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Letter

Sexually transmitted infection testing practices among 'money boys' and general men who have sex with men in Shanghai, China: objective versus self-reported status

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Abstract. Little is known about sexually transmitted infection (STI) testing among Chinese men who have sex with men (MSM). This study describes the prevalence of STI testing, associated factors and the validity of STI self-reporting among Chinese MSM. Findings indicated a high prevalence of STIs and low testing rates among MSM in Shanghai. Monthly income was significantly associated with STI testing (odds ratio: 0.37, 95% confidence interval (CI): 0.18 to 0.76). Depression was significantly associated with STI testing for general MSM (odds ratio: 1.09, 95% CI: 1.01 to 1.17). Syphilis self-reported status had the highest validity ($k = 0.33$, $\chi^2 = 3.76$, 95% CI: –0.003 to 0.65). Efforts are needed to ensure that STI testing services are accessible to MSM in China. Future HIV and STI interventions should be tailored to the needs of different subsets of MSM.

Additional keywords: associations, male sex workers, prevalence, testing rates.

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Introduction

In China, men who have sex with men (MSM) are at increased risk for sexually transmitted infections (STIs) and testing remains suboptimal.[1] Among MSM, male sex workers or 'money boys' (MBs) represent an important subgroup, with 28.5% of MBs and 50.5% of general MSM never testing for HIV.[2] However, little is known about STI testing among Chinese MSM. This study describes the prevalence of STI testing, associated factors and the validity of STI self-reporting among Chinese MSM.

Methods

In our study, 404 MSM (200 MBs, 204 general MSM) were recruited via respondent-driven sampling and completed a self-administered questionnaire.[2] Alongside demographics and sexual risk behaviours, measures included: the lesbian, gay, and bisexual identity scale[3] (Cronbach's alpha (α) = 0.60 for MBs, 0.64 for general MSM); the sexual attitudes scale[4] ($\alpha = 0.75$ for MBs, 0.81 for general MSM); the Center for Epidemiologic Studies Depression Scale[5] ($\alpha = 0.83$ for MBs, 0.85 for general MSM); intimate partner violence and the loss of face scale[6] ($\alpha = 0.71$ for MBs, 0.78 for general MSM). HIV knowledge was also calculated.[7] Participants previously tested for STIs were asked to report their status (syphilis, gonorrhoea (*Neisseria gonorrhoea*) and/or herpes simplex virus Type 2 (HSV-2)). Results for each STI were also verified with laboratory testing at the Shanghai Municipal Center for Disease Control and Prevention. Syphilis screening involved an initial screening with a nontreponemal test and confirmation of positives using a treponemal assay. For this analysis, syphilis infection was defined as seropositivity on both treponemal and nontreponemal tests. Penile fluid specimens (swabbing from urethra) were tested to detect gonorrhoea infection. The low testing rate may be attributed to the physical discomfort of the procedure. Antibody testing was used to screen for HSV-2. All participants who tested positive for STIs received standard treatment regimens and care in the STI clinic.

Social network size and homophily (i.e. measure of preference for connections to one's own group) were computed using RDSAT ver. 7.1.[8] Multiple logistic regressions were conducted to explore the associations between STI testing status and demographics, sexual risk behaviours and psychosocial variables. Kappa statistics were used to assess the agreement between self-reported and objective STI status.

Table 1. Logistic regression models for any sexually transmitted infection (STI) testing among 404 men who have sex with men (MSM) in Shanghai, China, 2008

STI testing was defined as self-reports of any STI (syphilis, gonorrhoea or herpes simplex virus Type 2) testing in an individual's lifetime. Participant type refers to if they were money boys (male sex workers) or general MSM (reference group). SAS, sexual attitudes scale; IPV, intimate partner violence; CES-D, Center for Epidemiologic Studies Depression Scale; LOF, loss of face scale; CI, confidence interval; OR, odds ratio; AOR, adjusted odds ratio

