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HIV testing behavior among young migrant men who have sex with men (MSM) in Beijing, China

Yan Song, M.D., Ph.D.¹, Xiaoming Li, Ph.D.², Liying Zhang, M.D., Ph.D.², Xiaoyi Fang, Ph.D.³, Xiuyun Lin, Ph.D.³, Yinjie Liu, M.D.¹, and Bonita Stanton, M.D.²

Yan Song: songybj@yahoo.com; Xiaoming Li: xiaoli@med.wayne.edu; Liying Zhang: lzhan@med.wayne.edu; Xiaoyi Fang: fangxy@bnu.edu.cn; Xiuyun Lin: xiuyunlin_china@hotmail.com; Yinjie Liu: cywsj@163.net; Bonita Stanton: bstanton@dmc.org

¹ Chaoyang District Center for Disease Control and Prevention, Beijing, China

² Carman and Ann Adams Department of Pediatrics Prevention Research Center, Wayne State University School of Medicine, Detroit, Michigan, 48201, U.S.A

³ Institute of Developmental Psychology, Beijing Normal University, Beijing, 100875, China

Abstract

Previous studies suggested a rapid increase of HIV prevalence among MSM in China in recent years, from 0.4% in 2004 to 5.8% in 2008. However, some MSM had never been tested for HIV. In order to expand the accessibility to HIV testing, understanding HIV testing behavior and barriers among MSM is important. Using data collected from 307 young migrant MSM (aged 18–29 years) in 2009 in Beijing, we aimed to identify psychological and structural barriers to HIV testing. MSM were recruited through peer outreach, informal social networks, internet outreach, and venue-based outreach. Participants completed a confidential self-administered questionnaire. Results show that about 72% of MSM had ever had HIV testing. Logistic regression analysis indicated that the HIV testing behavior was associated with sexual risk behaviors (e.g., multiple sexual partners, inconsistent condom use for anal sex) and history of STDs. Eighty four MSM (28%) who had never had HIV testing reported that the psychological barriers mainly were perceived low risk of HIV infection and fears of being stigmatized. The structural barriers reported included inconvenience of doing test and lack of confidentiality. Future HIV prevention programs should be strengthened among MSM to increase their awareness of HIV risk. Efforts are needed to increase access to quality and confidential HIV testing among MSM and reduce stigma against MSM.

Keywords

MSM; HIV testing; HIV Prevention; Stigma; China

Introduction

Increasing access to HIV testing and counseling is critical for HIV prevention, care, treatment and social support. HIV testing may help people who are exposed to the risk for HIV infection to know their HIV serostatus in order to have early treatment and prevent the transmission to others (Rotheram-Borus, Newman, & Etzel, 2000). Although a rapid HIV

test has been available, there was still a substantial proportion of HIV infected individuals who were unaware of their HIV serostatus (Rotheram-Borus, Leibowitz, & Etzel, 2006). Removing the potential barriers to HIV testing and increasing the access to HIV testing for the populations with a high HIV prevalence is imperative (Stekler, & Golden, 2009). People at risk of HIV infection, their families and societies would benefit from increased access to HIV testing (Rotheram-Borus, Leibowitz, & Etzel, 2006).

Individual socio-demographic factors and social identity were associated with HIV testing (Bond, Lauby, & Batson, 2005; Lauby, & Milnamow, 2008). The structural factors may include sites providing testing, cost of the testing, simplicity of the procedure, effectiveness and appropriateness of counseling (Rotheram-Borus, Leibowitz, & Etzel, 2006), convenience, confidentiality and credibility (Angotti et al., 2009). In addition, HIV related stigma is one of the critical barriers for HIV testing (Chesney, & Smith, 1999). Sexual risk behavior and awareness of risk for HIV infection were associated with HIV testing (Miller, Hennessy, Wendell, Webber, & Schoenbaum, 1996). A national study of HIV testing among MSM in the United Kingdom showed that age, history of STDs, condom use during anal sex, previous HIV testing and waiting time for the result were negatively associated with acceptability of HIV testing (Munro, Lowndes, Daniels, Sullivan, & Robinson, 2008).

