

ORIGINAL ARTICLE

Disparities in Sexually Transmitted Infection Testing and the Need to Strengthen Comprehensive Sexual Health Services for Trans Women

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Abstract

Purpose: Few studies have examined the importance of improving the sexual health delivery system beyond HIV among trans women. We assessed survey data from the National HIV Behavioral Surveillance Transgender Woman (NHBS-Trans) Study in San Francisco to characterize the utilization of sexual health services among HIV-negative trans women and to explore opportunities to improve sexual health services for trans women.

Methods: Trans women were recruited through respondent-driven sampling from July 2019 to February 2020. The analytic sample was restricted to 116 HIV-negative trans women. We identified trends in data using chi-squared tests to assess significance between sexual risk behavior and the use of preventative sexual health services and built logistic regression models to assess the relationships between sexual risk behaviors and sexually transmitted infection (STI) testing.

Results: The majority of sample was trans women of color with most identifying as Latinx (42.2%). Over half were low income (56%), and majority had been homeless in past 12 months (62.9%). The prevalence of condomless receptive anal sex was 52.6% with about two-thirds (62.1%) recently having an STI test. Participants who engaged in recent condomless receptive anal sex had more than fivefold greater odds of having a recent STI test compared to their counterparts who did not (adjusted odds ratio [aOR] 5.60, 95% confidence interval [CI] 1.83–17.11; $p=0.003$). We also found age- and education-related disparities in STI testing.

Conclusion: This study characterized the utilization of sexual health services among HIV-negative trans women and identified important disparities in STI testing. We discuss opportunities to strengthen sexual health care delivery systems.

Keywords: HIV/AIDS; sexual health; sexually transmitted infections (STIs); transgender women

Introduction

A recent systematic review found that globally trans women have a high prevalence of HIV and are at increased risk for other sexually transmitted infections (STIs) such as gonorrhea and chlamydia.¹ Overall, trans women are at greater risk for STIs compared to their cisgender counterparts.^{2,3} For example, in Los Angeles, California, one study found that STI positivity was 25% among trans women compared to 11% among cisgender women and 15% among heterosexual

cisgender men.⁴ Data on STIs other than HIV among trans women in the United States are limited, in part, because national surveillance systems do not capture trans women in their data. For example, Centers for Disease Control and Prevention (CDC) STI surveillance data only record cisgender men and women genders, erasing important sexual health indicators for transgender populations.⁵ To date, what we know about STIs among trans women is limited to secondary data from studies conducted primarily with trans women using convenience

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sampling. The gap in data prevents the public health system from having a full and accurate picture of sexual health indicators in the United States and perpetuates disparities for gender minorities like trans women.^{4,6,7}

Stigma and transphobia exacerbate negative health outcomes among trans women.^{8–10} Globally, trans people face higher levels of stigma and discrimination due to the lack of social and legal recognition of their gender identity and systemic exclusion from critical social institutions like employment and education.¹¹ Transphobic stigma and discrimination in medical settings prevent trans women from accessing preventive health services and care.^{6,12,13} The rights of trans people in the United States are under attack with the Trump Administration attempting to remove protections for trans people in the Patient Protection and Affordable Care Act (ACA).¹⁴ As a result, trans women, particularly trans women of color, will face even more social and structural barriers that will prevent them from accessing and utilizing critical preventative sexual health services.^{6,15,16}

We must also consider how HIV disparities frame how trans women engage with the sexual health delivery system. People living with HIV (PLWH) have a higher prevalence of STIs compared to those who are HIV negative.¹⁷ In San Francisco, trans women are consistently estimated to have a higher prevalence of HIV compared to other key populations with young trans women aged 18–24 years old having significantly higher HIV incident rates compared to those 25 and older.^{18,19} Promoting and expanding STI screenings in community settings is a key strategy for health departments to improve the utilization of sexual health services among those most at-risk for STIs. Despite the growing amount of evidence for STI risk among trans women, there are notable gaps in the literature on STI surveillance data and more specifically the factors related to poor STI testing in cities where there is optimal HIV testing coverage. The majority of incidence estimates are all based on convenience samples rather than locally or nationally representative samples. Therefore, it is imperative that local, state, and national health jurisdictions include gender identity with STI reporting and expand STI testing efforts among trans women. These improvements will support our ability to develop and implement effective prevention programs and comprehensive sexual health interventions.

