

A Study of the STD/AIDS Related Attitudes and Behaviors of Men Who Have Sex with Men in Hong Kong

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A random population based study was carried out to understand HIV-related attitudes and behaviors and self-reported sexually transmitted diseases (STDs) among men who have had sex with men (MSM) in Hong Kong. A special computerized telephone survey method was used and 85 MSM were identified (from a total sample of 2,074 men), 47.1% of whom had at least one male sex partner in the past 6 months. Among these 85 MSM, 29.4% had multiple partners and 37.5% had had anal sex in the last 6 months (67% of them were inconsistent condom users). MSM were more likely to have contracted at least one STD in the last 6 months (10.6%) and were less likely to perceive susceptibility for contracting HIV (62.4%) than those other respondents who visited a female sex worker (FSW) in the past 6 months (4.3% and 43%, respectively). About 45% of the MSM did not perceive condom use to be efficacious for HIV prevention (vs. 30% for male clients of FSW). The study is limited by its small number; however, it suggests that MSM in Hong Kong may be at high risk of contracting HIV. Prevention programs should attempt to change attitudes (e.g., perceived efficacy of condom use, perceived susceptibility, awareness of risk involved, etc.) as well as behaviors. The feasibility for establishing a behavioral surveillance system for this population was demonstrated.

KEY WORDS: MSM; HIV; attitudes; risk behaviors; sexually transmitted diseases; homosexuality.

INTRODUCTION

As suggested by the World Health Organization, it is important to carry out behavioral surveillance surveys (BSS) among high risk populations, including men who have sex with men (MSM), in order to understand the future trends of HIV prevalence and to evaluate the overall effectiveness of existing prevention programs (World Health Organization, 1998). HIV/AIDS BSS are repeated, systematic, cross-sectional surveys of HIV and sexually transmitted diseases (STDs) and related behaviors among selected groups or the general population (Family Health International, 2001; Mills et al., 1998). Condom use, number of partners, and so on are commonly used BSS

indicators (Family Health International, 2001). In Hong Kong, BSS for cross-border travelers and the general male population have been reported (Lau & Siah, 2001; Lau & Thomas, 2001; Lau & Wong, 2000), but not for the MSM population. Part of the reasons may be attributed to difficulties arising from methodological and sampling issues. A pilot study to establish feasibility of carrying out BSS for the MSM in Hong Kong would be useful and important. Besides, there is very little information about factors that are associated with condom use, STDs incidence, and HIV-related attitudes in the Hong Kong MSM population. Some comparisons with the general male population and another high risk population, male clients of female sex workers (FSW), would help in the interpretation of MSM data in a proper context.

The Health Belief Model (HBM) is one of the theories that has been commonly used to design HIV prevention programs (Rosenstock, Strecher, & Becker, 1994). The model states that health beliefs, such as perceived susceptibility, perceived benefits, and perceived efficacy are important determinants of health-related behaviors, in

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this case, HIV-related behaviors. It is, therefore, also important to study attitudes that are related to the HBM, such as perceived susceptibility and perceived efficacy of using condom in HIV prevention. Similarly, HIV-related knowledge may also be related to behavioral changes and it is often a component of HIV education campaigns.

The aim of the present study was to understand the characteristics of HIV-related behaviors (e.g., condom use, number of partners) among MSM in Hong Kong. It therefore provided a test for the feasibility of carrying out a full scale BSS for this particular population. It was hypothesized that risk behaviors were quite common among MSM. Factors that are associated with self-reported STDs incidences were examined. Such incidences were also compared with those of the general male population and the male clients of female sex workers population. It was hypothesized that the STDs incidence among MSM was higher than the other two populations studied. HIV-related knowledge of the MSM was measured and compared to the two above-mentioned populations. It was hypothesized that the three groups differed in the knowledge level.

METHOD

Subjects

This study was carried out from November 1, 1999 to January 18, 2000. The study population consisted of Hong Kong Chinese male residents who were 18–60 of age. Telephone numbers were sampled randomly from up-to-date residential phone directories, which contain all listed household telephone numbers in Hong Kong, stratified by the three major geographic regions of Hong Kong (Hong Kong Island, Kowloon, and the New Territories). Almost 100% of the Hong Kong residents have telephones at home (Hong Kong Office of the Telecommunications Authority, personal communication, January 28, 2000). A member of each sampled household aged 18–60 years was randomly selected to participate in this study. This was done by selecting the eligible household member whose past birthday was closest to the day of the interview. The interviews were conducted between 6 p.m. and 10:30 p.m. in order to avoid over representing homemakers, who are more likely to stay at home in the morning or afternoon. The interviews were conducted by trained research staff using a structured questionnaire.