Over the past decade, there has been a precipitous decline in deaths due to HIV/AIDS in the US and other developed countries, attributable to advances in both treatment and prevention (Holtgrave, 2005). Although both the decreases in prenatal transmission and the increases in survival among the affected are beginning to reach populations in developing countries through the Global Funds Initiative and the WHO 3-by-5 program (French, Kaleebu, Pisani, & Whitworth, 2006; Lu, Michaud, Khan, & Murray, 2006; Gilks et al., 2006), those portions of the globe most affected by the epidemic to-date (or projected to be so in the foreseeable future) have benefited the least from these advances (Coovadia & Hadingham, 2005). One such nation is China, where the HIV epidemic is rapidly increasing (China Ministry of Health & World Health Organization, 2007). In response to the epidemic of HIV/AIDS in China, the Chinese government has transformed the attitude from denial to pragmatic prevention and treatment since 2003, with launching a national program entitled “Four Frees and One Care” (i.e., free antiretroviral treatment for AIDS patients who are in rural areas or who poor in urban area; free HIV counseling and testing; free treatment and HIV testing for pregnant women and their babies; free schooling for children affected by HIV/AIDS; care and financial support to people living with HIV/AIDS and their families) (Wu, Sun, Sullivan, & Detels, 2006).

Since 2004, a nationwide HIV testing strategy was implemented among high-risk populations, including former plasma donors, female sex workers, intravenous drug users, patients of STD clinics, and MSM (Wu, Sullivan, Wang, Rotheram-Borus, & Roger Detels, 2007). Several studies have focused on the HIV testing willingness and behaviors among general population (Hesketh, Duo, Li, & Tomkins, 2005; Ma et al., 2009) and female sex workers (Wang, Li, Stanton, & McGuire, 2008). Few studies have examined testing behavior and its correlates among young MSM HIV (Choi, Lui, Guo, Han, & Mandel, 2006).

In China, the spread of HIV among MSM has received relatively little attention until recent years (Wu, Sullivan, Wang, Rotheram-Borus, & Roger Detels, 2007). Recent studies have indicated a rapid increase of HIV prevalence among MSM in China (Hong et al., 2009; Ruan et al., 2007). For example, HIV prevalence among MSM in Beijing had increased from 0.4% in 2004, 4.6% in 2005, to 5.8% in 2006 (Ma et al., 2007). To prevent further HIV infection and to understand HIV testing behaviors among MSM, it is necessary to explore the correlates of HIV testing behavior, so that effective programs can be designed to

increase the access of HIV testing among MSM. Therefore, the current study, using data from a group of young migrant MSM in China, was designed to examine the correlates of HIV testing and to identify the potential barriers for HIV-testing among MSM. We hypothesize that lack of HIV knowledge, perceived low risk of HIV infection, perceived higher public stigma against homosexuality would be associated with non-testing behavior among MSM.

Methods

Study Site

This study was conducted in Beijing, the national capital of China with a population of 17 million. Beijing is one of the biggest Chinese cities with an estimated 4 million migrants (Li, Lu, & Zhou, 2006). Beijing also is a city with the largest number of MSM and MSM accounted for 44.11% of the 401 newly reported AIDS cases in the first five months of 2009 (China Daily, 2009).

