HIV Risk Behavior Among Men Who Have Sex with Men

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Abstract

Background: Sentinel surveillance reported high human immunodeficiency virus positivity rates among men who have sex with men. The current study has described the high-risk behavior and self-reported sexually transmitted infection(s) among self-identified men who have sex with men. Aims: The present study was to find out the extent of high-risk behavior and prevalence of self-reported sexually transmitted diseases among self-identified men who have sex with men, registered with selected nongovernmental organizations in Delhi. Materials and Methods: A facility-based cross-sectional study was done among 250 men who have sex with men during March 2009 to February 2010, through consecutive sampling strategy. Results: Majority (80%) were anal-receptive, received money for sex (61%) and were involved in all types of sexual intercourse with men (oral-86%, manual-97%, and anal-94%). Consistent condom use with male partner was low (46%), most common reason (52%) for not using condom was, that either the condoms were not available or the partner objected. Self-reported sexually transmitted infection(s) was 41% in the past 12 months. Conclusions: This study underscores the increased vulnerability of men who have sex with men of Delhi and need for sustained interventions.

Keywords: Delhi, HIV/AIDS, India, Men who have sex with men, Sexual behavior

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Introduction

Human immunodeficiency virus (HIV) epidemic in India has become diverse in nature; both geographically as well as by population sub-groups affected by HIV. In low and concentrated epidemic situations, HIV is predominantly detected among sub-populations with high-risk behaviors, e.g., female sex workers (FSWs), men who have sex with men (MSM), and injecting drug users (IDU). These population sub-groups were identified as core risk groups by National AIDS Control Organization (NACO), India. The overall HIV prevalence among the different population groups reflected the concentrated nature of the HIV epidemic in India.

Core risk groups were identified as the priority populations to target for implementing surveillance and prevention activities. It was estimated that in the year 2005, there were 2.3 million males in India who had same-sex behavior. The MSMs were present in all the states. As per the latest program data of NACO, homosexual mode accounted for around 1.5% of the total HIV transmission in India. The MSM group is extremely important to focus in the Indian context since more than 50% of MSM were married and had female sexual partners as well. In addition to being vulnerable to HIV infection themselves, they can also act as bridge population between high-risk groups (HRGs) and general female population. The HIV prevalence in 2007, was highest in MSM (7.4%), followed by IDUs (7.2%), and FSWs (5.2%). Whereas, HIV prevalence among IDUs and FSWs has shown either stable or declining trend, there has been an increasing trend among MSM. HIV sentinel surveillance sites among MSM were mostly established recently. However, wherever MSM surveillance sites were established, high rate of HIV prevalence was documented. Delhi, the national capital, is classified as the low HIV prevalence state. The estimated number of MSM in Delhi was 33,624. The HIV positivity rate among MSM during 2007, annual sentinel surveillance, in Delhi was 11.3%.
The high-risk sexual behavior of MSM is one of the underlying causes for HIV transmission, and any existing sexually transmitted infection (STI) could facilitate its acquisition/transfer. Hence the second-generation surveillance system recommends not only surveillance for HIV infection but also that of high-risk behaviors and STIs. Knowledge and behavior studies undertaken at regular intervals could facilitate the national AIDS control program’s efforts at prevention and control of the HIV epidemic. However, there had been no such known effort in the state of Delhi after the sole behavior study undertaken among MSM in Delhi in the year 2005. Therefore, we conducted the present study with the objectives to find out the extent of high-risk behavior and prevalence of self-reported sexually transmitted diseases among self-identified MSM, registered with selected nongovernmental organizations (NGOs) in Delhi. We have also assessed the knowledge related to HIV/AIDS among this group.

**Materials and Methods**

The present study was approved by the Ethics Committee of All India Institute of Medical Sciences (AIIMS), New Delhi, India. Approval to carry out the research was also obtained from the competent authority, that is, the Delhi State AIDS Control Society. Written voluntary informed consent was obtained from each participant. For illiterate (uneducated, cannot read, or both) participants, content of the Participant Information Sheet was read out in the presence of one literate peer or site in-charge. The literate person signed the consent form as a witness to the process. For participants in the age range of 14-17 years, who were not legally eligible to provide consent, assent was sought of the participant, followed by the consent of the care giver (in this case, NGO site in-charge). This was a facility-based cross-sectional survey conducted from March 2009 to February 2010. The MSM visited the organization once in a week. These NGOs were part of the Targeted Interventions (TIs). Their outreach workers, who were from the MSM community, conducted regular outreach at cruising sites of MSMs. This outreach often consisted of workers distributing information, condoms, lubricants, and other items. These outreach workers facilitates them to visit the NGOs where they are registered. The services provided by all the NGOs were similar. The managers of NGO(s) revealed that the attendance of the MSM varied throughout the year because of the various festivals in India. Hence, we collected data for one complete year.

