Suboptimal HIV Testing Uptake Among Men Who Engage in Commercial Sex Work with Men in Asia

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Abstract

Purpose: Men who have sex with men and are sex workers (MSMSW) are disproportionately affected by the growing and emerging HIV epidemic. As sex work and same-sex behavior are heavily stigmatized and often illegal in most Asian countries, HIV research focusing on MSMSW has been limited. The goal of this analysis is to examine HIV testing practices and identify correlates of HIV testing among MSMSW in Asia.

Methods: The Asia Internet MSM Sex Survey, an online cross-sectional survey of 10,861 men who have sex with men (MSM), was conducted in 2010. Data on sociodemographic characteristics, HIV testing behaviors, and sexual behaviors were collected. Five hundred and seventy-four HIV-negative/unknown respondents reported receiving payment for sex with men at least once in the past 6 months and were included in this analysis. Multivariable logistic regression was conducted to identify independent correlates of HIV testing in the past year.

Results: About half (48.6%) of the participants had been tested for HIV at least once within the past year, and 30.5% had never been tested. We also found that MSMSW participants who engaged in risky behaviors were less likely to be tested.

Conclusion: While one might expect a high HIV testing rate among MSMSW due to the risks associated with engaging in sex work, we found that HIV testing uptake is suboptimal among MSMSW in Asia. These results suggest that targeted HIV prevention and testing promotion among MSMSW are needed.

Keywords: Asia, HIV testing, male sex workers, sexual risk behaviors

Introduction

AN ESTIMATED 4.8 million people are living with HIV/AIDS in Asia.¹ Globally, men who have sex with men and are sex workers (MSMSW) are disproportionately affected by HIV/AIDS compared to the general population; a recent review of the literature indicates that males who sell sex experience relatively higher HIV risk than other men who have sex with men (MSM).² This review found that the median HIV prevalence among MSMSW in the 10 European countries that provided data to the UN General Assembly Special Session was 8.9% and 12.5% for the five African countries.² Studies have reported a wide range of HIV prevalence rates among MSMSW in Asia, from 3.3% in China³ and 7.7% in Thailand⁴ to 18.8% in Bangkok.⁵ Globally,

HIV risk among MSMSW appears to be amplified due to several reasons, including high rates of distal risk factors, such as depression, substance use, and concurrent substance use and sex; the limited power to negotiate condom use in an unregulated oft-criminalized occupation; and lack of targeting of HIV prevention research, funding, and HIV testing and care initiatives directed to MSMSW populations.^{2,6} HIV prevalence among MSMSW in Asia may be high due to having multiple sexual partners, unprotected anal sex, and potentially more alcohol and drug use.^{7,8} Despite putting themselves at higher risk for HIV, MSMSW have reported engaging in sex work to support themselves financially or to purchase expensive items.²

HIV testing is an effective HIV prevention strategy, and routine HIV testing not only reduces the likelihood of infecting

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others but also allows for timely linkage to HIV care.⁹ Globally, several studies have reported that stigma related to sex work involvement may limit uptake of HIV prevention and testing programs among MSMSW.^{10,11} There is also an emerging literature on stigma experienced by MSMSW in Asia, which likely explains the HIV risk behaviors of Asian MSMSW.^{12–14} MSMSW in varied cultural contexts (including Asian countries) have reported multiple intersecting stigmas, including stigma related to same-sex behavior; stigma related to HIV/AIDS; and stigma related to sex work itself, often in addition to background stigmas related to substance use, racial/ethnic minority status, and class-based stigma.² As sex work and same-sex behavior are heavily stigmatized and often illegal in most Asian countries, MSMSW living in Asia face salient barriers to accessing HIV testing services.¹⁵ Barriers to HIV testing among MSM in Asia have been well documented. These studies have suggested that HIV-related stigma,^{16,17} fear of knowing a positive result,¹⁸ fear of discrimination,^{18,19} lack of knowledge about the benefits of early diagnosis,¹⁹ low perceived risk of HIV infection,^{19,20} homosexuality-related stigma,^{21,22} and infrequent provider-initiated HIV testing²³ are barriers to getting tested. The additional stigma of engaging in sex work may serve to further alienate MSMSW from traditional MSM-based community initiatives and magnify their perceived barriers to HIV testing and care.²