Participants and sampling

There were four criteria for eligible participants in this study: (1) having had sex with men in the past year, (2) 18–29 years of age, (3) temporary migrants (without having permanent residence registration in Beijing), and (4) willing to provide blood specimens for HIV/STD testing. Participants were recruited using four sampling methods. First method is the “Peer outreach” through which three MSM outreach workers were hired and trained by CDC to approach MSM. Second method is the “Snowballing” method through which MSM who agreed to participate in this study were asked to refer their friends to participate in the study. Third method is the “Internet outreach” through which the local research team distributed announcement via local MSM websites to reach potential participants. Fourth method is the “Venue-based outreach” through which the local research team contacted the owners or managers of MSM-frequented venues (e.g., MSM clubs, bars, public parks and bathhouses) and asked them to deliver the message about this study to their members and encouraged MSM to participate. Once a potential participant was referred or identified, a local research team member approached the individual to verify the eligibility and to explain the research purpose, potential risk and benefit of participation. The individual was also ensured of confidentiality of their participation. Written informed consent was signed if a participant agreed to take part in this study.

Data collection procedure

Interviewers were psychology faculty members and graduate students from a local university and health workers from a local CDC in Beijing. All interviewers and MSM peer outreach workers received extensive training on research ethics and assessment methodology prior to the survey. Participants were asked to complete a confidential and self-administered questionnaire in a private room in local CDC or a community medical center in Beijing. Necessary instructions and clarification were provided to the participants during the survey. The questionnaire typically took about 45 minutes to complete. The participants received a small monetary incentive (equivalent to US\$2) for their participation and reimbursement for their transportation expenses (up to US\$5) upon the completion of the survey.

A total of 317 participants were approached and 311 (98%) agreed to participate in and provided written informed consent. Four invalid questionnaires (with substantial missing data) were excluded and 307 remained in the final database of the current study.

Measures

Sociodemographic factors—Participants were asked about their individual characteristics during the interview. These characteristics include age, education (i.e., ≤primary school, middle school, high school, ≥college), type of residence of original birth place (i.e., urban or rural), average monthly income (in Chinese Yuan) which was categorized into four categories (i.e., <1000, 1001~2000~2001~3000, >3000). A composite scale to estimate the socioeconomic status (SES) of MSM was created by indexing those men who were urban residents, had at least middle school education, and earning more than 3000 Yuan per month. The SES scale had a range of 0 to 3 with a high score indicating a high socioeconomic status.

Sexual orientation and sexual behavior—Participants were asked to identify their sexual orientation (i.e., gay, bisexual, undecided) and to report their sexual behaviors including lifetime number of male sexual partners, and times of using condoms in the most recent three anal sex encounters (i.e., none, once, twice, three times).

HIV related knowledge and perceived HIV risk—HIV related knowledge was assessed using 20 items. The sum score was used as a composite index ranging from 0 to 20 with a higher score indicating a higher level of HIV knowledge. These 20 items had an adequate reliability (Cronbach alpha=0.68). Participants were asked to evaluate their perceived risk of HIV infection using a question “What is the possibility for you to catch HIV?” (1=completely impossible, 2=impossible, 3=possible, 4=very possible).

History of STDs—Participants were asked a question related to the history of STDs: “Have you ever had a STD?” This item had a dichotomous response option (i.e., 0=no, 1=yes).

Homosexuality-related stigma—Homosexuality-related public stigma refers to the stigmatizing attitudes of the general population toward homosexuality perceived by MSM (Liu, Feng, Rhodes, & Liu, 2009). The scale of homosexuality-related public stigma consisted of 10 items. Each item had four response options (e.g., 1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). This scale had a high reliability estimate (Cronbach alpha=0.93) for the current study sample.

Willingness to do HIV testing—Participants were asked about their willingness to do HIV testing in the future. This question had four response options (1=“I will not do it whether it is free or not”, 2=“I will do it if I get paid”, 3=“I will do it if it is free”, 4=“I will do it even if I need to pay for it”).

HIV testing behavior—HIV testing behavior was assessed by asking participants a question: “Have you ever had an HIV test?” This item had a dichotomous response option (0=no, 1=yes). If a participant provided a positive answer, he was asked a further question about how many times he had HIV testing in the past. If a participant had never had an HIV test, he was asked further questions about reasons for not having an HIV test. Twenty possible reasons for not having an HIV test were listed and participants were asked to indicate whether each of the possible reasons was applicable to them (yes/no).

