The Relationship Between Stigma, Sexual Risk Behavior and HIV Testing Among Men

Who Have Sex with Men (MSM) in Kolkata, India

by

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Thesis submitted in partial fulfillment of
the requirements for the degree of
Master of Science in the Duke Global Health Institute in the Graduate School
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ABSTRACT

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Abstract

Men who have sex with men (MSM) are at high risk for HIV, because of engaging in risky sexual practices. In many countries, MSM remain a highly stigmatized and marginalized population, making them harder to reach for HIV prevention intervention. Until recently before the start of this study, homosexual practices in India were criminalized, which may be influential in establishing and upholding stigma towards the MSM community. The prevalence of HIV in MSM populations in India is higher than the Indian national prevalence rate. This study sought to examine the relationship between stigma and use of HIV preventive practices, HIV sexual risk practices, and HIV testing behaviors among MSM. Surveys were conducted with two samples of men in Kolkata, India. One sample was 43 MSM, drawn from an NGO in Kolkata. The other sample was 57 men who do not have sex with men, drawn from men in varying neighborhoods in Kolkata. Correlations, Fisher's exact tests, Wilcoxon rank sum tests, logistic regressions, and ordinary least squares regressions were used to compare the two samples and the relationships between the variables of interest among MSM. It was found that stigma surrounding homosexuality is present in Kolkata and that it is associated with increased sexual risk behavior among MSM. In addition, MSM reported accessing HIV testing more frequently than non-MSM, and greater stigma was in fact associated with increased testing behavior. MSM were also more knowledgeable about HIV and more sexually risky than non-MSM. These results suggest that there is a relationship between stigma, sexual risk behavior, and HIV testing that warrants further study.

Contents

List of Tables

List of Figures

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1. Introduction

Throughout recent decades, substantial efforts have been made globally to curb the spread of HIV and reduce its devastating impact. It is well-known that the burden of this disease is often shouldered by the population of men who have sex with men (MSM).[1] This population tends to be socially marginalized and stigmatized, making it difficult to target MSM populations with effective HIV prevention strategies.[1,2] This stigmatization also often leads to riskier sexual practices and decreased accessing of HIV health services, including testing.[2,3,4] This is, in part, due to the impression that anal sex is safer than vaginal sex and therefore that when having sex with another man, one does not have to use the same protective measures.[3,5] Also, experienced stigmatization can make MSM fearful of disclosing their MSM status and therefore can have an effect on accessing healthcare, which includes testing for HIV.[3] Other theories surrounding stigmatization and sexual risk behavior include the idea that stigmatization can lead to low self-esteem and denial of same sex behavior, which then can lead MSM to engage in unprotected and anonymous sex.[5]

It is important to consider whether and how the continuing stigma of homosexuality relates to HIV risk in the MSM community in India. Historically, homosexuality has been criminalized in India through anti-sodomy laws.[2,5] Because of this, it is possible that anti-homosexual stigma still persists in Kolkata. If so, such stigma may be a barrier to interventions aimed at curbing the spread of HIV in the MSM community.[2]

1.1 HIV in India

India is home to roughly one-seventh of the world's population, and India's population continues to expand. Even though the Indian economy has been growing at a tremendous rate, the country still suffers from many diseases, both communicable and

non-communicable. HIV has a devastating impact on the Indian population that needs to be addressed quickly and effectively. Currently, the prevalence of HIV in the Indian population is roughly 0.36%, or about 2.5 million people infected.[6] Because of the country's large population, this percentage of HIV prevalence ranks India as one of the countries with the highest number of people infected with HIV.[7]

As is the case globally, the MSM community in India is a high-risk group for HIV transmission and acquisition.[2,6,8,9] However, most HIV research and outreach work done in India targets sex workers, truck drivers, and migrants in India rather than MSM.[2,8] If the MSM population continues to be neglected by HIV prevention outreach programs, it will be difficult to curb the spread of HIV throughout the country.[12,9] The infection rate among the MSM community is much higher than the national rate, with estimates ranging from 6% to 19% or higher, depending on the region and accuracy of reporting.[2,6,8,10] As has been done in Africa and the United States, greater HIV prevention efforts need to target the MSM population to help stop the spread of HIV in India.

1.2 Sexual Identities and Practices

In India, MSM identities differ greatly from the Western definitions surrounding homosexuality and gender, and these identities fall into several categories: kothi, panthi, bisexual, double-decker, hijra, or transgender.[2,8,11] Kothis are generally defined as "receptive partners in oral/anal sex," and tend to be more effeminate, which can lead to greater stigma towards these men since they are considered gender non-conforming.[8,11] Panthis are identified generally as "insertive partners in oral/anal sex" and double-deckers are identified as "both insertive and receptive partners." Panthis and double-deckers tend to be less effeminate in their manner and appearance.[2,8,12] Often, panthis and double-deckers do not self-identify as such, but rather are identified in this manner by their kothi partners.[2,12] In addition, hijra is a traditional Indian term for male-to-female

transgender individuals who may or may not be castrated, but is not a term that encompasses all male-to-female transgender individuals in India.[9]

A strong stigma surrounds homosexual practices in India today. The definition of masculinity is often centered on producing a family, and because of this, many MSM claim to be "straight" and get married to women, while still engaging in extramarital sexual practices with other men.[2,12]   These extramarital practices can lead to HIV transmission from husband to wife, since married couples tend not to use condoms.[5,9] This allows for transmission of the virus from the MSM community to the greater population.[2,12]

1.3 MSM and HIV Risk Behaviors

While most HIV research in India has been conducted among sex workers, truck drivers, and migrants,[2] some studies have looked at risk factors for HIV transmission in the MSM community and the relationship between stigma surrounding homosexuality and HIV.[9] Studies have shown that MSM in India are very likely to engage in risky sexual behaviors, such as having unprotected anal sex, that put them at higher risk for HIV acquisition than men who do not engage in sex with other men.[2,9] Also, perceived stigma surrounding homosexuality has been associated with a higher likelihood that a man who has sex with other men will engage in risky sexual behavior.[5]

Studies conducted outside of India have shown that stigma surrounding homosexual practices and prejudice towards MSM can be a major barrier to HIV testing among MSM.[4] This prejudice can stem not just from the community, but also from health workers.[4] The fear of prejudice from service providers can prevent MSM from disclosing their sexual practices and HIV risk behaviors to their health care providers.[10] Because of this, MSM may not receive adequate information about effective strategies for HIV prevention. They also may not be informed of the need to test for HIV. Early

identification of HIV status assists in reducing transmission and starting HIV treatment prior to the onset of full-blown AIDS, which, in turn, is protective against negative health outcomes.[4]

Despite evidence of increased HIV risk activity and decreased HIV testing associated with homosexuality stigma in some countries, little is known about these relationships in India, specifically in Kolkata. In addition, Kolkata is a very densely populated city in India, having been the British capital of India for many years and the current capital of West Bengal, with a population of about 4.5 million people in the city itself and a population of about 14.1 million people in the Kolkata metropolitan area as of 2011.[13] Because the city has such a large population, policy-making about effective HIV control is crucial in order to stem the spread of the virus and keep the impact of HIV/AIDS on the population at a minimum. If the MSM community, one of the major contributing sub-populations to the spread of HIV, is not targeted for effective intervention policy, then the spread of the virus may be difficult to contain.[2] This study sought to answer the following three research questions: 1) Is stigma towards MSM persistent in Kolkata and experienced by MSM?; 2) Is anti-homosexuality stigma in Kolkata associated with HIV testing behaviors among MSM?; and 3) Is anti-homosexuality stigma in Kolkata associated with HIV sexual risk and protective behaviors among MSM? The study hypotheses were: 1) stigma towards MSM and homosexual practices is present in Kolkata and experienced by MSM; 2) this anti-homosexuality stigma is associated with MSM accessing HIV testing less frequently; and 3) this anti-homosexuality stigma is associated with MSM engaging in more risky sexual behavior and using preventive measures against HIV less often than non-MSM. The ultimate goal of testing these hypotheses was to inform health outreach workers and policy makers for future HIV prevention efforts in Kolkata.