However, a limited number of studies have explored the HIV testing habits of MSMSW in Asia. These studies suggest that the rate at which MSMSW are tested for HIV is low. A study conducted in Indonesia ($N=250$) reported that less than 3% of MSMSW had ever previously had a voluntary HIV test, although 28.0% had contact with a prevention program in the past year.⁸ A study conducted in Shanghai ($N=200$) estimated that 28.5% of MSMSW had never been tested.²⁴ Factors associated with not testing for HIV included low perceived HIV risk, concerns with testing confidentiality, and not knowing where they could be tested.

To develop effective HIV interventions and to promote frequent testing among MSMSW, a group at high risk for HIV, the current state of HIV testing among MSMSW needs to be evaluated. Using a large multi-country Internet-based sample allows us to answer questions about HIV testing uptake among Asian MSMSW and, thus, pinpoint intervention targets and suggest approaches. Therefore, the goal of this analysis is to examine HIV testing practices and identify correlates of HIV testing among MSMSW in Asia.

Methods

Study design and participants

A cross-sectional online survey (Asia Internet MSM Sex Survey) collected information about sexual risk behaviors of MSM between January 1 and February 28, 2010. People who visited www.Fridae.asia, a popular gay-oriented website in Asia, were shown advertisements for the study and were redirected to the survey if they were interested in participating. In addition, pop-up advertisements were posted in gay chat rooms and more than 40 community partners in 12 countries e-mailed listserv member advertisements for the survey. The advertisements had a link that redirected them to the survey. Written informed consent was requested before beginning the study. All participants aged 18 and older and who had ever had

sex with another man were eligible to participate. Participants were provided with the option to complete the survey in English, simplified or traditional Chinese Mandarin, Cantonese, Japanese, Thai, Tagalog, Bahasa Malaysia, Bahasa Indonesia, or Vietnamese. Community-based organizations throughout Asia worked with Fridae to help translate and back-translate the survey to ensure that the questions were appropriate in each cultural context. During the 2 months of data collection, 24,742 people started the survey. Of the 10,861 participants who completed the study (56.1% participation rate), 574 (5.3%) were HIV negative or status unknown and reported having been paid for sex at least once in the past 6 months and were included in this analysis. This analysis was exempt from IRB approval as it was a secondary data analysis of anonymous data.

TABLE 1. SOCIODEMOGRAPHICS AND HIV TESTING UPTAKE AMONG MEN WHO HAVE SEX WITH MEN AND ARE SEX WORKERS IN ASIA

	MSMSW (N = 574) n (%) ^a
Age (mean, SD)	
18–20	49 (8.5)
21–29	216 (37.6)
30–39	180 (31.4)
40–49	95 (16.6)
50+	34 (5.9)
Country of residence	
Singapore	100 (17.4)
Malaysia	61 (10.6)
Indonesia	51 (8.9)
Thailand	105 (18.3)
The Philippines	14 (2.4)
Hong Kong	60 (10.5)
Taiwan	33 (5.8)
China	114 (19.9)
Other	36 (6.3)
Employment	
Full time	368 (64.1)
Student	100 (17.4)
Other/pension/social security/unemployed	106 (18.5)
Educational attainment	
Secondary or less	97 (16.9)
Tertiary/professional qualification	154 (26.8)
University	229 (39.9)
Post graduate	94 (16.4)
Sexual orientation	
Gay/homosexual	429 (74.7)
Bisexual	131 (22.8)
Heterosexual/other	14 (2.4)
Test in past 12 months	
No	295 (51.4)
Yes	279 (48.6)
Ever tested	
No	175 (30.5)
Yes	399 (69.5)

^aColumn percentages are calculated using a denominator of non-missing values.