Statistical analysis

For descriptive purposes, frequency distribution of sociodemographic characteristics of the sample was examined. Analysis of variance (ANOVA) for continuous variables or Chi-square test for categorical variables was used to examine differences in demographic

characteristics and psychosocial factors between MSM who had HIV testing and MSM who never had HIV testing.

Multivariate logistic regression analysis was employed to examine the factors associated with HIV testing behavior. HIV testing behavior (yes/no) was employed as the dependent variable and age, SES, HIV knowledge, perception of HIV risk, risk behaviors, STDs history, homosexuality-related stigma, willingness to do HIV testing served as the independent variables. Adjusted odds ratio (aOR) and their 95% confidence intervals (95%CI) were calculated for each independent variable in the regression model. Finally, descriptive statistics (%) was used to rank the reasons of not having an HIV test among MSM who had never had an HIV test.

Results

Characteristics of participants

The sample of 307 MSM in this study was recruited through peer outreach (25.4%), informal social networks (22.4%), internet (33.2%), or venue-based outreach (18.8%). About 93.5% (n=287) of participants were single. The mean age of the sample was 23.7 years. The sample included 53.7% urban-to-urban migrants and 46.3% rural-to-urban migrants. Participants who had ≤primary school education, middle school education, high school education, or ≥college education accounted for 2.9%, 13.7%, 39.4%, and 44.0% of the sample, respectively (Table 1).

The majority of participants described their sexual orientation as gay (60.7%), or bisexual (31.4%). The mean age at first sex with men was 20.2 years (SD=2.5). About 13.0% of MSM reported a history of STDs. The mean score of HIV knowledge was 16.6 (SD=2.7). The average score of homosexuality-related stigma was 25.4 (SD=6.1). The median number of lifetime male sexual partners was 15. About 70.6% of participants reported consistent condom use (i.e., used it every time) during the most recent three episodes of anal sex (Table 2).

Experience of HIV testing

As shown in Table 2, 72% (n=222) of participants have ever had an HIV test. The average number of times of HIV-testing for those MSM was 3.8 (SD=3.6). About 27% (n=60) have been tested for HIV once, 20% (n=44) twice, 53% (n=118) at least three times. The percentage of having HIV testing among participants who reported a history of STDs was higher than those who did not report a history of STDs (95.0% vs. 68.9%, $p<0.01$). MSM who reported having a larger number of sexual partners were more likely to have HIV testing ($p<0.01$). MSM who used condoms consistently in the most recent three anal sex episodes were more likely to have an HIV test ($p<0.01$).

Factors associated with HIV testing behavior

Logistic regression analysis results in Table 3 confirmed the results of bivariate analyses that HIV testing behavior of MSM were significantly associated with history of STDs (aOR=9.793, 95%CI=2.169~44.207), lifetime number of male sexual partners (aOR=1.005, 95%CI=1.000~1.010), and condom use in the last three anal sex episodes (aOR=1.515, 95%CI=1.102~2.082). The associations of HIV testing behavior with participants' age, SES, sexual orientation, HIV knowledge, perception of HIV risk, homosexuality-related public stigma and willingness to do HIV testing in the future were not statistically significant.

Barriers to HIV-testing

Table 4 shows the reasons for not having HIV testing among MSM who never had an HIV test. They identified both psychological and structural barriers. Among 85 MSM who never had an HIV test, the most common psychological barriers given for not having HIV testing were perceived low risk of HIV infection (70.2%), fears of being stigmatized for homosexuality (40.5%), and fears of a positive test result (32.1%). About 15.5% of participants endorsed “cannot do anything if tested positive” as one of the reasons for not having HIV testing. The structural barriers included no knowledge about where to take the test (41.7%), no time to take the test (38.1%), distance of the testing center (31.0%), inconvenient testing schedule (21.4%), stigmatizing attitudes of personnel at testing center (21.4%), lack of confidentiality (21.4%), and high cost of testing (20.2%).

