Published in final edited form as:

AIDS Care. 2016 June; 28(6): 699-704. doi:10.1080/09540121.2016.1160027.

HIV testing, care, and treatment experiences among the steady male partners of female sex workers living with HIV in the Dominican Republic

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Abstract

Male steady partners of female sex workers (FSW) living with HIV represent a key population for treatment as prevention and/or pre-exposure prophylaxis (PrEP) interventions. This study uses data collected from male steady partners who were referred by FSW living with HIV participating in a multi-level HIV prevention and care intervention in Santo Domingo, Dominican Republic. We conducted a socio-behavioral survey and HIV-testing with all men (n=64) and 16 in-depth interviews with a sub-sample to obtain more depth. Thirty-five of the 64 participants were living with HIV; 27 were previously diagnosed and 8 were diagnosed during our study. As a result, 45% of men were members of a sero-discordant sexual partnerships. Of men with no previous HIV diagnosis (n=37), 15 had never been tested for HIV and 9 had not been tested in the past two years. Ninety-three percent of men previously diagnosed with HIV reported receiving HIV care in

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Disclosure Statement

the past 6 months and 78% were taking anti-retrovirals. Low HIV testing was partly due to men not feeling at-risk for HIV, despite having an HIV-infected partner. Additionally, a lack of tailored care inhibited engagement in ARV treatment for those infected. HIV testing was low, highlighting a need for test-and-treat strategies. Men not living with HIV would benefit from regular testing and would be good candidates for pre-exposure prophylaxis. While almost all men who had been diagnosed with HIV were engaged in care and adherent to ART, future research should assess whether they are achieving optimal HIV outcomes for their health and prevention of ongoing transmission.

Keywords

non-commercial partners; HIV-positive; pre-exposure prophylaxis; anti-retroviral treatment; AIDS

Introduction

Recent evidence has emphasized the opportunity to use anti-retroviral therapy (ART) for both primary and secondary prevention of HIV transmission of HIV (CDC, 2011, 2014). People living with HIV who correctly take ART and are virally suppressed have been shown to be significantly less infectious than those who are not taking ART (Cohen et al., 2011). In response, identifying and linking individuals living with HIV to care and ARV treatment immediately, referred to as the "test and treat" and "treatment as prevention" paradigms, have emerged globally as a key strategies to prevent ongoing sexual transmission of HIV (Cohen et al., 2011; Cohen et al., 2013). Additionally, PrEP (i.e. HIV-negative persons taking ART as prophylaxis) has been recommended as an additional tool for HIV prevention for people who have behaviors that expose them to HIV (CDC, 2014, Jain, Krakower, & Mayer, 2015).

Men who are the steady partners of female sex workers (FSW) living with HIV represent a key population to target for ART-based prevention strategies, and yet, to our knowledge, there is no published research about this population's HIV prevalence or experiences with HIV testing, care or treatment. Female sex workers and their male partners are key populations disproportionately affected by HIV in the Dominican Republic - where we conducted this study - and elsewhere (CONAVIHSIDA, 2014. Halperin, de Moya, Perez-Then, Pappas, & Garcia Calleja, 2009). Though there is no systematic HIV surveillance for male steady partners, FSW have a 13.5 times greater odds to be HIV-infected than non-FSW women, globally (Baral et al., 2012). The male steady partners of FSW have been shown to infrequently use condoms with their FSW partners (Murray et al., 2007; Syvertsen et al., ²⁰¹³). In turn, ART-based prevention strategies may be the most effective way to stem HIV transmission among this population. Yet, there is some evidence that male steady partners may be reluctant to receive HIV testing or engage in medical care (Fleming, Barrington, Perez, Donastorg, & Kerrigan, 2015). For the specific population of male steady partners of FSW living with HIV, it is unclear how this population might be reached, how many are living with HIV, and if and how they have engaged with HIV testing, care, and treatment.

With the aim of informing ART-based prevention strategies, we conducted a mixed-methods study in Santo Domingo, Dominican Republic (DR) to (a) examine the feasibility of recruiting male steady partners of FSW living with HIV for HIV testing and sociobehavioral research, and (b) describe this population's HIV prevalence and testing, care, and treatment experiences.