2. Methods

Data for this study come from two convenience samples of men located in Kolkata, India, in June – August 2013. The study's primary group of interest was MSM. However, in order to understand the experience of MSM, it was necessary to collect comparable data from a group of non-MSM, hereafter called the "comparison group." Participants in both groups were required to be male or transgender, age 18 or older, and have been at risk for HIV acquisition and transmission, defined by self-reports of having engaged in sexual activity in the past year and plans to engage in sexual activity in the future. While data were collected in Kolkata, it was not required that participants be Kolkata residents.

Data from the MSM group were collected mainly through contacts at a local non-governmental organization (NGO) that serves the lesbian, gay, bisexual, transgender, hijra, and queer (LGBTHQ) community of Kolkata: Gokhale Road Bandhan, affiliated with the Association of Transgender-Hijra of Bengal (ATHB).

Data from the non-MSM comparison group were collected by a research assistant, who was employed and trained to administer the survey to men throughout neighborhoods in Kolkata. The research assistant was a male in his mid-twenties from Kolkata, and familiar with Kolkata neighborhoods. The assistant attempted to get male respondents of varying ages, social class, and employment status. He did this by visually selecting men who appeared to differ in age and class, as well as by selecting participants from geographic areas that generally differed in social class. A small number of survey respondents recruited for the comparison group were found to fall under the classification of MSM, based on analysis of their responses, so these were grouped in with the MSM sample for analysis.

Survey administration typically took between 10 and 15 minutes. The survey was translated into Bangla and was distributed in either English or Bangla, depending on the preference of the respondent. Some individuals did not feel comfortable reading Bangla and in these cases the survey questions were read allowed to the respondent by the research assistant who administered the survey. In addition, some individuals could read English, but had the survey administrator clarify the meaning of certain questions aloud in Bangla.

2.1 Measures

Demographic items. Demographic items (listed in detail in Table 1) included questions about age (as a categorical variable), sexual orientation (categorical), gender (categorical, including transgender), education level (ordinal, increasing with increasing level of education), caste (free response), socio-economic class (ordinal, increasing with higher socioeconomic class), religion (categorical), type of residence (categorical), living companions (categorical- alone, with family, or with friends), where the respondent is from (categorical), employment status (ordinal: not employed, employed part-time, employed full-time), relationship status (categorical, with "single" as the referent category), and income (free response).

HIV/AIDS knowledge. To assess knowledge about HIV/AIDS, items were included from the AIDS-Related Stigma Scale and the HIV Knowledge Questionnaire.[14,15] Specifically, 14 items were included from the 45-item HIV Knowledge Questionnaire and one item was included from the AIDS-Related Stigma Scale.[14,15] An example of one of the survey questions to determine HIV knowledge is: "Having sex with more than one partner can increase a person's chance of being infected with HIV," with the answer choices consisting of "true," "false," and "don't know." In previous studies in the US,

the HIV Knowledge Questionnaire was found to have a Cronbach's alpha of 0.91,[14] and the AIDS-Related Stigma Scale was found to have a Cronbach's alpha of 0.75.[15]

A score was created for knowledge and awareness of HIV from the 15 items used in the survey. Each item was assigned a 0 if answered incorrectly by the respondent or a 1 if answered correctly, allowing for a maximum score of 15.

Condom use and condom use self-efficacy. Five items for condom use and condom use self-efficacy were included in this survey. Examples of the items that were included are, "How confident do you feel that you could purchase condoms without feeling embarrassed?" and "How confident do you feel in your ability to suggest using condoms with a new partner?" each with 5 answer choices ranging from "not at all confident" to "extremely confident." The five items included were adapted from the Condom Use Self-efficacy Scale (CUSES), which is a 28-item scale.[16] Items that were adapted from this scale were changed from simple "yes/no" questions to questions that measure level of confidence in condom use self-efficacy. Two items were combined from the CUSES and modified to include options for reasons why the participant may have felt like they could not suggest condom use to his partner. Items were excluded if they did not seem relevant and/or important in the Indian population for this study, or they seemed repetitive since the goal was to minimize the length of the final survey. An example of an excluded item is, "I feel confident in my own or my partner's ability to maintain an erection while using a condom," since this did not seem relevant to the hypothesis that stigma is associated with less use of preventive measures amongst MSM. The CUSES scale was originally tested among college students in the US and was found to have a Cronbach's alpha of 0.91.[16] A modified version of the scale was tested among Ghanaian youth to determine the cultural adaptability of the scale and was found to be culturally appropriate.[17]

In addition, a standardized scale was created to measure confidence purchasing, suggesting, and using condoms. This scale included the 5 items mentioned above, and was created using alpha covariances for two reasons. First, alpha covariances account for the fact that each item had different response scales. Second, using alpha covariances allowed for standardization by using variances instead of raw scores, so that each item was given the same weight in the overall scale.

HIV testing. Four questions were included on the survey about HIV testing behavior, including one item from the Risk Assessment Battery (RAB), which is a 29-item instrument.[18] The questions ask about how many times the participant has been tested for HIV, when the last time was that he was tested for HIV, if he ever tested positive for HIV, and if/when he planned to get a future HIV test. Number of times tested for HIV was coded as a continuous variable.

Sexual practices and risk behavior. Eleven items about past six-month sexual practices and concerns about HIV and testing were included from the RAB.[18] Items were excluded from the RAB if they pertained to drug-use, because the current study did not focus on drug-use and HIV risk. Some of the measures included in the survey were adapted from the RAB to include more options for number of sexual partners in the past six months. For example, the survey included, "With how many men have you had sex in the past six months?" In the RAB, subjects are given 4 answer choices: 0 men, 1 man, 2 or 3 men, or 4 or more men [18]. In order to obtain more thorough answers and remove any bias that may arise from participants perceiving that having 4 or more partners is viewed as excessive based on it being the highest response option, the answer choices were changed to: 0 men, 1-2 men, 3-4 men, etc. up to 10 or more men. The additional response options may have served to improve response accuracy, especially among

participants who engage in sex work and therefore may have many more than 4 partners in a six-month period.

Two items were also included to ask about number of new sexual partners in the past 6 months, and condom use with different partners in the past 6 months. In addition, a measure was added to ask about how the subject defines himself if he has sex with men, using the Indian categories of kothi, panthi, double-decker, and hijra. This was included because sexual identities among Indian MSM tend not to conform to Western definitions of MSM sexual behavior.[2,8,11]

To analyze sexual risk behaviors, a single measure of overall sexual risk was created that included the variables for number of male sex partners, number of female sex partners, frequency of condom use, proportion of partners with whom they did not use condoms, number of times they paid for sex, number of times they were paid for sex, number of partners with whom they had sex whom they knew were HIV-positive, and the number of new sex partners. Each of the 8 items included in the sexual risk score had a range of 0-2, with 0 as "low risk," 1 "moderate risk," and 2 "high risk," which allowed for a maximum overall score of 16.

Experienced stigma. Questions to measure experienced stigma were adapted from the 10-item measure, the China MSM Stigma Scale. The China MSM Stigma Scale uses the term "homosexuals," which was changed to "MSM" for this study. For example, the item, "How often have you heard that homosexuals are not normal?" was changed to "How often have you heard that men who have sex with men are not normal?" [11,19] This scale was originally created for use in the Chinese population but was adapted by Logie et al. for use in India.[11] The version adapted for use in India had an overall Cronbach's alpha of 0.84.[11] An additional item was created for this section of the survey to measure experienced stigma from health care providers (i.e., "How often have

you felt discriminated against by a doctor because you have sex with men?"). This item was added to determine if there is an association between experienced stigma from health care providers and HIV testing.

A similar method to what was used for the condom use efficacy score was also used to create an experienced stigma scale for MSM, which included the 11 stigma items mentioned above. This method allowed for standardization of each item, and was created in a way to account for the fact that those who responded that they do not have sex with men were instructed not to complete the experienced stigma section.

Observed stigma in general population. Stigma of MSM in the general population was measured via the question, "How often have you heard that men who have sex with men are not normal?" and was scored such that higher scores indicate having heard this more frequently. This question was part of the stigma scale mentioned above; however, all survey respondents (both MSM and non-MSM) were asked to answer this question on hearing that MSM are not normal, whereas only MSM were instructed to answer the other 10 items on experienced stigma. This item was directed toward both samples in order to measure stigma of MSM in the general population.