The study was carried in three districts (south, central, and north-west). The site selection was purposive in nature based on the willingness of the site to participate, number of MSM enrolled, and the geographical location. All the sites were geographically far apart and thus considerably minimized the possibility of multiple counting of the same persons at two or more sites. Discussion with the site in-charges had revealed that socio-economic profile of the MSM was likely to be different at selected sites. MSMs in the south district site were probably from relatively higher socio-economic strata. Therefore, we felt that the entire range of MSM, who attended these NGO run TI sites, could be captured in the study.

For surveillance purposes, NACO has defined MSM as: Men who have engaged in sex – anal or oral – with another male at least once in the previous month. All men who self-identified themselves as MSM and registered at the selected TIs site and had been engaged in sex at least once in previous month were eligible for the study. The registered MSMs who were present at the TI site during the visit of the investigator and were willing to give informed written consent were included in the study. Neither participants were not asked about their HIV status nor were any biological specimen for HIV testing and other STIs was collected during the study. All the MSMs, who were contacted for the interview, participated in the study. The sampling strategy was consecutive samplings of those that fulfilled the inclusion criteria and were present at the site on the day of the visit of the investigator. During March 2009 to February 2010, we recruited 250 participants.

As many MSMs were illiterate (uneducated, cannot read, or both) and could not self-complete the questionnaire, we chose face-to-face interview instead of the self-completion approach. The interview schedule was adapted using the Indian Behavior Surveillance Survey (BSS). With the help of the NGO team and peer members, the interview schedule was translated into local Hindi language, which the MSM community could understand. Interview schedule was pretested among MSM at another NGO site that was not part of the study. Final interview schedule was developed following suitable modifications.

The interview schedule explored the following domains: socio-demographic profile of the participants; knowledge about HIV, transmission routes, misconceptions about transmission; sexual behavior; reach of preventive services to the MSM; STIs (knowledge of STI, self-reported symptoms of STI, and preference of service-provider). Data was collected by the first author (VS) who was trained in rapport building and administration of interview schedule. Data collection by single person also minimized the repeated participation.

All practical efforts were implemented to maintain the confidentiality of the study participants. If any participants were reported any medical problems, they were referred to appropriate department and specialty
of AIIMS, New Delhi. After completing the interview, the investigator assessed the misconceptions of the participants and addressed them. The safer sexual practices were also promoted by the investigator and after completing the study proper health education was done for 3 weeks.

**Statistical analysis**

Data were entered in Microsoft Excel 2007 and analyzed using SPSS Statistics for Windows, Version 17.0. (Chicago: SPSS Inc). The data were described in terms of proportion, mean, standard deviation wherever applicable.

**Results**

**Socio-demographic profile**

A total of 250 self-identified MSMs participated in the study [Table 1]. None of the participants who were approached for the interview, refused. The mean age of the participants was 24.6 years, (SD = 5.8 years). Of the participants, 86% were literate and half of them had at least secondary-level school education. Majority (84%) were employed in an occupation, most common (38%) being sung celebratory/congratulatory songs at marriage and births, known locally as the toli/badhaai.

Majority of the participants (69%) were unmarried. Of those married, 21 (27%) reported as being married to men. Of the total participants, 16% were currently married and living with their female partners. The median age at first sexual act with a male was 14 years and with a female was 19 years [Table 1].

**Sex with female partner**

Almost half of the participants (45%) reported to ever have had sex with a female partner [Table 2] and among these, 10 (8.8%) paid money for the sex at some point of time. More than half (56%) of the 114 men who had sex with females had done so in the past 6 months. During the last sexual act with female partners, only half of the men (49%) used condoms. Majority (61%) cited the reason for not using a condom during a last sexual act with their female partners was that they did not feel a condom was necessary, or that they believed a condom was not required while having sex with their wives. Of those (62) who had sexual intercourse in the past 6 months, only one-third of them (35%) had used condom consistently. Among the regular condom users, 43% were not consistent in condom use with the male partner.

**Sex with male partner**

Almost two-thirds (63%) of the participants had their sexual debut with a male aged between 10 and 15 years [Table 3]. The most common (76%) reported first male sexual partner was either a friend or a neighbor, and his mean age was 21 years. Out of the 250 participants, 202 (81%) experienced all the three types (manual, oral, and anal) of sex with a male partner.