Methods

In this paper, we present findings from a socio-behavioral quantitative survey, HIV testing, and in-depth interviews conducted with men in the DR who were the steady partners (e.g. boyfriend, husband) of a FSW living with HIV.

Sample and recruitment

This study with male partners was embedded within *Abriendo Puertas (Opening Doors)*, (Donastorg, Barrington, Perez, & Kerrigan, 2014), a longitudinal intervention research project conducted among FSW living with HIV in Santo Domingo. Our team previously conducted a study with steady male partners of FSW in the DR in which we asked their preferences and suggestions for recruiting other men into research studies (Fleming et al., 2015). We drew upon the recommendations – making men feel comfortable in the research setting and using partner and peer referrals – to recruit men for this study (Fleming et al., 2015).

Men were referred by FSW participants (n=268) in the *Abriendo Puertas* intervention. FSW were defined as women who reported having exchanged sex for money in the last month and 'male steady partners' were defined as someone who was considered to be an ongoing or steady partner who had sex with a participating FSW at least 4 times in the last 3 months. FSW enrolled in *Abriendo Puertas* were asked – but not required – to refer their male steady partners for HIV testing and a socio-behavioral survey. All male steady partners and FSW were at least 18 years old at the time of consent and spoke Spanish. The HIV status and involvement in sex work of the referring FSW participant were not disclosed by our study team to the male partners, including when a male partner tested positive for HIV. Counselors were trained especially for such situations to help male partners process their diagnosis without disclosing the HIV-status (including deductive disclosure) of the partner that referred him.

Data collection procedures

We conducted an interviewer-administered standardized socio-behavioral survey and HIV testing with each man. A purposive sample based of sixteen men based on their HIV status were additionally invited to participate in a qualitative in-depth interview about their experiences with HIV testing and, if applicable, HIV care. All data collection occurred in Spanish in private research offices by trained Dominican field staff.

HIV testing for men included two rapid tests (Determine and Retrocheck), followed by an enzyme-linked immunosorbent assay (ELISA) test in the case of discordance. All male partners who tested positive for HIV were linked to care and treatment. HIV-negative men received individual-level HIV risk reduction counseling.

Data Analysis

Survey data were analyzed using SAS version 9.4. We conducted univariate analysis to describe the population and to establish a baseline level of biological and behavioral study outcomes. For the in-depth interviews, we transcribed the audio-recorded interviews and used thematic coding procedures (in Atlas.ti version 7) to describe and examine men's experiences with HIV testing, care, and treatment and relationship with their partner (Saldaña, 2009). Subsequently, we reviewed outputs from these coding exercises to prepare matrices around each theme for comparative analysis of patterns across participants. Qualitative data analysis occurred after quantitative analyses and we used the qualitative data to explore in greater depth findings from the quantitative data.

Ethical approval

All study protocols and consent procedures were approved by the Institutional Review Boards of the Johns Hopkins Bloomberg School of Public Health, the University of North Carolina, and the Instituto Dominicano de Dermatología y Cirugía de la Piel "Dr. Huberto Bogaert Diaz."

Results

A total of 250 FSW living with HIV participated in *Abriendo Puertas* and were asked to refer their steady male sexual partners. Approximately a quarter of the cohort made such a referral over the 10-month initial study period resulting in sixty-four male steady partners recruited into the study. Socio-demographic characteristics of these men are presented in Table 1. Most men (64.5%) said that the woman who referred them to the study was a cohabiting partner and 87.5% reported their partner was engaged in sex work. The men ranged in age between 20 and 67 (median: 39) and over two thirds (70.9%) had primary education or less. Most men (82.8%) were employed and their median monthly income was 9500 Dominican pesos or about 215 US Dollars (range: 1800–160,000 pesos). Five men (7.9%) self-reported having a sexually transmitted infection other than HIV in the past 6 months, 22 men (34.4%) had more than one sex partner in the previous 30 days, and 22 men (34.4%) did not use a condom at last sex with the FSW partner living with HIV that referred them. In terms of substance use, 39.7% drank alcohol once a week or more in the past 30 days, 42.7% had ever used illicit drugs, and 9.5% had used illicit drugs in the past 6 months. Thirteen percent reported having ever sold drugs.