2.2 Analysis

Classification of MSM status was determined through analysis of three questions about sexual orientation and sexual practices: if any participant responded that they identified as gay or bisexual, or responded that they had ever had sex with a man, they were classified as MSM, and all others who responded that they identified as being straight and had never had sex with a man were classified as non-MSM. In total, 6 participants in the comparison sample reported having ever had sex with men, and these participants were therefore included in the MSM sample for analyses.

The main variables of interest were analyzed in relationship to each other using Spearman pair-wise correlations. A matrix of these correlations was created to analyze the relationship between HIV knowledge, condom use confidence, number of times tested for HIV, experienced homosexuality stigma by MSM, observed homosexuality stigma in the general population, and sexual risk behaviors. Kruskal Wallis equality of population tests were done to test the association of these main variables of interest with demographic variables, as well as to test the association of demographic variables with each other.

Ordinary least squares regressions were run on the main variables of interest in order to test the study hypotheses. Logistic generalized linear model regressions were run with binomial variables of interest. Demographic items that were determined to have statistically significant associations set at $p <= 0.05$ with the variables of interest were included in multivariable regression models. Any demographic item that did not have a statistically significant association with the response variable was not included in multivariable regressions. In addition, because of missing data, socioeconomic class was not included in regression models. Any variable that was found to contribute nothing to the full model (determined by $p>0.90$) was removed from the model in order to keep the number of variables in the model to a minimum because of the small sample size.

Statistical significance was determined based on an alpha level of 0.05. The data collected from these surveys were analyzed using Stata 12.1.[20] All procedures in this study were approved by the Duke University Institutional Review Board.

3. Results

3.1 Demographics

A total of 114 men and transgender individuals in Kolkata took the survey. Of the 114 respondents, 14 were excluded because they did not meet the inclusion criterion of having ever had sex. Of the 100 participants whose survey responses were used in the analysis, 43 were classified as MSM and 57 were classified as non-MSM. All transgender individuals were included in the MSM category. As reported in Table 1, forty-four percent of participants were in the 18-24 age category. When the respondents were divided into MSM and non-MSM, the most frequent age category for MSM was 18-24 (63% of MSM), whereas the most frequent age category for non-MSM was 25-34 (46% of non-MSM). The majority of both MSM and non-MSM responded that secondary school was their highest level of education (56% and 50%, respectively). However, among MSM, college was the second most frequently reported highest level of education (16%), whereas among non-MSM the second most frequently reported highest level of education was no formal education (20%), although this difference was not statistically significant. The majority of MSM (70%) responded that their relationship status was "single," whereas the majority of non-MSM (54%) responded that they were married. Most participants responded that their social class was low class, lower-middle class, or middle class with the highest proportion of MSM falling into middle class (40%), whereas the highest proportion of non-MSM fell into lower-middle class (46%). Employment status was fairly evenly distributed among MSM between full-time, part-time, and unemployed, whereas the majority of non-MSM (75%) claimed to be employed part-time. The majority of participants among both MSM and non-MSM responded that they lived in housing rather than on the streets (92% and 86%,

respectively) and also lived with family (72% and 84% respectively) as opposed to alone or with friends.

Table 1: Demographic Data

		MSM	non-MSM	Combined MSM and non-MSM	Significance test
Age					p=0.007
MSM n=43	18-24	63%	30%	44%	
non-MSM n=57	25-34	21%	46%	35%	
	35-44	7%	12%	10%	
	45-54	7%	4%	5%	
	55-64	2%	9%	6%	
Education					p=0.338
MSM n=43	No formal education	9%	20%	15%	
non-MSM n=56	Primary school	12%	18%	15%	
	Secondary school	56%	50%	52%	
	College	16%	11%	13%	
	University	2%	2%	2%	
	Postgraduate	5%	0%	2%	
Relationship Status					p=0.000
	Single	70%	30%	47%	
MSM n=43	In a relationship	21%	12%	16%	
non-MSM n=57	Married	9%	54%	35%	
	Separated	0%	4%	2%	
	Divorced	0%	0%	0%	
	Widowed	0%	0%	0%	
Social Class					p=0.001
MSM n=30	Low class	27%	41%	36%	
non-MSM n=54	Lower-middle class	20%	46%	37%	
	Middle class	40%	13%	23%	
	Upper-middle class	7%	0%	2%	
	Upper class	7%	0%	2%	
Employment					p=0.000
MSM n=40	Unemployed	33%	16%	23%	
non-MSM n=55	Part-time	35%	75%	58%	
	Full-time	33%	9%	19%	
Housing					p=0.516
MSM n=39	Housed	92%	86%	88%	
non-MSM n=56	Street/Outdoors	8%	14%	12%	
Living Companions					p=0.195
MSM n=43	Live alone	16%	5%	10%	
non-MSM n=56	With family	72%	84%	79%	
	With friends	12%	11%	11%	

13

3.2 Correlational Findings, Associations, and Distributions of Variables of Interest

As shown in Table 2, increased HIV knowledge was significantly positively correlated with greater number of past HIV tests ($r=0.30$, $p=0.0028$). In addition, greater number of HIV tests in the past was significantly positively correlated (although weakly) with more experienced stigma by MSM ($r=0.21$, $p=0.0415$) and with sexual risk behaviors ($r=0.45$, $p=0.0000$). Finally, greater experienced stigma was significantly correlated with the combined measure of increased sexual risk behaviors ($r=0.20$, $p=0.0441$). In table 3, demographic items were analyzed with the main variables of interest via Kruskal-Wallis equality of population tests and several significant associations were found between demographic items and the variables of interest, such as education level and number of times tested for HIV. In addition, several demographic items were significantly associated with each other, such as relationship status and age. These results can be seen in detail in Table 3. Table 4 displays the distributions and descriptive statistics of the continuous variables of interest.

Table 2: Correlation Matrix

	HIV Knowledge Score	Condom Confidence	# of Times Tested for HIV	Perceived Stigma by MSM	Observed Stigma in Combined Population	Sexual Risk Behaviors
HIV Knowledge Score	1.0000					
p-value						
Condom Confidence	0.1470	1.0000				
p-value	0.1465					
# of Times Tested for HIV	0.3000	0.1650	1.0000			
p-value	0.0028	0.1063				
Perceived Stigma by MSM	0.0388	-0.0922	0.2074	1.0000		
p-value	0.7017	0.3642	0.0415			
Observed Stigma in Combined Population	-0.0490	0.1971	0.1547	-0.5327	1.0000	
p-value	0.6849	0.1020	0.2045	0.0000		
Sexual Risk Behaviors	0.0982	-0.0983	0.4520	0.2018	-0.1279	1.0000
p-value	0.3312	0.3331	0.0000	0.0441	0.2877	

*Correlations determined via Spearman pair-wise correlation

Note: n = 100

		Age	Education Level	Relationship status	Socio-economic class	Employment status	Housing status	Living companions
HIV knowledge	chi^2	9.765	10.905	7.687	4.878	4.935	7.76	2.108
	p-value	0.0446	0.0533	0.0529	0.3001	0.0480	0.0053	0.3486
Condom confidence	chi^2	12.943	47.603	11.469	19.434	2.051	5.397	1.049
	p-value	0.0116	0.0001	0.0094	0.0006	0.3586	0.0202	0.5919
No. times tested for HIV	chi^2	10.505	11.879	12.2	13.712	18.43	0.004	0.609
	p-value	0.0327	0.0365	0.0067	0.0083	0.0001	0.9485	0.7374
Experienced stigma by MSM	chi^2	8.523	5.648	3.31	9.088	2.446	0.015	3.344
	p-value	0.0742	0.3420	0.3462	0.0589	0.2943	0.9028	0.1879
Sexual Risk behaviors	chi^2	7.581	3.449	2.139	15.374	0.691	0.589	3.079
	p-value	0.1082	0.6312	0.5440	0.0040	0.7079	0.4427	0.2144