**Self-identity**

Almost half (44%) of the participants self-identified themselves as exclusively receptive partners (kothi’s). However, another 36% identified them as predominantly

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**Table 1: Socio-demographic characteristics of study participants**

| Variables                              | No. of participants (%) |
|----------------------------------------|-------------------------|
| Age (years) (N=250)                    | 24.6 (range 14-44)      |
| Education level (N=250)                |                         |
| Illiterate (uneducated, cannot read, or both) | 35 (14.0)              |
| Primary                                | 32 (12.8)               |
| Middle                                 | 57 (22.8)               |
| Secondary                              | 53 (21.2)               |
| Higher secondary                       | 45 (18.0)               |
| Graduate                               | 28 (11.2)               |
| Current occupation (N=250)             |                         |
| Unemployed                             | 18 (7.2)                |
| Student                                | 22 (8.8)                |
| Laborer/unskilled laborer              | 48 (19.2)               |
| Petty business                         | 36 (14.4)               |
| Toli badhaai*                          | 88 (35.2)               |
| Service (private/govt.)                | 38 (15.2)               |
| Marital status (N=250)                 |                         |
| Unmarried                              | 173 (69.2)              |
| Married                                | 77 (30.8)               |

* singing celebratory/congratulatory songs at marriage and births, known locally as the toli/badhaai

**Table 2: Distribution of participants by the sexual behavior with female sex partner**

| Sexual behavior with female sex partner | No. of participants (%) |
|----------------------------------------|-------------------------|
| Ever had sex with female partner (N=250)| 114 (45.2)              |
| Age group at first sex with female (N=114)|                         |
| 10-15 years                            | 14 (12.3)               |
| 16-20 years                            | 61 (53.5)               |
| 21-25 years                            | 31 (27.2)               |
| 26-30 years                            | 8 (7.0)                 |
| Ever paid money for having sex with female (N=114)| 10 (8.8)              |
| Had sexual intercourse in the past 6 months (N=114)| 64 (56.1)              |
| Used condom during last time sex (N=114)| 56 (49.0)               |
kothi’s, although they sometimes acted as penetrative partners as well. Thus, effectively, among the study participants, majority (80%) were practicing receptive sex. Only a minority (8.4%) identified themselves as an exclusively penetrative partner (giriya or panthi).

Almost two-third (60%) of the MSM in our study reported exchange of sex with a male for money. However, none of the participants reported commercial sex as an occupation. The proportion of self-identified MSM who reportedly paid for sex was less than 1%.

### Condom use with male sex partner

More than one-fourth of the participants (28%) did not use a condom during the last time they had anal intercourse with their male partners [Table 4]. Most commonly cited reason (52%) was that either the condoms were not available or the partner objected. Other reasons were that they did not think condom was necessary or the place was inappropriate. Consistent condom use while having anal intercourse with male partner in the past 6 months was reported by less than half (46%) of the participants. Among the nonregular condom user, 17% were also not using condom with the female partner. Among the self-identity groups, inconsistencies in condom use was almost similar in Kothi (57.5%), double-decker (penetrative) 56.6%, double-decker (receptive) 58.5%, however, only one-third (34.7%) of the Giriya (exclusively penetrative) were inconsistent.

### Knowledge and misconceptions

Almost all the participants heard about HIV and AIDS. Most of the participants had correct knowledge of the modes of transmission. However, substantial misconceptions about modes of transmission still existed such as, HIV being transmitted by public toilets (22%), utensils of infected persons (18%), and through mosquito bites (18%) [Table 5]. Consistent condom use was reported by 91% of participants as a mode

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**Table 3: Distribution of participants by the sexual behavior with male sex partner**

| Sexual behavior with male sex partner | No. of participants (%) |
|--------------------------------------|-------------------------|
| Age at first sex with male (N=250)    |                         |
| <10 years                            | 19 (7.6)                |
| 10–15 years                          | 157 (62.8)              |
| 16–20 years                          | 58 (23.2)               |
| 21–25 years                          | 12 (4.8)                |
| >25 years                            | 4 (1.6)                 |
| Type of first partner (N=250)        |                         |
| Friend                               | 142 (56.8)              |
| Neighbor                             | 48 (19.2)               |
| Relative                             | 26 (10.4)               |
| Others (unknown, teacher)            | 23 (9.2)                |
| Coworker                             | 6 (2.4)                 |
| Commercial partner                   | 5 (2.0)                 |
| Self identification of participants (N=250) |                 |
| Receptive (Kothi)                    | 110 (44.0)              |
| Both (predominant receptive)         | 91 (36.4)               |
| Both (predominant penetrative)       | 28 (11.2)               |
| Penetrative (Giriya)                 | 21 (8.4)                |
| Type of sex had in previous month with male partners (N=250) |                 |
| Oral sex (N=250)                     | 216 (86.4)              |
| Manual sex (N=250)                   | 243 (97.2)              |
| Anal intercourse (N=250)             | 234 (93.6)              |
| Exchange of money for sex in previous month (N=250) |                  |
| Received money for sex               | 152 (60.8)              |
| Paid money for sex                   | 96 (38.4)               |
| Never received/paid money for sex    | 2 (0.8)                 |