Thirty-five (54.7%) of the 64 men were infected with HIV; 27 (42.2%) had previously known their positive status and 8 (12.5%) were newly diagnosed during our study. Of the 37 men with no previous HIV diagnosis, 15 (40.5%) had never been tested for HIV and 9 (24.3%) had not been tested in the previous two years.

HIV testing experiences

We asked the men about their experiences with HIV testing (Table 2). Of those men who had previously tested for HIV prior to our study (n=49), 34 (69.4%) were tested most recently in a hospital/clinic; 9 (18.4%) in a mobile testing unit and 6 (12.2%) by an NGO. Of the men previously tested, 30.6% said they tested because of a doctor's recommendation, 26.5%

because they suspected a sexual partner was living with HIV, and 18.4% were tested because they felt sick. Just over half of men who were tested reported receiving counseling before and after HIV testing.

In the qualitative interviews, men described reasons for non-testing. Many men discussed their anxiety related to testing, in particular due to fear of a positive result. For example, one 52-year-old man who had never been tested prior to this study said, "*Because I had never done it, and when you haven't done something before you always think the worst.*"

Other men did not feel that they were at risk for HIV and never felt a need to get tested. As an example, one man who received a positive HIV diagnosis as part of this study had never previously been tested. He described the partner who referred him as his lover and he had two children with her; however, he also had a wife with whom he lived. This man knew that the partner who referred him was a sex worker but he was unaware that she was living with HIV, though he believed she had been tested ("She's gotten tested twice and has been negative...[I know] because she has told my mom."). He said his condom use with his lover (i.e. the partner who was a FSW living with HIV) was inconsistent, especially when drinking. Despite having unprotected sex with his lover and with other partners, he said that he did not feel like he could be infected with HIV and so he had never been tested before. He said, "Here was the first time [I was tested]...I had never been tested for HIV...I never really thought about it." He expressed shock at his positive diagnosis, saying "I wasn't expecting this." While many men with similar stories similar ended up testing negative for HIV, this man's story highlights how lack of awareness of risk delayed HIV testing.

HIV Care Experiences

Twenty-seven of the 64 men referred had previously been diagnosed with HIV and were asked about their HIV care experiences (Table 3). Of those 27 men, 11 (40.7%) were diagnosed within the previous two years, 9 (33.3%) had received their diagnosis over two years ago, and 7 could not remember. All but one man with a previous HIV diagnosis had disclosed their HIV status to someone other than a medical provider and fifteen (55.6%) had disclosed to the woman who referred them to the study.

Twenty-five (92.6%) had received HIV care in the past 6 months and had previously had a CD4 count taken. Most men were satisfied with their experiences with HIV care. All men who had received HIV care reported that they felt respected by clinic staff, and 22 (88.0%) reported that overall the HIV services are generally 'excellent/good.' Twenty-one (77.8%) men with a previous diagnosis were taking antiretroviral (ARV) treatment. Only three (14.3%) had started ARVs within the past year, 10 (47.6%) began it 1 to 5 years ago, and 8 (35.1%) started ARVs over 5 years. Of those currently taking ARVs, 90.5% said they were following their prescribed doses 'perfectly.'

While men in the qualitative interviews echoed the overall positive experiences in HIV care, several highlighted that wait times in clinics pose a challenge to their successful utilization of HIV care and treatment. As an example, one man who was referred to the study by his wife of 18 years had been diagnosed with HIV ten years ago and he knew that his wife was living with HIV. He had mostly had good experiences with doctors and nurses during his

HIV care visits, but he faced challenges when trying to pick up his ARV treatment each month. He said,

"Well, actually I find it to be really difficult [to get my medication] because I think that if I'm just coming to get my medication, I shouldn't have to wait a long time... I don't think they should let someone who isn't there to see a doctor but rather is just looking for his medications to wait the for 4 or 5 hours, I don't think that's right...We're just poor workers and I can't be paralyzed there."

This quote highlights the impact of long wait times to pick up medication on his ability to work and make money. Other men mentioned long wait times as the biggest barrier to receiving HIV care and treatment.