Table 4: Distributions of Continuous Variables of Interest

	Sample	N	mean	SD	p25	p50	p75	min	max
HIV knowledge	MSM	43	8.860	2.178	8.00	8.00	11.00	5.00	14.00
	non-MSM	57	7.175	2.147	6.00	8.00	8.00	0.00	13.00
	combined	100	7.900	2.307	7.00	8.00	9.00	0.00	14.00
Sexual risk behavior	MSM	43	5.651	2.599	4.00	5.00	8.00	0.00	10.00
	non-MSM	57	2.281	1.698	1.00	2.00	3.00	0.00	6.00
	combined	100	3.730	2.704	2.00	3.00	5.00	0.00	10.00
Condom use confidence	MSM	42	0.148	0.813	-0.54	0.45	0.82	-1.36	1.66
	non-MSM	57	-0.158	0.842	-0.61	-0.30	0.46	-1.36	1.58
	combined	99	-0.028	0.840	-0.61	-0.19	0.69	-1.36	1.66
No. times tested for HIV	MSM	41	2.585	2.881	0.00	1.00	4.00	0.00	9.00
	non-MSM	56	0.161	0.626	0.00	0.00	0.00	0.00	4.00
	combined	97	1.186	2.265	0.00	0.00	1.00	0.00	9.00
Experienced stigma	MSM	43	-0.091	0.662	-0.45	0.02	0.20	-2.41	1.36

3.3 HIV Knowledge

HIV knowledge scores (Cronbach's alpha= 0.696) were first analyzed to determine if there was any significant difference between MSM and the comparison group on knowledge about HIV/AIDS, which was done via a Wilcoxon rank-sum test. HIV knowledge and awareness scores for MSM versus the comparison group significantly differed (Wilcoxon z = -3.409, p = 0.0007), with MSM scores indicating greater knowledge and awareness of HIV than non-MSM.

The data on HIV knowledge were further examined to determine where the gaps in knowledge were, both overall in the combined study population, as well as the differences between MSM and non-MSM. The questions that were most frequently

answered incorrectly (by over 50% of respondents per question), and can therefore be determined to be where the biggest gaps in knowledge exist, are listed below, in order of which were answered incorrectly most frequently with the correct answer in parentheses:

- Pulling out the penis before a man climaxes keeps the partner from getting HIV during sex (False)
- A person with HIV can look and feel healthy (True)
- Taking a test for HIV one week after having sex will tell a person if he or she has HIV (False)
- A person can get HIV from oral sex (True)
- People who have been infected with HIV, quickly show serious signs of being infected (False)
- Showering or washing one's genitals after sex keeps a person from getting HIV (False)

All six of these questions remained the questions most frequently answered incorrectly when MSM were compared to non-MSM; however, as can be seen in Figure 1 below, a significantly higher percentage of MSM answered these questions correctly than non-MSM, based on Fisher's exact tests. There were also several questions (e.g., questions 1, 3, 9, 12, 13, and 14) that were answered correctly more frequently by non-MSM than by MSM, as can be seen in Figure 1 below. The questions themselves can be seen in Table 5 below.

As shown in Table 6, MSM had significantly higher HIV knowledge scores than non-MSM (ß= 1.214, p= 0.010). The relationships and significance of demographic variables with HIV knowledge in this multivariable regression can be seen in the table and are summarized as follows: living on the street/outdoors as opposed to was

associated with lower HIV knowledge scores (ß= -1.575, *p*= 0.020), whereas higher

education was associated with higher HIV knowledge scores (ß= 0.595, *p*= 0.006).

Table 5: HIV Knowledge Questions, with the MSM status of the more knowledgeable group in parentheses (n=100)

1	You can usually tell if someone has HIV by looking at them (non-MSM)
2	People who have AIDS are dirty (MSM)
3	A person can get HIV even if he or she has sex with another person only one time (non-MSM)
4	A person can get HIV by sharing a glass of water with someone who has HIV (MSM)
5	Pulling out the penis before a man climaxes keeps the partner from getting HIV during sex (MSM)
6	Showering or washing one's genitals after sex keeps a person from getting HIV (MSM)
7	People who have been infected with HIV quickly show serious signs of being infected (MSM)
8	A person will NOT get HIV if he or she is taking antibiotics (MSM)
9	Having sex with more than one partner can increase a person's chance of being infected with HIV (non-MSM)
10	Taking a test for HIV one week after having sex will tell a person if he or she has HIV (MSM)
11	A person can get HIV from oral sex (MSM)
12	There is a cure for AIDS (non-MSM)
13	A person can get HIV from a toilet seat (non-MSM)
14	Using a latex condom or rubber can lower a person's chance of getting HIV (non-MSM)
15	A person with HIV can look and feel healthy (MSM)

Table 6: Regression of HIV Knowledge Scores (n=99)

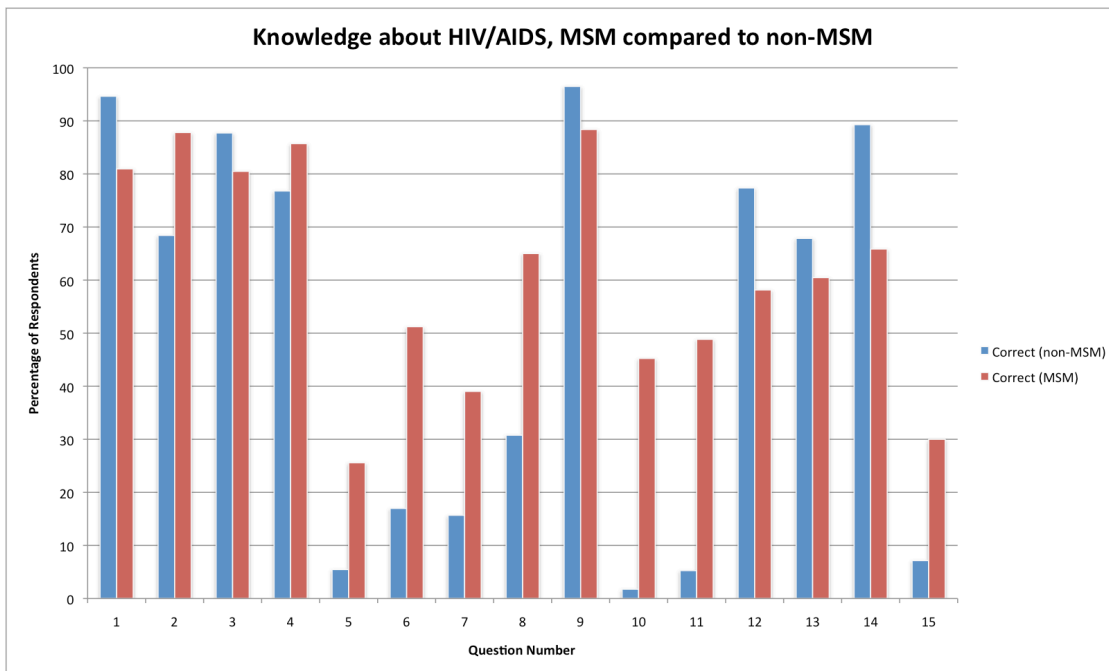| HIV knowledge score[1]				
	Coefficient	p-value	95% Confidence Interval	
MSM status	1.214	0.010	0.298	2.129
Education Level[1]	0.595	0.006	0.178	1.011
Live on street/outdoors[2]	-1.575	0.020	-2.900	-0.250
Married[3]	-0.160	0.749	-1.148	0.829
intercept	6.555	0.000	5.438	7.671
[1] higher values for HIV knowledge and education indicate more/higher level of each construct.				
[2] Compared to housed				
[3] Compared to single				

Figure 1: Knowledge About HIV/AIDS, by MSM Status

3.4 Stigma

The one-item ordinal measure of observed stigma of MSM status in the combined population was first analyzed via descriptive statistics, and the average response score was higher for MSM (μ=0.88, ∂=1.09, min = 0, max = 3) than non-MSM (μ =0.55 ∂=0.63, min = 0, max = 2). Specifically, MSM were more likely to report having heard that MSM are not normal at least once than were non-MSM. However, a Fisher's exact test showed that the difference was not significant (*p*= 0.143). In other words, 50.0% of MSM reported having heard that MSM are not normal at least once and 48.3% of non-MSM reported having heard that MSM are not normal at least once. In addition, 23.8% of MSM reported having heard this a few times or more, compared to 6.9% of non-MSM, although these differences were not statistically significant.