Discussion

The current study indicated that about 72% of MSM in Beijing have ever had HIV testing prior to the survey. This result suggested an increase of the percentage of HIV testing among MSM in Beijing in recent years. In a study conducted by Choi and colleagues (Choi, Lui, Guo, Han, & Mandel, 2006), the percentage of MSM having HIV testing was only about 18% in Beijing in 2001. The increase of HIV testing in recent years may be attributable to the implementation of the China’s national “Four Frees and One Care” program (including free HIV testing) since 2003. However, with the high HIV prevalence (e.g., 5.8%) among MSM in Beijing, 28% of the MSM in our sample had never tested for HIV, although they were most likely to be exposed to the high risk of HIV infection.

The results of the current study revealed that MSM HIV testing behavior was associated with awareness of HIV risk. When MSM experienced sexual risk behaviors (e.g., having a large number of sexual partners, inconsistently used condoms), or had a history of STDs, they might be aware of their increased risk for HIV infection, in turn, they were more likely to test for HIV. This finding is collaborated by the report from MSM who never had an HIV test. A majority of these MSM identified the perception of a low risk for HIV infection as their main reason for not having an HIV test. However, their perception of “low risk” was not supported by the HIV and syphilis testing data in the current study (the data were not shown due to space limitation, but are available upon request). Among those MSM who never had an HIV test before, 3.5% were tested positive for HIV and 14.1% were positive for Syphilis. Therefore, increasing awareness of actual HIV risk among MSM may be an important strategy to increase access to HIV testing.

The result of this study also suggested that some participants lacked knowledge about the benefit of early HIV diagnosis and treatment. About 16% of MSM who never had HIV testing reported that they could not do anything about it if they were tested positive for HIV. These MSM might lack the knowledge about availability of free HIV/AIDS treatment programs or lack the knowledge that early treatment of HIV can delay the development of AIDS and death in the era of HAART (Highly Active Antiretroviral Therapy).

This study found that 20% of those MSM who never had HIV testing reported the high cost was the reason for not having the test and 31% of MSM indicated that they might do HIV testing (again) in the future if the test is free. This finding suggests that the cost of testing might still be an issue among some segments of MSM population (and other at-risk populations), as the current China’s “free HIV testing” policy is only for the rural residents and the urban poor. Cost of HIV testing might be a potential barrier for some individuals (such as migrant MSM) who are not qualified for, or do not have access to, the free HIV testing. Moreover, potential breach of confidentiality at HIV testing sites was identified as one of the barriers for HIV testing among MSM. MSM reported that they feared that people

would suspect them of being infected with HIV if they were known to access HIV testing. If the HIV testing settings lack confidentiality, MSM and other at-risk populations may be less likely to seek HIV testing and counseling due to the fears of stigmatization.

In addition to HIV-related stigma, MSM in China may also face the homosexuality-related stigma. In contemporary China, homosexuality is not accepted by the society and in most occasions, the existence of homosexuality is denied (Choi, Diehl, Yaqi, Qu, & Mandel, 2002). Stigma against homosexuality has been documented in previous studies in China (Neilands, Steward, & Choi, 2008). In the current study, although the results did not show a statistically significant association between homosexuality-related stigma and HIV testing behavior, MSM who never had an HIV test did identify a fear of being known for homosexual behavior as one of the main reasons for not having an HIV test. A majority of MSM who did not seek HIV testing reported that they feared people in their community suspecting or knowing their homosexual behaviors. They also feared people in their work place, especially their boss, knowing or suspecting that they were infected with HIV.

There were some potential limitations in this study. First, the representativeness of the sample is limited. Although we made efforts to recruit a representative sample of migrant MSM in Beijing with multiple sampling methods, it is a convenience sample that may limit our ability to generalize our findings to other MSM populations. Second, the behavioral data were collected through self-report and therefore were subject to self-reporting bias (e.g., socially desirable response).