Discussion

We successfully recruited 64 male steady partners of FSW living with HIV – a population that has never previously been studied – by using partner referrals. We found that over half of these men were living with HIV and just over half those men had disclosed their status to their FSW partner. Additionally, HIV testing was fairly low among men who did not have a previous HIV diagnosis; eight men were newly diagnosed as part of our study. Most men who were living with HIV were engaged in HIV care and satisfied with the quality, but noted that wait times posed a barrier to adherence to care and their ability to work.

Regular HIV testing was low among steady male partners of FSW living with HIV, which is an important gap to address given the potential for transmission within these sexual networks. Future efforts need to specifically target steady male partners for ART-based prevention efforts, especially regular HIV testing and PrEP. Partner referral by FSW living with HIV who are engaged in care is one option to reach these men, when women feel comfortable with this (Fleming et al., 2015). Ultimately, outreach efforts needs to make HIV testing more normative among male populations and specifically men who are partners of FSW living with HIV. Such efforts should directly address fear associated with a positive diagnosis since many men felt anxiety about being diagnosed.

Beyond HIV testing, male steady partners who test positive for HIV are a key population for treatment as prevention interventions to ensure linkage to care and treatment. Those who test negative and continue to be in steady relationships with an infected FSW partner are prime candidates for pre-exposure prophylaxis (PrEP) interventions (CDC, 2014; Jain et al., 2015). Almost half of the male steady partners in our study (45.3%) were members of a sero-discordant sexual partnerships, highlighting the potential promise for PrEP with this population. Future research should explore the feasibility of PrEP for this population.

The most salient barrier to successful ARV adherence was long wait times. Clinics may need to reorient their provision of care to acknowledge men's (and women's) need to work (Dovel, Yeatman, Watkins, & Poulin, 2015; Fleming & Dworkin, 2016). Work is often central to men's masculine identity and thus men may prioritize work obligations more so than their health (Axelrod, 2001). Research by Siu and colleagues in Uganda emphasize how ARV treatment can inhibit men's work and diminish their self-perceived masculinity.

Medication pick-up may need to be available on evenings and weekends to allow for people to earn money during regular working hours.

Just over half of men in our sample who had previously been diagnosed with HIV had disclosed their HIV status to the FSW partner who referred them to the study. This suggests that there are significant barriers to HIV disclosure among this population that merits more exploration to determine whether the barriers to disclosure for this population are similar to those found in other populations (e.g. HIV stigma and discrimination) (Przybyla et al., 2013). There is some evidence to suggest that partners can help each other with HIV care and treatment (Nachega et al., 2006; Skhosana et al. 2006; Stirratt et al., 2006; Klitzman et al. 2004), but unfortunately, to our knowledge, these dynamics have never been looked at specifically among FSW living with HIV and their male partners. A recent systematic review of rigorously evaluated interventions for partner disclosure found none targeting heterosexual men or female sex workers and their male partners, highlighting a gap in the current literature (Conserve, Groves, Maman, 2015). More research in this area is needed to determine whether overcoming these barriers to disclosure could be important for improving HIV treatment outcomes for this population.

While our study provides important insights into the HIV testing, care and treatment experiences of a key population for HIV transmission in the Dominican Republic, several limitations must be acknowledged. We did not assess biologic HIV outcomes, such as viral load and CD4 counts, which would provide important indicators of care and treatment effectiveness. Additionally, our quantitative sample is small and only includes men whose FSW partners were willing to make referrals. We would expect that FSW who were willing to refer were more like to have previously disclosed their HIV status, though, of note, we did have men in our sample whose partners had not disclosed. Our small and non-random sample may not be representative of the population as a whole. Recruitment of male partners of FSW is a challenge that can be a barrier to research with this population (Fleming et al., ²⁰¹⁵). To recruit greater numbers of men into such research, we learned in this study and previous research that it is critical to guarantee confidentiality for both FSW and their partners (Fleming et al., 2015). In order to increase referrals from FSW of their male partners, it is important to assess the nature of the relationship and tailor the process based on whether the woman wants to accompany her partner, engage with someone else to recruit her partner (such as a peer navigator or family member), or simply provide information to her partner. It could be fruitful for those FSW who have referred their partners to share their experiences with others to emphasize that the research team did not disclose information about HIV status or status as a FSW. Beyond FSW referrals, which may not be feasible or desired by some women, efforts that promote testing within social networks of male partners through opinion leaders and offer testing in discrete community locations in evening hours with support for linkage to care could be successful. Despite the sample size limitations of this work, through our mixed methods approach we were able to provide a more nuanced account of the HIV testing, care and treatment experiences of these men.