19

Next, among the MSM sample, response frequencies to individual items for experienced stigma were analyzed (Cronbach's alpha = 0.738). The response option frequencies for MSM were as follows:

- 38.5% of MSM respondents felt that their MSM status hurt or embarrassed their family at least once; 18.0% a few times or more

- 54.1% reported having been made fun of or called names at least once because of their MSM status; 29.7% a few times or more

- 22.5% reported having been physically accosted for having sex with men at least once

- 37.5% reported having to pretend not to have sex with men to be accepted at least once; 22.5% a few times or more

- 30.0% reported having not been accepted by their family at least once because of their MSM status

- 30.0% reported having lost friends at least once because of their MSM status

- 27.5% reported having been kicked out of school at least once because of their MSM status

- 33.3% reported having lost a place to live at least once because of their MSM status

- 17.5% reported having lost a job at least once because of their MSM status

- 10.8% reported having felt discriminated against by a doctor at least once because of their MSM status

Table 7 shows that in a multivariable regression of experienced stigma among MSM only living with friends as opposed to living alone was significantly associated with higher experienced stigma (ß=0.864, *p*=0.008) when accounting for age and being in

a relationship versus being single. However, in bivariate analyses, all three of these

demographic items significantly related to experienced stigma among MSM.

Table 7: Regression of Experienced Stigma Among MSM Only (n=43)

Experienced stigma[1]*				
	Coefficient	p-value	95% Confidence Interval	
Age category[1]	-0.137	0.111	-0.307	0.033
Live with friends[2]	0.864	0.008	0.236	1.493
In a relationship[3]	0.222	0.375	-0.279	0.723
intercept	-0.149	0.205	-0.382	0.085
[1] Higher values for experienced stigma and age indicate more/higher levels of each construct				
[2] Compared to living alone				
[3] Compared to single				
* Among MSM only				

3.5 HIV Testing Behaviors

Among all participants combined, 66.0% reported never having been tested for

HIV, 11.3% reported having been tested only once, and 17.5% reported having been

tested more than once for HIV. When the data were examined for differences in testing

behaviors between MSM and non-MSM, 91.1% of non-MSM reported having never been

tested for HIV, versus 31.7% of MSM. In addition, MSM reported significantly higher

numbers of HIV tests (Wilcoxon, $z=-6.166$, $p=0.000$), with the mean number of tests for

MSM being 2.59 (SD= 2.88), and for non-MSM being 0.16 (SD= 0.63).

This significant difference between the two groups was also seen in planned

behavior for HIV testing in the next 30 days. When asked if they plan to get tested for

HIV in the next 30 days, 61.0% of MSM reported that they do intend to get tested,

whereas only 7.1% of non-MSM reported that they plan to get tested in the next 30 days

(Fisher's exact test, $p=0.000$). In addition, when asked about planned behavior to get

tested for HIV in the next 6 months, MSM were significantly more likely to report

planned behavior than non-MSM. Specifically, 65.9% of MSM reported that they

intended to get tested, whereas only 5.5% of non-MSM reported that they intended to get tested (Fisher's exact test, p=0.000).

Next, as shown in Table 8, greater observed stigma (having heard MSM are not normal more frequently) was significantly associated with having been tested for HIV more times (ß= 0.703, p=0.023), when controlling for MSM status, condom use confidence, sexual risk behavior, education level, employment status, and being married as opposed to single.

Table 9 shows that increased knowledge about HIV (ß= 0.262, p=0.123), number of times tested for HIV (ß= 0.358, p=0.052), higher sexual risk behavior (ß= 0.251, p=0.149), and MSM status (ß= 1.010, p=0.332) were associated with having plans to get tested for HIV in the next 30 days, although not significantly in a multivariable logistic regression that also accounted for employment status and being married versus single.

In Table 10 it can be seen that greater number of times tested for HIV (ß= 0.690, p=0.024) was significantly associated with planning to test for HIV in the next 6 months in a multivariable logistic regression. In addition, higher sexual risk behavior (ß= 0.263, p=0.234) and MSM status (ß= 1.711, p=0.111) were associated with planning to test for HIV in the next 6 months, although not significantly. Being employed part time or full time as opposed to unemployed was significantly associated with planning to test in the next 6 months (ß= 1.409, p=0.041), whereas being married as opposed to single was associated with not planning to test in the next 6 months (ß= -2.772, p=0.057), although not significantly.

Also, as shown in Figure 3, MSM and non-MSM differed in terms of anxiety about acquiring HIV/AIDS. A Fisher's exact test shows that this difference

between the two groups is significant, with MSM significantly more anxious about acquiring HIV (Fisher's $p= 0.000$).

Table 8: Regression of Number of Times Tested for HIV (n=65)

Number of times tested for HIV				
	Coefficient	p-value	95% Confidence Interval	
Observed stigma[1]	0.703	0.023	0.101	1.305
Sexual risk behavior[1]	0.065	0.614	-0.190	0.320
Condom use confidence[1]	0.405	0.336	-0.432	1.242
MSM status	1.464	0.071	-0.127	3.055
Education Level[1]	0.168	0.572	-0.424	-0.076
Employment status[2]	1.065	0.011	0.251	1.878
Married[3]	-0.778	0.231	-2.065	0.508
intercept	-1.047	0.272	-2.937	0.842
[1] Higher values for observed stigma, sexual risk behavior, condom use confidence, & education indicate higher levels of each construct				
[2] Coded in positive direction, increasing from unemployed, to employed part-time, to employed full-time				
[3] Compared to single				

Table 9: Logistic Regression of Plans to Test in Next 30 days (n=88)

Plans to test in next 30 days				
	Coefficient	p-value	95% Confidence Interval	
HIV knowledge score[1]	0.262	0.123	-0.071	0.594
No. of times tested for HIV	0.358	0.052	-0.003	0.719
Sexual risk behavior[1]	0.251	0.149	-0.090	0.593
MSM status	1.010	0.332	-1.031	3.051
Employment status[2]	0.826	0.150	-0.299	1.951
Married[3]	-2.124	0.067	-4.393	0.145
intercept	-5.521	0.003	-9.165	-1.877
[1] Higher values for HIV knowledge and sexual risk behavior indicate higher levels of each construct				
[2] Coded in positive direction, increasing from unemployed, to employed part-time, to employed full-time				
[3] Compared to single				

Table 10: Logistic Regression of Plans to Test in Next 6 months (n=86)

Plans to test in next 6 months				
	Coefficient	p-value	95% Confidence Interval	
Sexual risk behavior[1]	0.263	0.234	-0.170	0.695
No. of times tested for HIV	0.690	0.024	0.092	1.289
MSM status	1.711	0.111	-0.393	3.814
Employment status[2]	1.409	0.041	0.058	2.759
Married[3]	-2.772	0.057	-5.626	0.081
intercept	-4.143	0.001	-6.541	-1.745

[1] Coded in positive direction, increasing with higher sexual risk score (greater risk)

