (1–8)
Accepted/received sex without condom at least once	25% (14)	24% (19–30)	50% (3)	41% (55)	6 (4–8)	6 (4–8)	6 (4–8)	6 (4–8)	6 (4–8)
Any insertive AI	93% (88)	94% (88–97)	43% (21)	45% (80)	5 (1–8)	5 (3–8)	5 (3–8)	5 (3–8)	5 (1–8)
Always condom use, insertive AI	91% (80)	91% (88–94)	100% (21)	65% (52)	71% (27)	72% (63–79)	50% (8)	25% (14)	24% (10–48)
Any receptive AI	26% (25)	29% (19–42)	73% (36)	98% (176)	78% (21)	83% (62–94)	88% (7)	29% (4)	29% (13–52)
Always condom use, receptive AI	96% (24)	97% (75–100)	97% (35)	69% (122)	26% (10)	33% (17–53)	50% (8)	93% (52)	93% (83–97)
Overall practices					100% (10)	100%	100% (8)	48% (25)	48% (31–66)
Only insertive AI	73% (69)	70% (59–79)	12% (6)	0% (0)	58% (22)	55% (45–64)	19% (3)	0% (0)	0%
Only receptive AI	6% (6)	5% (3–11)	43% (21)	54% (96)	13% (5)	15% (9–25)	19% (3)	68% (38)	69% (49–84)
Insertive and receptive AI	20% (19)	23% (13–38)	31% (15)	45% (80)	13% (5)	17% (8–32)	31% (5)	25% (14)	24% (10–48)
Neither I AI nor RAI	1% (1)	1% (0–7)	14% (7)	2% (3)	16% (6)	13% (5–30)	31% (5)	7% (4)	7% (3–17)

^f due to data collection issues, certain participants were not asked all of the questions

AI: anal intercourse

CI: confidence interval

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Table 3.

Sexual practices with female partners among male sex workers (MSWs), transwomen sex workers (TSWs) and their clients in the last 3 months, Lima, Peru 2013

	Transactional¹				Non-transactional²			
	MSW N= 100 % (n)	MSW weighted % (CI)	TSW N= 181 % (n)	TSW weighted % (CI)	MSW N= 100 % (n)	MSW weighted % (CI)	MSW clients N = 49 % (n)	TSW clients N = 46 % (n)
Any female partner at all:	62% (62)	62% (53–71)	2% (4)	2% (0–5)	62% (62)		20% (10)	76% (35)
At least one female partner	18% (11)	23% (8–50)	100% (4)	100%	87% (54)	85% (70–93)	90% (9)	91% (32)
Number of female partners, mean (CI)	1(1–1)	1(1–1)	0 (0–0)	0 (0–0)	4(2–5)	4(2–6)	2(1–3)	2(1–2)
	N= 11		N = 4		N = 54		N = 9	N = 32
Any vaginal sex	100% (11)	100%	75% (3)	70% (27–94)	100% (54)	100%	100% (9)	100% (32)
Always condom use, vaginal sex	73% (8)	73% (59–83)	67% (–)	58% (5–97)	44% (24)	48% (35–61)	78% (7)	19% (6)
Any anal sex	64% (7)	54% (28–79)	75% (3)	80% (12–99)	59% (32)	54% (32–74)	56% (5)	44% (14)
Always condom use, anal sex	71% (5)	71% (42–89)	67% (–)	74% (5–99)	50% (16)	55% (30–77)	80% (4)	50% (7)
Overall practices								
Only vaginal sex	36% (4)	46% (21–72)	25% (1)	20% (1–88)	41% (22)	46% (26–68)	44% (4)	56% (18)
Only anal sex	0% (0)	0%	25% (1)	30% (6–73)	0% (0)	0%	0% (0)	0% (0)
Vaginal and anal sex	64% (7)	54% (28–79)	50% (2)	50% (18–82)	59% (32)	54% (32–74)	56% (5)	44% (14)

CI: confidence interval

¹ Clients reported a very limited number of transactional partners. Therefore, the data is not included here.

² No TSWs reported non-transactional female partners.