	n (%)	Univariate logistic regression analysis		Multiple logistic regression analysis	
		OR (95% CI)	*P*-value	AOR (95% CI)	*P*-value
Income					
≥¥5000	37 (62.7)	Referent		Referent	
<¥1000	13 (52.0)	0.64 (0.25–1.66)	0.36	1.10 (0.37–3.27)	0.86
¥1000–¥2999.99	74 (36.3)	0.34 (0.19–0.62)	<0.001	0.43 (0.22–0.85)	0.015
¥3000–4999.99	48 (41.7)	0.43 (0.22–0.81)	0.009	0.37 (0.18–0.76)	0.007
Number of male sexual partners in past 30 days					
0–6	112 (38.1)	Referent		Referent	
More than 7	60 (54.5)	1.95 (1.25–3.04)	0.003	1.19 (0.64–2.19)	0.58
Sexual risk index (15 items) (mean ± s.d.)	8.45 (2.24)	1.11 (1.02–1.21)	0.02	1.11 (0.96–1.27)	0.16
SAS overall sum score (mean ± s.d.)	75.73 (17.37)	1.02 (1.01–1.03)	0.004	1.03 (1.01–1.05)	0.003
IPV sum score (mean ± s.d.)	1.30 (1.52)	1.26 (1.09–1.46)	0.002	1.12 (0.89–1.42)	0.34
CESD score (mean ± s.d.)	11.59 (6.97)	1.04 (1.01–1.08)	0.006	1.00 (0.95–1.04)	0.86
LOF overall sum score (mean ± s.d.)	101.56 (12.37)	0.98 (0.97–1.00)	0.036	0.99 (0.97–1.01)	0.18
HIV knowledge score (mean ± s.d.)	4.26 (1.59)	1.25 (1.10–1.43)	0.001	1.09 (0.89–1.34)	0.39
Participant type × number of male sexual partners	–			2.16 (0.48–9.67)	0.32
Participant type × sexual risk index	–	–		0.99 (0.82–1.20)	0.94
Participant type × SAS	–	–		0.98 (0.95–1.00)	0.032
Participant type × IPV	–	–		1.12 (0.79–1.58)	0.54
Participant type × CESD	–	–		1.09 (1.01–1.17)	0.035
Participant type × LOF	–	–		1.00 (0.97–1.02)	0.63
Participant type × HIV knowledge	–	–		1.27 (0.96–1.69)	0.095

Results

The average social network size was 6.5 for MBs and 6.9 for general MSM who had tested for STIs, and 6.9 for MBs and 4.2 for general MSM who had not been tested. MBs and general MSM who had tested for STIs were more likely to be recruited by others who had tested (homophily = 0.47 and 0.26, respectively) compared with those who had not tested (homophily = 0.45 and 0.21, respectively).

The findings indicated a high prevalence of STIs among both MBs and general MSM in Shanghai: syphilis, 19.0%; gonorrhoea, 20.2%; HSV-2, 16.7%. Only 42.6% of the sample had ever tested for STIs. Regression analysis suggested that monthly income was significantly associated with STI testing (Table 1); overall participants with a monthly income less than ¥5000 were 0.6 times less likely to receive STI testing than those with incomes greater than ¥5000 (odds ratio (OR): 0.37, 95% confidence interval (CI): 0.18 to 0.76). For general MSM, those with greater depression were more likely to have tested for STIs (OR: 1.09, 95% CI: 1.01 to 1.17).

Kappa statistics showed the agreement between self-reported and objective syphilis status was 70.0% ($k = 0.33$, $\chi^2 = 3.76$, 95% CI = –0.003 to 0.65), and agreement for gonorrhoea status was 47.8% ($k = 0.086$, $\chi^2 = 0.41$, 95% CI = –0.16 to 0.34). The number of HSV-2 infections was too low to assess agreement.

Discussion

There is a high prevalence of STIs and low testing rates among MSM in Shanghai. Income was the only significant predictor for STI testing among MBs and general MSM. Unlike HIV testing, STI screening is not free at clinics in China.[9] Efforts are needed to ensure STI testing services are affordable and accessible to MSM in China. Home-based screening with self-collected urine could be useful in improving STI screening uptake.[10] Since depression was a significant predictor of STI testing among general MSM, effective integration of psychological services into STI screening programs at health clinics in China is warranted.

Syphilis self-reported status had the highest validity. Given that syphilis is the most commonly reported STI in Shanghai,[11] MSM may be more knowledgeable of syphilis than other infections. This emphasises the need to include other types of STI information in health education efforts. In summary, it may be essential for public health agencies to offer free or low-cost STI testing for MSM. Future HIV and STI interventions should be tailored to the needs of different subsets of MSM.

Conflicts of interests

None declared.

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