[2] Coded in positive direction, increasing from unemployed, to employed part-time, to employed full-time
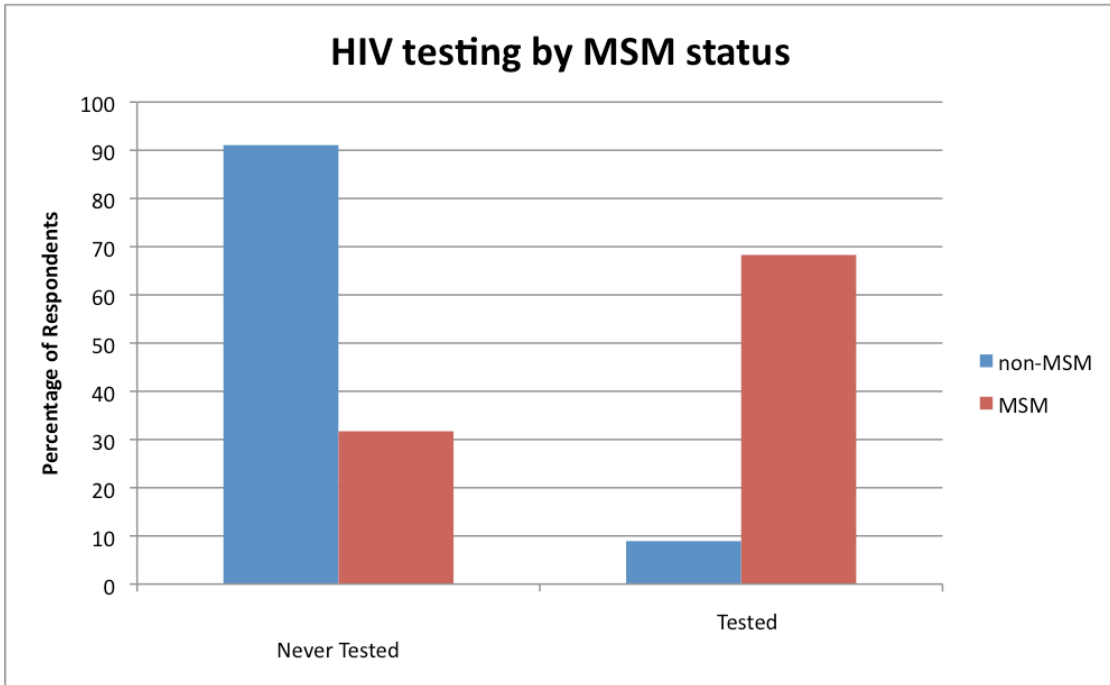
[3] Compared to single

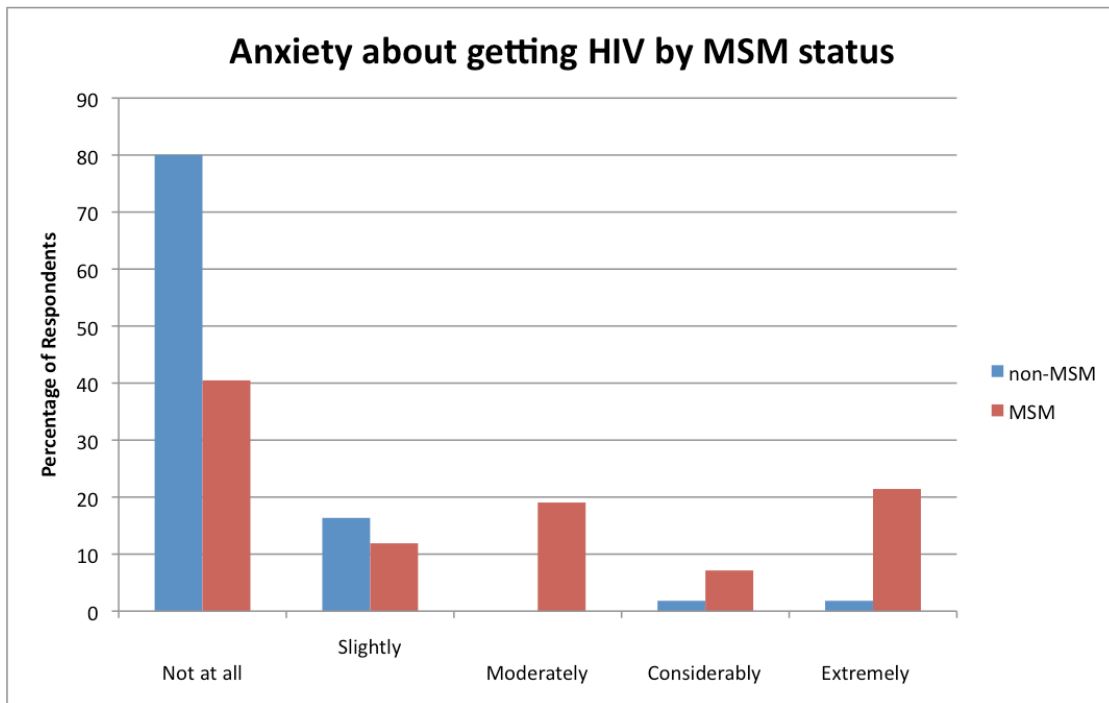**Figure 2: Percentage of Respondents Ever Tested for HIV, by MSM Status**

Figure 3: How Anxious Respondents Are About Getting HIV, by MSM Status

3.6 Sexual Risk Behaviors

A Wilcoxon rank test of sexual risk behaviors by MSM status showed that MSM are significantly more sexually risky than non-MSM (Wilcoxon z= -5.891, *p*= 0.000). As seen in Table 11, greater experienced stigma was significantly associated with increased sexual risk behavior among MSM (ß= 1.626, p= 0.007), when accounting for anxiety about acquiring HIV. Table 12 demonstrates that among MSM only, those who reported higher experienced stigma were significantly more likely to use condoms less frequently (ß= 0.779, *p*= 0.032) when controlling for being married versus single, and age. In addition, Table 13 shows that MSM who reported greater experienced stigma were significantly more likely not to use condoms with a greater number of sexual partners (ß= 0.766, *p*= 0.027), when controlling for being married as opposed to single.

Table 11: Regression of Sexual Risk Behavior Among MSM (n=42)

Sexual Risk Behavior[1*]	Coefficient	p-value	95% Confidence Interval	
HIV anxiety[1]	0.167	0.454	-0.284	0.624
Experienced stigma[1]	1.626	0.007	0.472	2.780
intercept	5.609	0.000	4.595	6.624
[1]Higher values for sexual risk behavior, HIV anxiety, and experiencd stigma indicate higher levels of each construct				
[*]Among MSM only				

Table 12: Regression of Condom Use Frequency Among MSM (n=42)

Condom Use Frequency[1*]	Coefficient	p-value	95% Confidence Interval	
Experienced stigma[2]	0.779	0.032	0.073	1.485
Married[3]	-0.342	0.732	-2.343	1.660
Age category[2]	0.381	0.196	-0.205	0.967
intercept	1.622	0.000	1.099	2.145
[1]Coded in negative direction, increasing with higher risk behavior (less frequent condom use)				
[2]Higher values for experiencd stigma and age indicate higher levels of each construct				
[3]Compared to single				
[*]Among MSM only				

Table 13: Regression of Number of Sexual Partners Without Using CondomsAmong MSM (n=38)

Number of Sexual Partners without Using Condoms[1*]	Coefficient	p-value	95% Confidence Interval	
Experienced stigma[2]	0.766	0.027	0.091	1.440
Married[3]	-1.150	0.049	-2.294	-0.006
intercept	1.473	0.000	1.115	1.831
[1]Coded in positive direction, increasing with higher risk behavior (more partners without condoms)				
[2]Coded in positive direction, increasing with higher experienced stigma score (greater stigma)				
[3]Compared to single				
[*]Among MSM only				

3.7 Summary of Key Findings

In summary, MSM were found to be significantly more knowledgeable about HIV than non-MSM; however, there were still many gaps in knowledge. There were also certain HIV knowledge items about which non-MSM were significantly more knowledgeable than MSM. Analysis of observed homosexuality stigma showed that 50.0% of MSM have heard that MSM are not normal at least once and 48.3% of non-MSM reported having heard that MSM are not normal at least once. Further, 23.8% of MSM reported having heard this a few times or more, compared to 6.9% of non-MSM, although these differences were not statistically significant.   Analysis of experienced stigma demonstrated that each of the homosexuality stigma items have been experienced by a high percentage of the MSM in this study, and many of the MSM have experienced each item more than once. HIV testing behaviors were significantly different between MSM and non-MSM, with MSM having been tested for HIV more often than non-MSM. Multivariable regression showed that greater number of times tested for HIV is significantly associated with greater observed homosexuality stigma. In addition, MSM were found to be significantly more sexually risky than non-MSM, and that increased sexual risk behavior was significantly associated with greater experienced stigma among MSM. Greater experienced stigma was also significantly associated with using condoms less frequently among MSM and with greater number of partners MSM have without using condoms.