MSMSW, men who have sex with men and are sex workers.

TABLE 2. BIVARIATE ANALYSIS OF HIV TESTING CORRELATES AMONG MEN WHO HAVE SEX WITH MEN AND ARE SEX WORKERS IN ASIA

	<i>Not tested in the past year (N=295) n (%)^a</i>	<i>Tested in the past year (N=279) n (%)^a</i>	<i>X²</i>	<i>P</i>
Age			9.59	0.048
18–20	34 (11.5)	15 (5.4)		
21–29	102 (34.6)	114 (40.9)		
30–39	89 (30.2)	91 (32.6)		
40–49	49 (16.6)	46 (16.5)		
50+	21 (7.1)	13 (4.7)		
Employment			12.29	0.002
Full time	191 (64.8)	177 (63.4)		
Student	63 (21.4)	37 (13.3)		
Other/pension/social security/ unemployed	41 (13.9)	65 (23.3)		
Educational attainment			5.53	0.137
Secondary or less	44 (14.9)	53 (19.0)		
Tertiary/professional qualification	91 (30.9)	63 (22.6)		
University	114 (38.6)	115 (41.2)		
Post graduate	46 (15.6)	48 (17.2)		
Sexual orientation			1.44	0.487
Gay/homosexual	223 (75.6)	206 (73.8)		
Bisexual	67 (22.7)	64 (22.9)		
Heterosexual/other	5 (1.7)	9 (3.2)		
How many times were you paid for sex in the past 6 months			11.80	0.003
1	85 (28.8)	49 (17.6)		
2–5	149 (50.5)	150 (53.8)		
6+	61 (20.7)	80 (28.7)		
Used condoms during anal sex with client in the past 6 months			0.29	0.590
Always	185 (62.7)	181 (64.9)		
Not always	110 (37.3)	98 (35.1)		
Did you use condoms with the last client			10.61	0.001
Yes	223 (79.9)	241 (89.9)		
No	56 (20.1)	27 (10.1)		
Diagnosed with any STI besides HIV			8.40	0.004
Yes	30 (10.2)	52 (18.6)		
No	265 (89.8)	227 (81.4)		
With regular partners			9.91	0.019
Number of regular partners in the past 6 months				
0	119 (40.3)	81 (29.0)		
1	58 (19.7)	59 (21.2)		
2–5	83 (28.1)	88 (31.5)		
6+	35 (11.9)	51 (18.3)		
Protected insertive anal intercourse with regular partners			0.89	0.346
Always	28 (19.1)	40 (23.4)		
Not always	119 (81.0)	131 (76.6)		
Protected receptive anal intercourse with regular partners			2.77	0.096
Always	31 (21.1)	50 (29.2)		
Not always	116 (78.9)	121 (70.8)		
With casual partners			12.12	0.007
Number of casual partners in the past 6 months				
0	58 (20.4)	34 (13.0)		
1	23 (8.1)	21 (8.1)		
2–5	129 (45.3)	104 (39.9)		
6+	75 (26.3)	102 (39.1)		

(continued)

TABLE 2. (CONTINUED)

	<i>Not tested in the past year (N=295) n (%)^a</i>	<i>Tested in the past year (N=279) n (%)^a</i>	<i>X²</i>	<i>P</i>
Protected insertive anal intercourse with casual partners			1.67	0.196
Always	58 (31.5)	76 (37.8)		
Not always	126 (68.5)	125 (62.2)		
Protected receptive anal intercourse with casual partners			3.26	0.071
Always	57 (31.0)	80 (39.8)		
Not always	127 (69.0)	121 (60.2)		
With paying partners				
Number of other MSMSW partners in the past 6 months			1.05	0.789
0	114 (38.6)	115 (41.2)		
1	44 (14.9)	36 (12.9)		
2–5	100 (33.9)	89 (31.9)		
6+	37 (12.5)	39 (14.0)		
Protected insertive anal intercourse with other MSMSW partners			2.52	0.112
Always	49 (38.0)	58 (47.9)		
Not always	80 (62.0)	63 (52.1)		
Protected receptive anal intercourse with other MSMSW partners			3.93	0.047
Always	50 (38.8)	62 (51.2)		
Not always	79 (61.2)	59 (48.8)		

^aColumn percentages are calculated using a denominator of nonmissing values. STI, sexually transmitted infection.