Conclusions

Male steady partners of FSW who are living with HIV represent an important but understudied population for ARV-based prevention efforts. Better understanding of this population – and their relationships with FSW living with HIV – will allow for the development of interventions that stem the transmission of HIV between these men and their sexual networks.

Acknowledgments

We would like to thank all study participants for their time, dedication and commitment, as well as the Abriendo Puertas research and intervention team including staff and community members from IDCP, COIN and MODEMU.

Sources of Support

This Research to Prevention (R2P) project was supported by USAID|Project SEARCH, Task Order No. 2, funded by the US Agency for International Development under Contract No. GHH-I-02-07-00032-00, beginning 30 September 2008, and supported by the President's Emergency Plan for AIDS Relief. The Johns Hopkins University Center for AIDS Research, 1P30AI094189, provided additional support. Paul J. Fleming was supported by the National Institute of Allergy and Infectious Diseases under grant number T32 AI007001 and subsequently by the National Institute on Drug Abuse under grant number T32 DA023356. The Carolina Population Center provided training support (T32 HD007168) and general support (R24 HD050924).

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Table 1

Demographic characteristics of male steady partners of FSW living with HIV participating in the Abriendo Puertas study in Santo Domingo (n=64)

	%/median	Count/range
Age	39	(20–67)
Education		
None/Primary	70.9%	44
Secondary/University	20.9%	18
Cohabits with Referring FSW Partner	64.5%	40
Employed	82.8%	53
Monthly income	RDP 9500*	(1800–160000)
Aware that referring FSW partner is a FSW	87.5%	56
Self-reported STI in past 6 months	7.9%	5
More than 1 sex partner, past 30 days	34.4%	22
Unprotected last sex with referring FSW partner	34.4%	22
Alcohol use once a week or more in past 30 days	39.7%	25
Ever used illicit drugs	42.9%	27
Any drug use past 6 months	9.5%	6
Ever involved in selling drugs	12.9%	8
HIV Status		
HIV-negative	45.3%	29
HIV-positive (newly diagnosed in our study)	12.5%	8
HIV-positive (previously diagnosed)	42.2%	27
HIV testing among men without previous diagnosis (n=37)		
Never had previous HIV test	40.5%	15
Had previous HIV test, but not in past 2 years	24.3%	9
Tested for HIV within the past 2 years	35.1%	13

^{*}Approximately USD 215

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 $\label{eq:Table 2} \textbf{HIV testing experiences of male steady partners of FSW living with HIV (n=64)}$

	Percent	Count
Ever tested for HIV (prior to our study)	76.6%	49
Location of last HIV test, prior to our study		
Hospital/Clinic	69.4%	34
Mobile testing unit	18.4%	9
NGO	12.2%	6
Reasons for last HIV test		
Doctor recommendation	30.6%	15
Felt sick	18.4%	9
Felt at risk	12.2%	6
Was with someone suspected of being HIV+	26.5%	13
Required for work	4.1%	2
Other	8.2%	4
Received counseling before last HIV test	52.1%	25
Received counseling after last HIV test	56.3%	27

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Table 3

HIV care and ARV experiences of male steady partners with a previous HIV diagnosis (n=27)

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	Percent	Count
Date of diagnosis		
Diagnosed in previous 2 years	40.7%	11
Diagnosed over 2 years ago	33.3%	9
Unknown	25.9%	7
Previously disclosed HIV status to		
Non-medical worker	96.3%	26
Partner who referred him to study	55.6%	15
Received HIV care in last 6-months	92.6%	25
Has previously had CD4 count taken	92.6%	25
Has previously had viral load taken	88.9%	24
Always feels treated with respect by health clinic staff (n=25)	100.00%	25
The HIV services received are generally (n=25)		
Excellent/Good	88.0%	22
Adequate	8.0%	2
Weak	4.0%	1
Currently on ARV treatment	77.8%	21
First time took ARVs (n=21)		
Within past year	14.3%	3
1–5 years ago	47.6%	10
More than 5 years ago	38.1%	8
Perfect ARV adherence (n=21)	90.5%	19