Procedure

Prospective respondents were briefed that the study was to collect opinion about HIV/AIDS prevention, that

it was sponsored by the Hong Kong Council for the AIDS Trust Fund, and that the results would help the Hong Kong government to formulate related policies. They were asked for consent to join the study. After respondents were recruited, the interviewer first asked five non-sensitive questions to establish some rapport (two related to general knowledge/attitude on AIDS, which are listed in Table III; and two on age and educational level). The respondents were then briefed that the second part of the questionnaire would cover questions related to AIDS and that the questions were recorded in the Hong Kong Telecom's Wui Ying Tung Service. They only needed to key in the appropriate responses and were informed that their telephone number would not be recorded. The Wui Ying Tung telephone number was not released to the respondents. This service has often been used by TV stations for public opinion polling and is commonly known to the public. Two previous studies (Lau & Thomas, 2001; Lau, Thomas, & Lin, in press) have shown that the interactive computerized call-in method yielded high completion rates of 87 and 97%, respectively. The methodological advantages of this approach were documented (Lau, Thomas, & Liu, 2000; Lau, Tsui, & Wang, 2002).

For those who agreed to enter the second part of the interview, they were connected to the Wui Ying Tung Service via the Conference Line Service (which allows one of the two parties to call a third one without hanging up and allows all three parties to make simultaneous phone conversations). The interviewer left the line after the connection was made. The respondents then keyed in their responses after listening to the pre-recorded questions.

Responses

Unanswered telephone calls were given at least two attempts per night for a 2-week period before classifying it as an invalid number. A total of 4,713 telephone contacts were made (defined as households with at least one Chinese male person who was of age 18–60 years old). Among these, 2,203 (46.7%) joined the study and completed the Part I of the study and 2,074 (94.1%) completed Part II, while 64 (2.9%) refused to join Part II and 65 (3.0%) others disconnected the phone during Part II. Among those 64 who refused to join Part II, 26 (40.6%) were due to technical reasons (a majority of them had a pulse mode phone which could not be used for entering data responses to the digital-recorded questionnaire).

The overall successful response rate was 44%. It was defined as the number of completed interviews ($n = 2,074$) divided by the total number of contacts made

($n = 4,713$). Fifty-three percent refused to join the study in the first place; 1.4% started the study but refused to start Part II; the remaining 1.4% did not complete the study due to technical reasons.

Measurements

For the 2,074 respondents who completed the survey, they were asked whether they had ever practiced particular MSM behaviors (“Have you ever had sexual intercourse with another man?”). All of them were also asked whether they had had sexual intercourse with FSW in the past 6 months (“Have you ever had sexual intercourse with FSW in the past 6 months?”) and whether they had contracted STDs in the past 6 months (“Have you contracted STDs in the past 6 months?”). For respondents indicating some MSM behaviors, they were asked about anal sex behaviors in the past 6 months (“Have you had anal intercourse with your male sex partner in the past 6 months?”). Two questions that were commonly used as BSS indicators were asked. They were condom use (“Did you use condom when having anal intercourse with your same sex partner?”) and multiple partnership (“How many same sex partner did you have in the past 6 months?”). Additional questions including one related to knowledge about routes of HIV transmission (“Please mention three ways of HIV transmission”) and two on attitudes which are related to the HBM, (i.e., perceived susceptibility [“What do you think is your chance of HIV infection in the future?”] and perceived efficacy of condom use for HIV prevention [“Do you think that condom use is an efficacious means in HIV prevention?”]) were also asked.

RESULTS

Forty-three percent of the respondents were age 30 or below, 38% were in their 30s to mid-40s, and 18% were of 46 or above. The majority of the respondents had finished studying in secondary school (73%). Among the 2,074 respondents completing Part II, 85 (4.1%) reported MSM behavior (ever have had oral or anal sex with a man), 230 (11.1%) reported that they had visited a FSW in the past 6 months (but never have had MSM behavior); the rest reported neither of these two types of behaviors and were considered as being at “lower risk” in this study.

Prevalence of MSM Behavior in Hong Kong

The results showed that about 4.1% (95% confidence interval: 3.2–5.0%) of the male population in Hong Kong self-reported ever have had sex (oral or anal) with another man (Table I). Among them, 47.1% (40/85) had at least one male sex partner in the past 6 months; 37.5% (15/40) of them had practiced anal intercourse with their male sex partner in the past 6 months. Age was not statistically significantly associated with the prevalence of MSM behaviors. Respondents who did not finish secondary school, however, were more likely to have had sex (oral or anal) with at least one man in the past 6 months (Table I).