Measures

Sociodemographic variables, including sex, country of residence, birth year, employment status, educational attainment, and sexual orientation, were collected. Participants self-reported if they had been diagnosed with any sexually transmitted infections (STIs) besides HIV in the past 6 months. Measures of sexual behavior related to participants' commercial sex work with male partners included the number of times they were paid for sex in the past 6 months, frequency of condom use with paying sex partners ("Never," "Sometimes," "Most of the time," "All the time"), whether they used condoms with the last paying sex partner ("No," "Yes," "Don't recall"), and if they had paid anyone else for sex ("No," "Yes"). Current sexual behaviors with regular (boyfriend/lover), casual, and commercial sex (sex workers, masseurs providing sexual services, escorts) male partners were captured by asking participants the number of each type of these partners in the past 6 months and how often they had protected insertive and receptive anal intercourse with these partner groups.

Statistical analyses

Frequencies were calculated to describe the sample's sociodemographic characteristics. Pearson's chi-square tests were conducted to compare the sociodemographic characteristics and sexual behaviors of MSMSW who reported having been tested for HIV in the past year compared to those who reported not having been tested within the past year. Variables that were significantly associated with past-year HIV testing ($P < 0.05$) were entered into a multivariable logistic regression

model and were adjusted for age, employment status, education, and sexual orientation. All analyses were conducted in SAS 9.3 (SAS Institute, Cary, NC).

Results

Sociodemographics

Almost half (46.1%) of the participants were younger than 30 years, and about a third (31.4%) were between the ages of 30 and 39 (Table 1). The majority lived in China (19.9%), Thailand (18.3%), Singapore (17.4%), and Malaysia (10.6%). Most of the participants self-identified as gay (74.7%). Over half (56.3%) had finished University or Post Graduate studies, and about two-thirds (64.1%) were employed full time. Fewer than half (48.6%) had been tested in the past year, and nearly a third (30.5%) had never been tested for HIV.

Bivariate analysis: tested for HIV in the past year versus did not test for HIV in the past year

MSMSW who reported not receiving an HIV test in the past year were younger ($\chi^2 = 9.59$, $P = 0.048$) and more likely to be students ($\chi^2 = 12.29$, $P = 0.002$) compared to those who reported receiving HIV testing (Table 2). Reporting of past-year HIV testing was not significantly associated with other sociodemographic characteristics, including educational attainment and sexual orientation.

MSMSW who received HIV testing in the past year were more likely than MSMSW who did not receive HIV testing in the past year to report a greater number of paying ($\chi^2 = 11.80$, $P = 0.003$), regular ($\chi^2 = 9.91$, $P = 0.019$), and

casual sex partners ($\chi^2 = 12.12$, $P < 0.007$); to report using condoms with their last paying sex partner ($\chi^2 = 10.61$, $P = 0.001$); and to report being diagnosed with a sexually transmitted infection ($\chi^2 = 8.40$, $P = 0.004$).

Multivariable correlates of having been tested in the past year

In the multivariable analysis (Table 3), MSMSW who reported not using condoms with their most recent paying sex partners were significantly less likely than MSMSW who reported using condoms with their most recent paying sex partners to have been tested for HIV within the past year (adjusted odds ratio [AOR] = 0.30, 95% confidence interval [CI] = 0.10, 0.91). In addition, MSMSW who reported not always using condoms when engaging in receptive anal intercourse with other MSMSW were less likely to report being tested in the past year (AOR = 0.51, 95% CI = 0.27, 0.97). MSMSW between the ages of 21 and 29 were more likely to report being tested in the past year (AOR = 6.50, 95% CI = 1.16, 36.42) than MSMSW between 18 and 20, and MSMSW reporting two to five regular sex partners in the past 6 months were more likely to be tested in the past year than those who reported having no regular sex partners (AOR = 2.87, 95% CI = 1.32, 6.27).