4. Discussion

This study adds to our knowledge on the status of stigma surrounding homosexuality in Kolkata and examines the relationships between stigma, MSM status, HIV testing behaviors, and sexual risk behaviors. The study results suggest that stigma surrounding homosexuality is still present in Kolkata and is perceived by MSM and transgender individuals. Higher experienced stigma among MSM was positively associated with increased sexual risk behavior, as well as with less frequent use of condoms with different sexual partners. These findings are consistent with the original study hypotheses that the presence of stigma surrounding homosexuality would relate to increased sexual risk behavior and decreased use of protective measures against HIV. MSM had greater knowledge about HIV and HIV transmission compared to non-MSM, which is consistent with studies conducted in other developing countries, such as that conducted by Fay et al among MSM in Malawi, Botswana and Namibia.[3] However, knowledge among both samples was quite imperfect, with non-MSM much more knowledgeable about certain HIV knowledge items.

MSM status was also associated with increased sexual risk behavior, meaning that respondents who were classified as MSM were on average more knowledgeable about how HIV is spread but also engaged in more sexual risk behaviors. The finding that MSM were more sexually risky is consistent with other studies on MSM in India that have concluded that HIV risk behavior is high among all categories of MSM in different parts of India.[9] In addition, MSM in this study were found to be much more anxious about acquiring HIV, which is logical given that MSM tended to be both more knowledgeable about how HIV is transmitted and more sexually risky overall than non-MSM. This increased anxiety about acquiring HIV is supported by other research in

India, which has shown that MSM perceive themselves to be at higher risk of HIV acquisition.[5]

In contrast to the original study hypothesis that MSM would be less likely to get tested for HIV because of stigma surrounding homosexuality, it was instead found that MSM were significantly more likely to get tested for HIV than non-MSM. While this does not follow with the original hypothesis, it was also found that having heard before that MSM are not normal was significantly positively associated with the number of times respondents had been tested for HIV in the past, and that this relationship was significant when accounting for MSM status. Therefore, instead of stigma surrounding homosexuality relating to less frequent testing for HIV among MSM, it was associated with increased testing behavior. However, number of times tested for HIV was not significantly associated with the score for experienced stigma among MSM, only with the measure for observed stigma. Therefore, it is difficult to say what the true relationship is between stigma surrounding homosexuality and HIV testing behaviors. Nevertheless, it was clear that MSM tested significantly more often for HIV, with a mean of 2.59 times versus 0.16 times for non-MSM.

4.1 Limitations

This study had several limitations. It is important to note that these findings cannot be generalized to the population of MSM in Kolkata for several reasons. First, the sample was not selected randomly and therefore it cannot be concluded that the sample represents the larger population of men and transgender people in Kolkata. Because the sample of MSM was drawn almost exclusively from one NGO in Kolkata, the variation of MSM throughout the city was not captured. The health seeking behaviors and HIV knowledge scores among the MSM from this NGO may also not be representative of the greater MSM population in Kolkata, since NGOs typically are concerned with teaching

about how HIV is spread and encouraging HIV testing. Therefore, these men may be more knowledgeable about how HIV is transmitted and more likely to get tested because of their association with an NGO that serves members of the LGBTHQ community.

Also, there were several significant differences on demographic items between the MSM group and comparison group. In particular, MSM in this study were younger, more likely to be single, of higher social class, and more likely to be employed full-time than the comparison group of non-MSM. This again means that any conclusions drawn from the data about the study hypotheses must take into account the fact that the groups were not completely comparable on demographic items such as education level, employment status, age, relationship status and socioeconomic status. Because of limited resources and issues of confidentiality, this study also could not look at the relationship between experienced stigma surrounding homosexuality and HIV acquisition, which would be more informative in decisions of how to target the spread of HIV in the LGBTQ community. Given the cross-sectional nature of this study, along with the small sample size and non-random sampling, it is also the case that direction of causality cannot be determined. Finally, the sample size limited this study's statistical power.

4.2 Implications for Future Research

Despite the limitations associated with this study, interesting relationships between stigma, HIV testing, and sexual risk behaviors emerged from the data. These results suggest that a larger study with a more intentionally randomly recruited sample of men and transgender people could highlight significant relationships between stigma surrounding homosexuality, HIV testing behaviors, and sexual risk behaviors in Kolkata. In addition, a longer and larger study could allow for investigation of the

relationship of these variables of interest with HIV acquisition, in order to understand more fully underlying drivers of HIV transmission and how to intervene to stem the spread of HIV in this community. These results imply that there may be an important underlying relationship between stigma surrounding homosexuality and both sexual risk behaviors and the use of protective measures against HIV among MSM and transgender people.

When these data were collected, homosexual practices had been decriminalized, so lingering stigma from past bans on homosexuality was of interest. However, in the time since these data were collected, the Supreme Court of India ruled than an 1861 ban criminalizing homosexuality that had been overturned in 2009 was done so unconstitutionally.[21] The Supreme Court's decision in December 2013 that only parliament had the authority to overturn the ban on homosexuality effectively reinstated the ban by refusing to make a constitutional ruling on the colonial-era ban.[21] This upset in the work towards gay rights could have major implications for homosexuality stigma in the future. It is quite likely that if a legal ban on gay sex were enforced, this could greatly increase the experience of stigma surrounding homosexuality among MSM, and in turn could affect HIV testing behavior as well as HIV risk behaviors. However, recent strides have also been made in the campaign for recognition and equal treatment of the LGBTHQ population through recent legislation that recognizes transgender as a legal third gender.[22] The Supreme Court's decision to grant legal recognition to a large group of citizens who identify as transgender could promise to reduce stigma directed at the LGBTHQ population in India. Further studies are warranted to examine these relationships of HIV testing behavior and sexual risk behavior with homosexual stigma given these recent legal rulings.

This study's findings suggest that further research is needed on the relationship of stigma surrounding homosexuality with sexual risk behavior, HIV testing, and the spread of HIV among MSM in Kolkata. Because this study upheld findings from several other studies that MSM engage in more sexually risky behaviors, it is important to conduct further research to stem the spread of HIV. Future studies should include not only the MSM population, but also the total population because some MSM engage in bisexual practices and act as a bridge for HIV into other populations. Based on this study, HIV education among both MSM and non-MSM is warranted, as well as condom education among MSM in order to target sexual risk behavior associated with decreased use of preventive measures against HIV.

Appendix A- Survey Instrument

Thank you for agreeing to take this survey. The survey should take you around 15 minutes to complete. Remember that there is no way to trace your answers back to you.

1. What is your gender?
   a. Male
   b. Female
   c. Other: _____
   d. Prefer not to answer
2. What is your age?
   a. 18-24
   b. 25-34
   c. 35-44
   d. 45-54
   e. 55-64
   f. 65-74
   g. >75
   h. Prefer not to answer
3. In what country were you born?
   a. India
   b. Other (specify): _____
   c. Prefer not to answer
4. Are you from Kolkata?
   a. Yes
   b. No
   c. Prefer not to answer

5. What is your religion?
    a. Hindu
    b. Muslim
    c. Buddhist
    d. Christian
    e. Sikh
    f. Jain
    g. Other (specify): _____
    h. Prefer not to answer
6. What is your current relationship status?
    a. Single
    b. In a relationship
    c. Married
    d. Separated
    e. Divorced
    f. Widowed
    g. Other: _____
    h. Prefer not to answer
7. What is your caste?
    a. Caste: _____
    b. Decline
    c. Prefer not to answer
8. What is your class?
    a. Low class
    b. Lower-middle class
    c. Middle class
    d. Upper-middle class
    e. Upper class
    f. Prefer not to answer

9. What is the highest level of academic education that you have completed?

   a. No formal education

   b. Primary (Up to 5th grade)

   c. Secondary (5-12)

   d. College

   e. University

   f. Postgraduate

   g. Prefer not to answer

10. Are you currently employed?

    a. Yes, full time

    b. Yes, part time

    c. No

    d. Prefer not to answer

11. How much money did you earn or receive in the past 4 weeks? Please include money from all sources.

    a. $ Amount: _____

    b. Prefer not to answer

12. In the past 30 days, where have you been living most of the time?

    a. Street/outdoors

    b. Institution (hospital, nursing home, jail/prison)

    c. Housed: [If housed, check appropriate subcategory:]

        i. Own/rent your own apartment, room, or house

        ii. Someone else's apartment, room or house

        iii. Guest house or hotel

        iv. Other housing (specify) _____

    d. Prefer not to answer

13. With whom do you live?

    a. Alone

    b. With family

    c. With friends

    d. Prefer not to answer

The next questions are designed to find out what you know about the virus,

HIV. Please try to answer them all, and if you don't know an answer, then just select

"Don't know."