Sexual Practices of the MSM in Hong Kong

Among those who reported ever having had sexual intercourse (oral or anal) with male sex partners, 29.4% had more than one male sex partner in the past 6 months.

Table I. The Percentages of MSM Behavior by Age and Educational Level

	Ever have had sex (oral or anal) with a man				χ^2	<i>p</i>	Had at least one male sex partner in the past 6 months				χ^2	<i>p</i>	Had anal intercourse with a male sex partner in the past 6 months				χ^2	<i>p</i>
	Yes		No				Yes		No				Yes		No			
	<i>n</i>	%	<i>n</i>	%			<i>n</i>	%	<i>n</i>	%			<i>n</i>	%	<i>n</i>	%		
Age group					4.76	<.05					<1	<i>ns</i>					<1	<i>ns</i>
18–30	44	5.0	842	95.0			18	2.0	868	98.0			6	0.7	880	99.3		
31–45	30	3.8	767	96.2			15	1.9	782	98.1			6	0.8	788	99.2		
46–60	9	2.4	367	97.6			6	1.6	370	98.4			2	0.5	374	99.5		
Educational level					4.16	<i>ns</i>					7.56	<.05					1.37	<i>ns</i>
Secondary 4 or below	30	5.4	526	94.6			18	3.2	538	96.8			6	1.1	550	98.9		
Secondary 5–7	38	4.0	902	96.0			16	1.7	924	98.3			6	0.6	934	99.4		
University or above	17	3.0	552	97.0			6	1.1	563	98.9			3	0.5	566	99.5		
Total	85	4.1	1,987	95.9			40	1.9	2,032	98.1			15	0.7	2,057	99.3		

About 57% of those with at least one male sex partner in the past 6 months perceived that their male sex partners were having other sex partners. Out of the 15 respondents who self-reported having anal intercourse with male sex partner in the past 6 months, 10 (66.7%) used condoms only occasionally or had never used one in the past 6 months. Nearly 47% of those who had at least one male sex partner reported that such homosexual activities took place in a private venue.

Self-Reported STDs Incidence in the Past 6 months

The results are presented in Table II. Out of the 85 respondents who reported ever having had sexual intercourse (oral or anal) with a male partner, 10.6% reported that they had contracted STDs in the past 6 months, which was much more prevalent than the male clients of FSW population (4.3%, $OR = 0.38$, $p < .05$) and the lower risk population, defined as those who had not visited a FSW in the past 6 months and never had had sex with a man, 0.6%, $OR = 0.05$, $p < .05$).

Among all MSM respondents who ever had had sexual intercourse with a man, those who had had anal intercourse with a male sex partner in the past 6 months were more likely to have contracted STDs in the past 6 months (33.3%, $OR = 8.25$, $p < .05$) than other MSM who had not had anal intercourse with a male person in the past 6 months (Table II). Those MSM respondents who had more than one male sex partner in the past 6 months, those who had not used condoms when having had anal intercourse, and those who perceived some chances of contracting HIV in the future had higher self-reported STDs incidences than those who did not have multiple sex partners in the past 6 months, had protected anal intercourse in the past 6 months or perceived no chance of contracting HIV. Such differences were, however, not statistically significant (Table II).

Knowledge and Attitudes Related to HIV Infection of the MSM Population

The level of knowledge in the MSM population, concerning modes of HIV transmission, was similar to those of the male clients of FSW population and the "lower risk population" (Table III). However, the MSM population was less likely to perceive a high efficacy in using condoms to prevent HIV infection when compared to the other two populations ($OR = 0.54$ and 0.63 respectively, $p < .05$).

Moreover, the MSM population perceived themselves to have a lower chance of contracting HIV in the future when compared to the male clients of FSW

Table II. Self-Reported STD Incidence in the Past 6 months

	Had contracted STD in the past 6 months				<i>OR</i> ^d
	Yes		No		
	<i>n</i>	Row (%)	<i>n</i>	Row (%)	
Subgroup ^b					
Ever have oral or anal sex with a man	9	10.6	76	89.4	1.00
Had sexual intercourse with a FSW in the past 6 months	10	4.3	220	95.7	0.38*
Lower risk population ^c	11	0.6	1,746	99.4	0.05*
Had anal intercourse with male sex partners in the past 6 months ^d					
Yes	5	33.3	10	66.7	8.25*
No	4	5.7	66	94.3	
Had more than one male sex partners in the past 6 months ^d					
Yes	5	20.0	20	80.0	3.50
No	4	6.7	56	93.3	
Had not always been using condoms for anal intercourse in the past 6 months ^e					
No	3	42.9	4	57.1	2.25
Yes	2	25.0	6	75.0	
Perceived chance of contracting HIV in the future ^d					
High or moderate chance	6	18.8	26	81.3	3.85
No chance	3	5.7	50	94.3	

^aExact odds ratio.