This analysis uses data from the San Francisco site of the NHBS-Trans Study to characterize the utilization of sexual health services among HIV-negative trans women in our city. We analyzed a sociobehavioral sur-

vey to explore priorities and opportunities to improve sexual health services for trans women. Few studies, if any, have explored the importance of improving sexual health services and resources for trans women beyond HIV/AIDS.

Methods

Sample and procedures

The present study analyzes data from the first NHBS study conducted with trans women residing in San Francisco, collected between July 2019 and February 2020. NHBS methods have been described in detail elsewhere.²⁰ Briefly, trans women were recruited using respondent-driven sampling (RDS). RDS has been used as a method to sample hidden populations beyond those seen at services or venues using peer networks to refer participants.^{21,22} During our formative research phase, we identified 25 “seeds,” eligible trans women from diverse social networks who recruited three to five other trans women from their social networks after participating in the study. Eligible participants were: (1) 18 years or older; (2) self-identified as trans women; (3) fluent in English or Spanish; and (4) residents of San Francisco. Participants provided informed consent and completed a face-to-face, interviewer administered survey. They were offered a free rapid HIV test and tests for STI and HCV. Participants received a total of \$100 for completing all study activities and an additional \$25 for each eligible peer referral enrolled in the study. The study was approved by the Institutional Review Board (IRB) of the University of California, San Francisco.

Measures

The following demographic characteristics were assessed: age, race/ethnicity, education, income, employment status, history of homelessness, and current housing status. We measured engagement in sexual risk behaviors in the past 12 months by asking participants the following questions: In the past 12 months, have you had receptive anal sex without a condom? In the past 12 months, have you had receptive vaginal sex without a condom? In the past 12 months, have you had insertive anal sex without a condom? In the past 12 months, have you had insertive vaginal sex without a condom? We dichotomized each of these items (yes/no).

To characterize utilization of preventive sexual health services, we used seven measures, spanning testing, preventive behaviors, and biomedical prevention. We measured recent HIV testing by asking participants if they

had ever had an HIV test (yes/no). We asked those who had ever had an HIV test, “Was your most recent HIV test in the past 12 months (yes/no)?” We measured recent STI testing by asking participants, “In the past 12 months, were you tested by a doctor or other health care provider for a sexually transmitted disease like gonorrhea, chlamydia, or syphilis (yes/no)?” We measured recent participation in HIV prevention activities by asking participants, “In the past 12 months, have you had a one-on-one conversation with an outreach worker, counselor, prevention program worker, or participated in an organized group session to discuss ways to prevent HIV infections (yes/no)?” We measured utilization of free condom distribution services by asking participants, “In the past 12 months, have you gotten any free condoms, not counting those given to you by a friend, relative or sex partner?”

Analysis

This analysis is focused on sexual health service utilization, which includes primary HIV prevention. As a result, we restricted the analytic sample to 116 trans women who were HIV negative, excluding participants who had self-reported living with HIV or had a reactive rapid HIV test result. Descriptive statistics was used to characterize overall demographics, sexual risk behaviors, and use of preventive sexual health services. To assess the bivariate relationships between sexual risk behaviors and use of preventive sexual health services, we used chi-square tests and a cutoff level of 0.05 for statistical significance. We then built logistic regression models for sexual health service outcomes that were statistically significant at the bivariate level. Analyses were conducted using STATA 16.^{2,3}

Results

Sample characteristics of 116 HIV-negative trans women are presented in Table 1. Over 30% (32.8%) of participants were 50 years old or older. A plurality were Latinx (42.2%, $n = 49$); the majority were non-White. Almost half of participants reported having a high school diploma or less (49.1%, $n = 57$), and more than half reported an annual income below the federal poverty level or \$12,490 in 2019 (56.0%, $n = 65$). A majority had been homeless in the past 12 months (62.9%, $n = 73$) and about one-fourth were currently experiencing homelessness (26.7%, $n = 31$). In terms of recent sexual risk behavior, participants frequently reported condomless receptive anal sex (52.6%, $n = 61$), followed by condomless insertive anal sex (20.7%, $n = 24$), condomless insertive vaginal