14. You can usually tell if someone has HIV by looking at them
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

15. People who have AIDS are dirty
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

16. A person can get HIV even if she or he has sex with another person only one time
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

17. A person can get HIV by sharing a glass of water with someone who has HIV
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

18. Pulling out the penis before a man climaxes keeps the partner from getting HIV during sex
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

19. Showering or washing one's genitals after sex keeps a person from getting HIV
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

20. People who have been infected with HIV, quickly show serious signs of being infected
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

21. A person will NOT get HIV if he or she is taking antibiotics
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

22. Having sex with more than one partner can increase a person's chance of being infected with HIV
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

23. Taking a test for HIV one week after having sex will tell a person if he or she has HIV
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

24. A person can get HIV from oral sex
    a. True
    b. False
    c. Don't know
    d. Prefer not to answer

25. There is a cure for AIDS

    a. True

    b. False

    c. Don't know

    d. Prefer not to answer

26. A person can get HIV from a toilet seat

    a. True

    b. False

    c. Don't know

    d. Prefer not to answer

27. Using a latex condom or rubber can lower a person's chance of getting HIV

    a. True

    b. False

    c. Don't know

    d. Prefer not to answer

28. A person with HIV can look and feel healthy

    a. True

    b. False

    c. Don't know

    d. Prefer not to answer

I would now like to ask you some questions about your confidence to use condoms and about HIV testing. Remember, no one will know what you as an individual answered.

29. How confident do you feel in your ability to put a condom on yourself or your partner?

    a. Not at all confident

    b. Slightly confident

    c. Moderately confident

    d. Very confident

    e. Extremely confident

    f. Prefer not to answer

30. How confident do you feel that you could purchase condoms without feeling embarrassed?

    a. Not at all confident

    b. Slightly confident

    c. Moderately confident

    d. Very confident

    e. Extremely confident

    f. Prefer not to answer

31. How confident do you feel in your ability to discuss condom usage with any partner you may have?

    a. Not at all confident

    b. Slightly confident

    c. Moderately confident

    d. Very confident

    e. Extremely confident

    f. Prefer not to answer

32. How confident do you feel in your ability to suggest using condoms with a new partner?

    a. Not at all confident

    b. Slightly confident

    c. Moderately confident

    d. Very confident

    e. Extremely confident

    f. Prefer not to answer

33. Sometimes it can be hard to suggest using a condom. Which of the following have kept you from suggesting using a condom in the past 6 months (select all that apply)

    a. Fear that my partner would think I have an STD

    b. Fear that my partner would think I think that he/she has an STD

    c. Fear that my partner would think I've had a homosexual experience

    d. Other: _____

    e. None of the above, I feel completely confident suggesting using condoms

    f. Prefer not to answer

34. Sometimes it can be hard to go to the doctor to get tested for HIV. Which of the following have kept you from getting tested for HIV in the past? (select all that apply)

    a. People would see me getting tested

    b. I didn't want to know the results

    c. Didn't know where to go

    d. Fear of being judged by doctor

    e. Fear of how my partner would react

    f. I thought it would be too expensive

    g. I couldn't get to a clinic during open hours

    h. Other:_____

    i. None of the above, I feel completely comfortable going to get tested for HIV

    j. Prefer not to answer

35. How worried are you about getting HIV or AIDS?

    a. Not at all

    b. Slightly

    c. Moderately

    d. Considerably

    e. Extremely

    f. Prefer not to answer

36. How worried are you that you may have already been exposed to the HIV or AIDS virus?

    a. Not at all

    b. Slightly

    c. Moderately

    d. Considerably

    e. Extremely

    f. Prefer not to answer

37. How many times have you had a test for the AIDS virus (HIV)?

    1   2   3   4   5   6   7   8   9   10 or more

    Prefer not to answer

38. When was the last time you were tested for HIV?

    a. I have never been tested

    b. In the past month

    c. In the past 3 months

    d. In the past 6 months

    e. In the past year

    f. In the past 2 years

    g. Prefer not to answer

39. Have you ever tested positive for HIV?

    a. Yes

    b. No

    c. Don't know

    d. Prefer not to answer

40. Do you plan to get an HIV test in the next 30 days?

    a. Yes

    b. No

    c. Don't know

    d. Prefer not to answer

41. Do you plan to get an HIV test in the next 6 months?
    a. Yes
    b. No
    c. Don't know
    d. Prefer not to answer

The next questions are about your romantic and physical relationships.

Remember, there will be no way to trace your answers back to you. Please answer as honestly as you can.

42. How would you describe yourself?
    a. Straight
    b. Gay or Homosexual
    c. Bisexual
    d. Other:_____
    e. Prefer not to answer
43. Have you ever had sex (oral, anal, or vaginal) with a woman?
    a. Yes
    b. No
    c. Prefer not to answer
44. Have you ever had sex (oral or anal) with a man?
    a. Yes
    b. No
    c. Prefer not to answer

45. If you have sex with men, do you describe yourself as:

    a. Kothi

    b. Panthi

    c. Double-decker

    d. Hijra

    e. Don't know

    f. Prefer not to answer

46. With how many men have you had anal sex in the past 6 months?

    a. 0 men

    b. 1 man

    c. 2-3 men

    d. 4-5 men

    e. 6-7 men

    f. 8-9 men

    g. 10 or more men

    h. Prefer not to answer

47. With how many women have you had vaginal or anal sex in the past six months?

    a. 0 women

    b. 1 woman

    c. 2-3 women

    d. 4-5 women

    e. 6-7 women

    f. 8-9 women

    g. 10 or more women

    h. Prefer not to answer

48. In the past six months, how often were you paid money to have sex with someone?

    a. Never

    b. A few times or less

    c. A few times each month

    d. Once or more each week

    e. Prefer not to answer

49. In the past six months, how often did you give money to someone so you could have sex with them?

    a. Never

    b. A few times or less

    c. A few times each month

    d. Once or more each week

    e. Prefer not to answer

50. In the past six months, how often have you had sex with someone you knew (or later found out) had AIDS or was positive for HIV, the AIDS virus?

    a. Never

    b. A few times or less

    c. A few times each month

    d. Once or more each week

    e. Prefer not to answer

51. In the past six months, how often did you use condoms when you had sex?

    a. I have not had sex in the past 6 months

    b. None of the time

    c. Some of the time

    d. Most of the tine

    e. All of the time

    f. Prefer not to answer

52. In the past 6 months, how many of the people you have had sex with were new sex partners with whom you had never had sex before?

    a. 0

    b. 1

    c. 2-3

    d. 4-5

    e. 6-7

    f. 8-9

    g. 10 or more

    h. Prefer not to answer

53. Of the number of different people you had sex with in the past 6 months (not just new partners), how many did you have sex with at least once **without** a condom?

    a. All of them

    b. Most of them

    c. Some of them

    d. None, I always use a condom

    e. Don't know

    f. Prefer not to answer

54. How often have you heard that men who have sex with men are not normal?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

You are nearly finished with this survey. The next questions are about the experiences many men who have sex with men have had. Please share the experiences that have been true for you. If you answered "no" to question 44, meaning that you do not have sex with men, you may skip this section.

55. How often have you felt that the fact that you have sex with men hurt and embarrassed your family?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

56. How often have you been made fun of or called names for having sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

57. How often have you been hit or beaten up for having sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

58. How often have you had to pretend that you do not have sex with men in order to be accepted?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

59. How often has your family not accepted you because you have sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

60. How often have you lost friends because you have sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

61. How often have you been kicked out of school for having sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

62. How often have you lost a place to live for having sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

63. How often have you lost a job or career opportunity for having sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

64. How often have you felt discriminated against by a doctor because you have sex with men?

    a. Never

    b. Once or twice

    c. A few times

    d. Many times

    e. Prefer not to answer

You are now finished with the survey. Thank you very much for participating and helping us understand your experiences.

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