^bQuestions asked to all respondents.

^cThose who had not had sexual intercourse with a FSW in the past 6 months and had not ever had sex with a man.

^dQuestions asked to those male respondents who ever had sex with a man ($n = 85$).

^eQuestions asked to those male respondents who had anal intercourse with a man in the past 6 months ($n = 15$).

* $p < .05$.

population ($OR = 0.46$, $p < .05$). That did not, however, significantly differ from the "lower risk population" ($OR = 1.52$, $p > .05$).

Among those who ever have had sexual intercourse with a man, those who had at least one male sex partner in the past 6 months were more likely to perceive some chances of contracting HIV in the future than those who had no male sex partner in the past 6 months ($OR = 3.42$, $p < .05$, Table IV); those who had had anal intercourse with male sex partners in the past 6 months were more likely to perceive some risk of contracting HIV than

Table III. HIV-Related Knowledge and Attitudes of the MSM Population (Who Ever Have Sexual Intercourse With a Man) in Comparison With Other Populations

	MSM population ^a		Male clients of female sex workers population ^b		Lower risk population ^c		(MSM vs. male clients of FSW)	(MSM vs. lower risk)
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>OR</i>	<i>OR</i>
Able to name at least three of the four major channels of HIV transmission ^d								
Yes	17	21.0	45	20.4	321	19.4	1.04	1.11
No	64	79.0	176	79.6	1,335	80.6		
Perceived efficacy of using condoms to prevent HIV infection ^e								
High (very effective/effective)	46	55.4	159	69.7	1,138	66.3	0.54*	0.63*
Low (very ineffective, ineffective or average)	37	44.6	69	30.3	578	33.7		
Perceived chance of contracting HIV in the future ^f								
Moderate or high chance	32	37.6	131	57.0	500	28.5	0.46*	1.52
No chance	53	62.4	99	43.0	1,257	71.5		

^a Respondents who ever had oral or anal sex with male sex partners ($n = 85$).

^b Respondents who had visited a FSW in the past 6 months but had never had sexual intercourse with a male sex partner ($n = 230$).

^c Respondents who had not visited a FSW in the past 6 months and also had never had sexual intercourse with a male sex partner ($n = 1,757$).

^d The four major channels of transmission under consideration were "sexual intercourse," "sharing needle," "mother-infant transmission," and "receiving contaminated blood." Respondents were asked to name as many routes as possible on how HIV can be transmitted in an open-ended question.

^e Respondents were asked about their belief on the efficacy of using condoms for HIV prevention (close-ended question by a 5-point scale: *very effective*, *effective*, *average*, *ineffective*, and *very ineffective*).

^f Three choices (high chance, moderate chance, and no chance) were given to the respondents.

* $p < .05$.

those who had not ($OR = 4.36$, $p < .05$, Table IV); and those who had contracted STDs in the past 6 months were also more likely to perceive some HIV risk than those who had not contracted STDs (66.7% vs. 34.2%, $OR = 3.85$,

but it was not statistically significant, possibly due to small size, Table IV).

DISCUSSION

The prevalence of different types of MSM behaviors is documented for the first time in Hong Kong by recruiting a large random population sample. The methodology employed in this study maximized the confidentiality of the subjects and has been proven effective in the collection of sexual behavior data in a number of studies (Lau et al., 2000; Lau & Siah, 2001; Lau & Wong, 2000).

The results of this study are comparable to those obtained from the United States and the United Kingdom. In the United States, it was reported that 6.4% of the general male population had had some MSM experience (homosexual or exclusive homosexual behavior) since puberty (Laumann, Gagnon, Michael, & Michaels, 1994); whereas in the United Kingdom, the prevalence of ever experiencing MSM behaviors was 3.5% (Johnson, Wadsworth, Wellings, Field, & Bradshaw, 1994), as compared with the figure of 4.1% for ever having oral or anal sex with a man in this study. In this study, about 2% of the general male population reported to have had at least one male sex partners in the past 6 months, as compared to the observation that 1.1% of the general male population in the United Kingdom reported that they had at least one homosexual partners in the last year (Johnson et al., 1994) and

Table IV. Self-Perceived Chance of Contracting HIV

	Self-perceived chance of contracting HIV in the future				<i>OR</i> ^a
	No chance		High or moderate chance		
	<i>n</i>	Row (%)	<i>n</i>	Row (%)	
Ever had oral or anal sex with a man ^b					
Yes	53	62.4	32	37.6	1.30
No	1,356	68.2	631	31.8	
Had contracted STD in the past 6 months ^c					
Yes	3	33.3	6	66.7	3.85
No	50	65.8	26	34.2	
Had at least one male sex partners in the past 6 months ^c					
Yes	19	47.5	21	52.5	3.42*
No	34	75.6	11	24.4	
Had anal intercourse with male sex partners in the past 6 months ^c					
Yes	5	33.3	10	66.7	4.36*
No	48	68.6	22	31.4	

^a Exact odds ratio.