Table 1. Demographic Characteristics and Structural Determinants of Health Among HIV-Negative Trans Women, San Francisco, 2019 ($N = 116$)

	Overall	
	<i>n</i>	%
Demographics		
Age		
18–29	22	19.0
30–39	25	21.6
40–49	31	26.7
50+	38	32.8
Race/ethnicity		
White	26	22.4
African American/Black	14	12.1
Latinx	49	42.2
NH-Asian and Pacific Islander	10	8.6
Other	17	14.7
Education		
HS diploma or less	57	49.1
Some college	39	33.6
Bachelor’s degree or more	20	17.2
Annual income		
Below federal poverty level (\$12,490 or less)	65	56.0
Above federal poverty level (more than \$12,490)	51	44.0
Employment status		
Full-time	16	13.8
Part-time	15	12.9
Unemployed or other	85	73.3
History of homelessness (last 12 months)		
No	43	37.1
Yes	73	62.9
Currently experiencing homelessness		
No	85	73.3
Yes	31	26.7
Sexual risk behaviors		
Condomless receptive anal sex (last 12 months)		
No	55	47.4
Yes	61	52.6
Condomless receptive vaginal sex (last 12 months)		
No	109	94.0
Yes	7	6.0
Condomless insertive anal sex (last 12 months)		
No	92	79.3
Yes	24	20.7
Condomless insertive vaginal sex (last 12 months)		
No	106	91.4
Yes	10	8.6
Use of preventive sexual health services		
Recent HIV test (last 12 months)		
No	14	12.1
Yes	102	87.9
Recent STI test (last 12 months)		
No	44	37.9
Yes	72	62.1
Participated in HIV prevention activities (last 12 months)		
No	41	35.3
Yes	75	64.7
Received free condoms (last 12 months)		
No	21	18.1
Yes	95	81.9

STI, sexually transmitted infection.

sex (8.6%, $n=10$), and receptive vaginal sex (6.0%, $n=7$) in the last 12 months. A large majority reported recently having an HIV test (87.9%, $n=102$) and receiving free condoms (81.9%, $n=95$). About two-thirds of participants reported recently having an STI test (62.1%, $n=72$) and participated in a HIV prevention activity (64.7%, $n=75$).

Table 2 shows the relationships between sexual risk behaviors and utilization of sexual health service outcomes. Participants who engaged in recent condomless receptive anal sex were more likely to have had a recent STI test compared to those who did not (75.4% vs. 47.3%, respectively, $p=0.002$). In addition, participants who engaged in recent condomless insertive vaginal sex were less likely to have had a recent STI test (100% vs. 58.5%, respectively, $p=0.01$) compared to those that did not. There were no statistically significant differences between each sexual risk behavior and the other sexual health service outcomes.

Table 3 shows associations with STI testing. Participants who engaged in recent condomless receptive anal sex had more than fivefold greater odds of having a recent STI test compared to their counterparts who did not (adjusted odds ratio [aOR] 5.60, 95% confidence interval [CI] 1.83–17.11; $p=0.003$). Participants aged 50 years or older were less likely to have a recent STI test compared to those aged 18 to 29 years (aOR 0.21, 95% CI 0.05–0.92; $p=0.039$). Participants with some college education were more likely to have a recent STI test compared to those with a high school diploma or less (aOR 3.90, 95% CI 1.00–15.19; $p=0.050$).

Discussion

Our study identified potential improvements in the sexual health services delivery system for trans women in San Francisco. We found that recent HIV testing surpassed that of STI testing. This illustrates that STI screening efforts are suboptimal compared to HIV testing in San Francisco. We hypothesize that the missed opportunities to receive both an HIV test and comprehensive STI testing may be a result of the siloing of HIV and sexual health services and evidence that greater integration can be achieved. Disparities in sexual health service utilization have been shown to be linked to deficits in medical education and clinician competency in sexual and gender minority health.²⁴ The high prevalence of sexual risk behaviors and low STI screening in combination with poor uptake in recommended sexual health prevention activities in this sample is concerning. For example, while a large majority of trans women reported to have

Table 2. Relationships Between Sexual Behaviors and Sexual Health Service Utilization Among HIV-Negative Trans Women (N = 116)