Despite these limitations, this study is one of the first efforts to examine issues related to HIV testing among at-risk populations in China, especially among migrant MSM. The findings have several implications for the HIV prevention efforts targeting MSM populations in China. First, it is necessary to remove or reduce the potential psychological barriers for access to HIV testing among MSM (and other at-risk populations) by providing information and education about the benefits of early diagnosis and early treatment and increasing the awareness of their vulnerability and risk for HIV. Second, quality, convenience and confidentiality of HIV testing should be enhanced to improve the accessibility of HIV testing to MSM and other at-risk populations. More testing sites, flexible testing schedule and well-trained testing personnel need to be available. Free or affordable HIV testing needs to be provided to all individuals regardless of their residential status or income. Finally, HIV-related and homosexuality-related stigma reduction efforts need to be strengthened among the public to reduce the fears of being stigmatized because of either HIV infection or their sexual orientation, so that MSM can benefit from HIV testing and other risk reduction initiatives offered by the society and community.

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Table 1

Socioeconomic characteristic of MSM participants with HIV testing experience

Variables	Total n (%)	Tested n (%)	Not tested n (%)
Overall	307 (100.0)	222 (72.3)	85 (27.7)
Age, mean (SD)	23.72 (2.84)	23.64 (2.76)	23.93 (3.06)
18–19	23 (7.5)	17 (7.7)	6 (7.1)
20–24	181 (59.0)	132 (59.5)	49 (57.6)
25–29	103 (33.6)	73 (32.9)	30 (35.3)
Residence			
Urban	165 (53.7)	114 (51.4)	51 (60.0)
Rural	142 (46.3)	108 (48.6)	34 (40.0)
Education			
≤Primary	9 (2.9)	7 (3.2)	2 (2.4)
Middle school	42 (13.7)	33 (14.9)	9 (10.6)
High school	121 (39.4)	87 (39.2)	34 (40.0)
≥College	135 (44.0)	95 (42.8)	40 (47.1)
Income, mean (SD)	2208.14	2284.23	2009.41
<1000	78 (25.4)	55 (24.8)	23 (27.1)
1001~2000	127 (41.4)	93 (41.9)	34 (40.0)
2001~3000	61 (19.9)	41 (18.5)	20 (23.5)
>3000	41 (13.4)	33 (14.9)	8 (9.4)
SES, mean (SD)	1.64 (0.67)	1.63 (0.68)	1.67 (0.64)
0	6 (2.0)	4 (1.8)	2 (2.4)
1	125 (40.7)	95 (42.8)	30 (35.3)
2	149 (48.5)	102 (45.9)	47 (55.3)
3	27 (8.8)	21 (9.5)	6 (7.1)
Sexual orientation			
Gay	184 (60.7)	136 (62.1)	48 (57.1)
Bisexual	95 (31.4)	66 (30.1)	29 (34.5)
Undecided	24 (7.9)	17 (7.8)	7 (8.3)

Table 2

Association of HIV testing with HIV related knowledge, risk behaviors, perceived HIV risk, homosexuality-related stigma, and willingness to do HIV testing