^b Questions asked to all respondents.

^c Questions asked to those male respondents who ever have had sex with other man ($n = 85$).

* $p < .05$.

a similar figure of 2.7% in the United States (Laumann et al., 1994). The proportion of MSM practicing anal intercourse was 57.6% in United States (Page-Shafer et al., 1999), as compared to that of 37.5% in this Hong Kong study (caution should however be given to the small sample size in this study). In the Dominican Republic, the prevalence of STDs among the MSM population was reported to be 7.3% (Tabet et al., 1996), versus the figure of 10.6% found in this study.

In terms of HIV prevention for the MSM population in Hong Kong, some of these results worth some attention. Caution however has to be given due to the small number of MSM included in this study. Firstly, among those practicing anal sexual intercourse, the majority of them may not always be using condoms. Secondly, MSM (especially those who had practiced anal sexual intercourse) were more likely to have contracted STDs in the past 6 months than male clients of FSW and the male general ("lower risk") population. MSM who had multiple male sex partners or had unprotected anal intercourse in the past 6 months also reported high STDs incidence rates. Thirdly, a higher percentage of the MSM population did not believe in the efficacy of using condoms to prevent HIV, as compared to the "lower risk population" and the male clients of FSW population. Fourthly, the MSM population did not perceive a significantly higher risk for contracting HIV in the future when compared to the "lower risk population." Such perception of risk was significantly lower than that of the male clients of FSW population. However, a high percentage of those who practiced anal intercourse, those who had at least one male sex partner in the past 6 months, and those who had contracted STDs in the past 6 months perceived some risk of contracting HIV in the future (over 60%). The findings suggested that the MSM population was not a homogeneous group in terms of risk perception. Different types of relationship underlying the reported sexual practices may explain part of the heterogeneity; further studies stratifying relevant sexual behaviors and attitudes by relationship between MSM partners would be very informative.

The study also suggests that it is feasible for BSS of MSM to be carried out in Hong Kong. The methodology used was able to give a reasonably low drop out rate in the process of asking MSM-related questions and found that the proportion of MSM in Hong Kong is comparable to that of other countries.

According to the HBM, the present situation might not be conducive to implementation of effective programs for fostering behavioral changes. The low perceived risk would damp the motivation for adopting behavioral changes. The result may imply that the MSM community

in Hong Kong may either be unaware of the risk, or denying it. According to the study done by Jones, Yu, and Candlin (2000), the latter is more likely to be the case. The perception of low efficacy for using condoms to prevent HIV/AIDS may mean that for some MSM, even they were motivated to make behavioral changes, they were not sure that there is an efficacious means for HIV prevention. Relatedly, the high risk of contracting STDs should be made known to the MSM community, so that members of this community would perceive a benefit for making behavioral changes. Therefore, future preventive programs should promote the perceived efficacy of using condoms as well as use of condoms, and reduction of the number of sex partner.

The MSM population's level of knowledge does not seem to be different from the male clients of FSW population and the "lower risk population." A general knowledge campaign may therefore not be a priority.

This study is limited by its small number of MSM identified. This would not allow certain observed differences of "practical significance" (e.g., the association between STDs incidences and number of sexual partner, practice of sex and risk perception, etc., see Table II) to reach statistical significance, due to low statistical power. The response rate of 44.0% may also result in selection bias. However, as discussed, 53.2% refused to join the study when they were firstly contacted, before they were told that the topic of research is related to MSM. In fact, only 1.4% did not complete the sensitive part of the questionnaire; therefore, the bias due to sensitivity of the topic should only be moderate.

Another limitation is related to the objective of the study for testing the feasibility to set up a BSS for the MSM population in Hong Kong. Only some very core questions were asked. Hence a number of important questions such as the relationship between the respondents and their partners, and whether they were "inserters" or "insertees," etc. had not been asked. As this study is of a pilot nature, a larger study is being planned to construct a BSS for the MSM population in Hong Kong. Besides monitoring the trend, future studies should also investigate the decision model behind the practice of risk behaviors and ways that effective interventions could be devised.

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