Discussion

In this article, we examined HIV testing practices and identified correlates of HIV testing among MSMSW in Asia. Among this sample of MSMSW in Asia, fewer than half had been tested for HIV in the past year and nearly a third had never been tested.

We also found that MSMSW participants who were at higher risk for HIV infection were less likely to report receiving an HIV test in the past year, including those who did not use condoms with their most recent paying sex partner and those who do not always use condoms when engaging in receptive anal intercourse with other MSMSW. A study conducted among Chinese MSM reported that those who preferred being the receptive partner perceived themselves to be at lower risk of HIV infection than their insertive partners,¹⁸ suggesting that there are clear misconceptions about the HIV risks associated with different sexual acts. Engaging in high risk behaviors coupled with not testing regularly may suggest that these men have a tenuous understanding about HIV transmission and the behaviors that put them at high risk for HIV infection. Alternatively, these MSMSW may recognize that they are at high risk for HIV/AIDS, but are afraid to get tested to find that they are infected.¹⁸ In addition, people at high risk may be aware that they are at risk for HIV; however, they are fearful of finding out that they may be HIV infected due to HIV-related stigma.²⁵

Although our main findings show that MSMSW who engage in high risk behaviors are less likely to get tested, we also found that MSMSW who were between the ages of 21 and 29 were more likely than younger MSMSW to have been tested in the past year. This suggests that some degree of public health messaging may reach MSMSW after adolescence and may be the result of an increase in public health information delivered through social media and the Internet. However, these messages may not be effectively saturating communities of younger MSMSW, which may be contributing to high rates

TABLE 3. UNADJUSTED AND ADJUSTED LOGISTIC REGRESSION MODELS OF SOCIODEMOGRAPHIC AND SEXUAL BEHAVIORS ON HAVING BEEN TESTED FOR HIV IN THE PAST YEAR

	<i>Have been tested for HIV in the past year</i>	
	OR (95% CI)	AOR (95% CI)
Age		
18–20	1	1
21–29	2.53 (1.30, 4.92)**	6.50 (1.16, 36.42)*
30–39	2.32 (1.18, 4.55)*	2.91 (0.51, 16.67)
40–49	2.13 (1.03, 4.41)*	3.31 (0.55, 19.83)
50+	1.40 (0.56, 3.52)	0.92 (0.13, 6.48)
Employment		
Full time	1	1
Student	0.63 (0.40, 1.00)	0.60 (0.18, 2.03)
Other/pension/ social security/ unemployed	1.71 (1.10, 2.66)*	1.55 (0.66, 3.59)
Educational attainment		
Secondary or less	1	1
Tertiary/ professional qualification	0.58 (0.34, 0.96)*	0.29 (0.09, 0.94)*
University	0.84 (0.52, 1.35)	0.88 (0.29, 2.71)
Post graduate	0.87 (0.49, 1.53)	0.62 (0.18, 2.13)
Sexual orientation		
Gay/ homosexual	1	1
Bisexual	1.03 (0.70, 1.53)	1.88 (0.86, 4.10)
Heterosexual/ other	1.95 (0.64, 5.91)	3.12 (0.39, 25.20)
How many times were you paid for sex in the past 6 months		
1	1	1
2–5	1.75 (1.15, 2.65)**	1.41 (0.62, 3.21)
6+	2.28 (1.40, 3.69)**	1.75 (0.69, 4.45)
Did you use condoms with the last client		
Yes	1	1
No	0.45 (0.27, 0.73)**	0.30 (0.10, 0.91)*
Diagnosed with any STIs besides HIV		
Yes	1	1
No	0.49 (0.31, 0.80)**	0.78 (0.32, 1.90)
Number of regular partners in the past 6 months		
0	1	1
1	1.49 (0.94, 2.37)	1.75 (0.73, 4.16)
2–5	1.56 (1.03, 2.35)*	2.87 (1.32, 6.27)**
6+	2.14 (1.28, 3.58)**	2.48 (0.91, 6.74)
Number of casual partners in the past 6 months		
0	1	1
1	1.56 (0.75, 3.22)	3.07 (0.78, 12.02)
2–5	1.38 (0.84, 2.26)	1.79 (0.71, 4.55)
6+	2.32 (1.38, 3.89)**	2.45 (0.92, 6.56)
Protected receptive anal intercourse with paying partners		
Always	1	1
Not always	0.60 (0.36, 0.99)*	0.51 (0.27, 0.97)*