	Recent HIV test			Recent STI test			Participated in HIV prevention activities			Received free condoms		
	No	Yes	χ^2 p	No	Yes	χ^2 p	No	Yes	χ^2 p	No	Yes	χ^2 p
Sexual risk behaviors												
Condomless receptive anal sex (last 12 months)												
No	8 (14.5)	47 (85.5)	0.6044 0.437	29 (52.7)	26 (47.3)	9.7258 0.002	23 (41.8)	32 (58.2)	1.9179 0.166	14 (25.5)	41 (74.5)	3.8121 0.051
Yes	6 (9.8)	55 (90.2)		15 (24.6)	46 (75.4)		18 (29.5)	43 (70.5)		7 (11.5)	54 (88.5)	
Condomless receptive vaginal sex (last 12 months)												
No	14 (12.8)	95 (87.2)	1.0225 0.312	43 (39.4)	66 (60.6)	1.7691 0.183	40 (36.7)	69 (63.3)	1.4457 0.229	20 (18.3)	89 (81.7)	0.0732 0.787
Yes	0 (0.00)	7 (6.86)		1 (14.3)	6 (85.7)		1 (14.3)	6 (85.7)		1 (14.3)	6 (85.7)	
Condomless insertive anal sex (last 12 months)												
No	9 (9.8)	83 (90.2)	2.1903 0.139	39 (42.4)	53 (57.6)	3.7574 0.053	34 (37.0)	58 (63.0)	0.5054 0.477	19 (20.7)	73 (79.3)	1.9483 0.163
Yes	5 (20.8)	19 (79.2)		5 (11.36)	19 (26.39)		7 (17.07)	17 (22.67)		2 (9.52)	22 (23.16)	
Condomless insertive vaginal sex (last 12 months)												
No	14 (13.2)	92 (86.8)	1.502 0.220	44 (41.5)	62 (58.5)	6.6876 0.01	38 (35.8)	68 (64.2)	0.1368 0.711	19 (17.9)	87 (82.1)	0.0265 0.871
Yes	0 (0.0)	10 (100.0)		0 (0.0)	10 (100.0)		3 (30.0)	7 (70.0)		2 (20.0)	8 (80.0)	

Table 3. Predictors of Sexually Transmitted Infection Testing Among HIV-Negative Trans Women in San Francisco, 2019

	Recent STI test (<i>n</i> = 106)		
	aOR	CI	<i>p</i>
Demographics			
Age			
18–29	Ref.		
30–39	2.57	0.43–15.32	0.301
40–49	2.58	0.52–12.74	0.246
50+	0.21	0.05–0.92	0.039
Race/ethnicity			
NH-White	Ref.		
NH-African American/Black	0.19	0.03–1.31	0.092
Latinx	1.29	0.31–5.39	0.729
NH-Asian and Pacific Islander	0.16	0.01–1.78	0.135
Other	1.00	0.18–5.65	0.999
Education			
HS diploma or less	Ref.		
Some college	3.90	1.00–15.19	0.050
Bachelor's degree or more	1.74	0.37–8.13	0.483
Income			
below federal poverty level	Ref.		
above federal poverty level	2.01	0.64–6.29	0.230
Employment status			
Full-time	Ref.		
Part-time	1.36	0.17–11.07	0.772
Unemployed or other	3.30	0.60–18.19	0.170
History of homelessness (last 12 months)			
No	Ref.		
Yes	0.66	0.18–2.47	0.540
Currently experiencing homelessness			
No	Ref.		
Yes	0.37	0.08–1.71	0.201
Sexual risk behaviors			
Unprotected receptive anal sex (last 12 months)			
No	Ref.		
Yes	5.60	1.83–17.11	0.003
Unprotected receptive vaginal sex (last 12 months)			
No	Ref.		
Yes	2.91	0.19–43.88	0.441
Unprotected insertive anal sex (last 12 months)			
No	Ref.		
Yes	5.71	0.95–34.45	0.057
Unprotected insertive vaginal sex (last 12 months)			
No	Ref.		
Yes	Empty		

aOR, adjusted odds ratio; CI, confidence interval.

received free condoms in the last 12 months, over half reported recent condomless receptive anal sex (52.59%, *n* = 55). While condomless sexual risk behaviors among this sample of trans women were diverse, condomless anal sex is more frequent, especially condomless receptive anal sex presenting the highest risk of STI transmission.^{25,26} These findings are consistent with the data reported by the San Francisco Department of Public

Health (SFDPH) that show high levels of HIV testing among groups at-risk for HIV.²⁷ However, without comprehensive surveillance of sexual health, data on the utilization of HIV testing may not be comparable to other indicators of sexual health services.