Variables	Total n (%)	Tested n (%)	Not tested n (%)
N(%)	307 (100.0)	222 (72.3)	85 (27.7)
Lifetime number of male sexual partners, median	15.0	16.5	9.0 *
≤ 15 persons	164 (53.4)	107 (48.2)	57 (67.1) **
> 15 persons	143 (46.6)	115 (51.8)	28 (32.9)
Condom use during the last three anal sex, mean (SD)	2.5 (0.8)	2.6 (0.7)	2.3 (1.0) *
None	14 (4.6)	7 (3.2)	7 (8.3) *
Once	24 (7.8)	13 (5.9)	11 (13.1)
Twice	52 (17.0)	40 (18.0)	12 (14.3)
3 times	216 (70.6)	162 (73.0)	54 (64.3)
Ever had STDs	40 (13.0)	38 (17.1)	2 (2.4) **
HIV knowledge, mean (SD)	16.6 (2.7)	16.7 (2.7)	16.3 (2.8)
Homosexuality-related stigma, mean (SD)	25.4 (6.1)	25.5 (6.1)	24.9 (6.1)
Perceived risk of HIV infection, mean (SD)	2.0 (0.7)	2.0 (0.8)	2.0 (0.7)
Very impossible	71 (23.1)	53 (23.9)	18 (21.2)
Impossible	162 (52.8)	115 (51.8)	47 (55.3)
Possible	66 (21.5)	46 (20.7)	20 (23.5)
Very possible	8 (2.6)	8 (3.6)	0 (0.0)
Willingness to do HIV testing			
I will not do it whether it is free or not	23 (7.5)	15 (6.8)	8 (9.4)
I will do it if I have incentive compensation	14 (4.6)	8 (3.6)	6 (7.1)
I will do it if it is free	95 (31.0)	69 (31.1)	26 (30.6)
I will do it even if I need to pay for it	174 (56.9)	130 (58.6)	44 (51.8)

Note: the number in each cell is n(%) unless indicated otherwise.

* p<0.05;

** p<0.01.

Table 3

Logistic regression analyses for HIV testing behavior

Variables	B	S.E.	Sig.	Exp(B)	95% CI for Exp(B)	
					Lower	Upper
Constant	0.491	1.573	0.755	1.634		
Age	-0.087	0.051	0.088	0.917	0.830	1.013
Socioeconomic status (SES)	-0.183	0.218	0.403	0.833	0.543	1.278
Sexual orientation						
Gay (R)						
Bisexual	-0.179	0.310	0.563	0.836	0.456	1.533
Undecided	0.147	0.509	0.773	1.158	0.427	3.139
Ever had STDs						
No (R)						
Yes	2.282	0.769	0.003 **	9.793	2.169	44.207
Lifetime number of male sexual partners						
	0.005	0.003	0.049 *	1.005	1.000	1.010
Times of condom use in the last three anal sex						
	0.415	0.162	0.011 *	1.515	1.102	2.082
HIV knowledge						
	0.034	0.053	0.519	1.035	0.932	1.149
Perceived HIV risk						
	-0.158	0.193	0.413	0.854	0.585	1.246
Homosexuality-related stigma						
	0.029	0.024	0.229	1.029	0.982	1.078
Willingness to do HIV testing						
	0.159	0.152	0.296	1.173	0.870	1.581

* p<0.05;

** p<0.01.

Table 4

Barriers of HIV testing

Reasons	N (%) ¹
<i>Psychological barriers</i>	
Perceive myself low risk for HIV infection	59 (70.2)
Fear others know my homosexual behavior	34 (40.5)
Don't want to know my HIV serostatus	26 (31.0)
Worry about finding out having HIV	27 (32.1)
Fear of others suspecting my being infected with HIV	25 (29.8)
Fear of others knowing I am infected with HIV	24 (28.6)
Fear of my boss knowing I am infected with HIV	21 (25.0)
Fear of drawing blood with needles	14 (16.7)
Cannot do anything if tested positive, rather not test	13 (15.5)
Have more trouble if I am tested positive	12 (14.3)
Doubt about the accuracy of the test result	7 (8.3)
<i>Structural barriers</i>	
Don't know where to go for HIV testing	35 (41.7)
No time to go for HIV testing	32 (38.1)
Testing place is far away	26 (31.0)
Testing schedule is not convenient	18 (21.4)
Medical personnel have stigmatizing attitude	18 (21.4)
Doubt about the confidentiality of my test results	18 (21.4)
Cost of HIV test is too high	17 (20.2)
<i>Other reason</i>	
I know I am HIV positive, no need for test	1 (1.2)

Note: Data were available from 85 MSM who never had an HIV test; percentage was calculated based on n=84 as one participant did not provide responses to these questions.