AOR, adjusted odds ratio; CI, confidence interval; OR, odds ratio.
* $P < 0.05$; ** $P < 0.01$.

of HIV incidence across Asia in populations of very young MSM.²⁶ While it is encouraging to see that MSMSW in their 20s may be receiving HIV testing, perhaps as a result of exposure to MSM-focused HIV prevention and sexual health information online,²⁴ this study demonstrates the importance of reaching communities of young MSM, who may be involved in sex work, with salient HIV testing messages.

We also found that having other STIs was associated with a higher likelihood of being tested for HIV. This may be because clinics often offer full-panel STI testing services that diagnose patients with STIs that would otherwise be undiagnosed. Patients who do not get tested for HIV may also not test for other STIs, which would also explain why having STIs is associated with a higher likelihood of being tested for HIV. Another possible explanation is that clinicians who see patients that present with symptoms of STIs may assume that their patients are more likely to engage in unprotected sex and would in turn recommend that they get tested for HIV. A study of MSMSW in China found that only 42.6% of MSMSW have ever tested for any STI and reported high STI prevalences (19.0% for syphilis and 20.2% for gonorrhea), which were verified by laboratory testing.²⁷ These results suggest that a large proportion of MSMSW are living with undiagnosed STIs and that STI/HIV testing services that cater to the unique needs of MSMSW are necessary to reduce STI transmission and increase access to STI treatment. We also found that while unprotected sex was associated with a lower likelihood of being tested for HIV, MSMSW with more regular partners were more likely to have been tested. One possible reason why people who have more sexual partners are more likely to be tested is that they are more aware of the increase in risk for HIV and STIs; however, the survey instrument does not ask questions about their perceptions about occupational health risks.

Our study has some limitations. All responses were self-reported, and participants may have underreported risk behaviors due to social desirability bias or recall bias. Participants may not have been comfortable disclosing the full extent to which they subscribed to certain behaviors because the behaviors are stigmatized. Only those who visited the recruitment website and affiliated with the partner community-based organizations completed the study, and these participants may not be representative of all MSMSW in Asia. Since this is an analysis of secondary data, our analyses were restricted by which data were available; for example, the questions asked participants about their behaviors in the past 6 months, so we were unable to make conclusions about behaviors outside of that time frame. Also, a proportion of the study sample was only paid for sex once in the past 6 months, so we were unable to capture whether they engaged in transactional sex only one time in their lives or if they engage in transactional sex regularly outside of the 6 months window of interest. Finally, data collected from different countries were conflated to one sample population due to small sample sizes from individual countries and, therefore, the results may not reflect the unique cultural and social contexts surrounding sex work in different countries.

Conclusion

Despite these limitations, this analysis illustrates the need for HIV prevention and testing promotion and the dissemination

of sexual health and HIV/STI information among MSMSW in Asia. In addition to low HIV testing rates overall, MSMSW who engage in high risk behaviors are less likely to test frequently. This is a major public health concern and requires novel interventions to provide sexual health education and HIV prevention services to this marginalized population. As MSMSW are a hard-to-reach population, peer-driven and network-based strategies may be most effective in delivering HIV testing services to this population.

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Author Disclosure Statement

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