We also found that many participants who recently engaged in condomless sex were not more likely to report utilization of several sexual health services. This finding is worrisome, as elevated rates of STI prevalence have been documented among trans women. An analysis of 292 transgender person-visits to a municipal clinic in San Francisco between 2006 and 2009 estimated an STI positivity rate ranging from 2.0% to 11.1%.²⁸ Other studies have also found similarly high levels of STIs among trans women. For example, a San Diego study among trans men and women found 13.2% reporting having any STI, 9.9% with chlamydia, 7.3% with gonorrhea, and 26% with syphilis in the last year.²⁹ To maximize the availability and reach of comprehensive sexual health services to trans women, a systemic approach is needed to support trans women to identify risk and utilize the appropriate sexual health services. For example, we found that structural disparities and social inequity in recent STI testing exist and may leave out older trans women and those without some college education. Future public health planning ought to consider these disparities.

There is a need for increased routine STI screening for trans women. To eliminate sexual health-related disparities, local health departments may want to consider starting with modeling sexual health services after HIV prevention services as low-hanging fruit to promote and increase the availability and reach of these services in community settings. Redefining how sexual health is operationalized beyond HIV/AIDS will be an important tool to strengthen the sexual health delivery system and support comprehensive sexual health surveillance, specifically for transgender populations. Essential to this is that routine standardized collection of gender identity data among all publicly-funded health centers who serve trans women is necessary. Rather than the dominant approach to establishing guidelines and standards of care that perpetuate system silos, comprehensive sexual health delivery systems ought to be designed with social conditions as fundamental causes of health inequalities at the center of public health.³⁰ Fundamental causes of health inequalities as a lens can help local health departments reimagine how public health systems can be organized to address root causes of health inequity and help identify strategies that cut across multiple disease

areas and social ecological factors. In studies in many parts of the United States and the world, trans women have a unique set of mental, physical, and sexual health needs that are largely shaped by living in a transphobic society that go on to prevent utilization of comprehensive sexual health services.^{6,9,31–35} Structural and multilevel interventions must address these social conditions as fundamental causes of inequality and the maladapted structures that contribute to inaccessible testing, diagnosis, and treatment for STIs and sexual health promotion among and for trans women.^{32,36,37}

This study is not without limitations. Data from this study may not be generalizable to other parts of the country due to the unique trans-specific health services in San Francisco. These data were collected as part of the NHBS study where the focus was on HIV/AIDS with fewer questions on other sexual health services. A future more in-depth study on comprehensive sexual health service utilization may allow for a more nuanced understanding. In addition, this was the first cycle of NHBS that was inclusive of trans women. Although cross-sectional, the potential of future NHBS data collection cycles with trans women may address the critical gap in local and national surveillance efforts centered on the health of trans populations over time.

Conclusion

Despite limitations, this study characterized the utilization of sexual health services among HIV-negative trans women in San Francisco and identified potential gaps in the health care delivery system in San Francisco. The paucity of data regarding sexual health services and utilization among trans women is surprising, and this article addresses this gap in the literature. It underscores the significance of social conditions as fundamental causes of health inequalities and the development of trans-specific services at the local health department level. Incorporation of health service delivery models centered in an equity and social justice framework may play a critical role in the success of the disease prevention and health promotion for communities of trans women.

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Author Confirmation Statement

All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated sufficiently in the work and take responsibility

for the content, including participation in the data collection, concept, design, analysis, writing, or revision of the article.

Disclaimer

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Abbreviations Used

ACA = Affordable Care Act
aOR = adjusted odds ratio
CDC = Centers for Disease Control and Prevention
CI = confidence interval
IRB = Institutional Review Board
NHBS-Trans = National HIV Behavioral Surveillance Transgender Woman
PLWH = People living with HIV
RDS = respondent-driven sampling
SFDPH = San Francisco Department of Public Health
STI = sexually transmitted infection