**Table 4: Condom use during sex with male partner**

| Variable                                      | No. of participants (%) |
|-----------------------------------------------|-------------------------|
| Condom use during the last time anal intercourse with male partner (N=250) | 179 (72.0) |
| Regular condom use in previous month 115 (46.0) |                         |
| Who suggested to use condom (N=179)            |                         |
| Self                                          | 117 (65.3)              |
| Joint decision                                | 49 (27.3)               |
| Male partner                                  | 13 (7.3)                |
| Reason for not using condom (N=71)             |                         |
| Not available                                 | 21 (29.6)               |
| Partner objected                              | 16 (22.5)               |
| Did not think that condom is necessary         | 13 (18.3)               |
| Place was inappropriate and we were in hurry   | 10 (14.0)               |
| Do not like the condom                        | 7 (9.8)                 |
| Have not heard of condom                      | 4 (5.6)                 |
| Where the condom was procured from (N=179)     |                         |
| NGO                                           | 113 (63.2)              |
| Chemist shop (pharmacy)                      | 40 (22.3)               |
| Hospital                                      | 9 (5.0)                 |
| Person with whom had sex                      | 9 (5.0)                 |
| Friend                                        | 4 (2.2)                 |
| Grocery shop                                  | 4 (2.2)                 |
of prevention from getting HIV infected. Knowledge about availability of free government services for HIV testing and treatment were quite high. Majority (90%) had correct knowledge that a healthy-looking person could be infected with HIV. Only about 40% of the respondents were aware that sex with only one HIV uninfected faithful partner was an important self-protection measure. Similarly, 41.2% of the participants were not aware that use of only sterilized needles and syringes were protective of HIV infection.

**Sexually transmitted infections**

Out of the 250 participants, 103 (41%) reported having had one or more symptoms suggestive of STI in the past 12 months. The symptoms included greenish/yellowish discharge from the penis (14%), blister or ulcer on or around penis or in the anal area (27%) and burning sensation during passage of urine (28%). Majority of them (95.1%) reportedly sought allopathic treatment for the STI symptom. One-fourth of them (26%) reported that they would discuss their problems with the peer educators and after that, treatment would be sought accordingly [Table 6]. Nearly 12%, 24%, and 25% of MSM, who had symptoms of greenish or yellowish discharge from penis, blister or ulcer on penis or anal area, burning micturition, respectively, were not consistent in using condom with male.

**HIV tests**

Majority (98%) had knowledge of the place where to receive a confidential HIV testing, if required. More than three-fourths (77%) of the participants had ever got tested for HIV. Among those who were tested for HIV, 94% had received the result. Those who did not receive their report were not willing to know the HIV status.
Discussion

HIV epidemic among MSM is gradually being recognized in India. The MSM comprised one of the three core risk groups that drove the HIV epidemic in India. However, unlike FSW and IDU, they were one of the least understood and studied groups. It was probably due to their invisibility as a group and also since a large proportion of them blended within the general population.[7, 8]

Our study had participants from three of the nine districts of Delhi. Although, all three organizations were situated in three different geographical locations, these MSM were not representative of all the MSM of Delhi. However, we had a representative sample of only those MSM who voluntarily visited these organizations for the promotive and preventive health services and social gathering. The MSMs who were accessible to HIV prevention program can report lower-risk behavior and fewer misconceptions as compared with those who were not part of such program. Besides, the MSMs who were visiting these MSM specific sites might have had higher-risk perception, or they were more confident about their sexual orientation, that is, they were not hesitated being a homosexual, as compared with the hidden MSMs, or they might have a symptom of STIs and visited the NGOs for the treatment. Therefore, the risk-taking behavior and other socio-demographic profile of the nonparticipating MSM may be different than our study participants. As the sero-status of the study participants was not known, there must be difference in their behavior and level of knowledge about HIV. Hence, the finding from the study cannot be generalized to general Delhi MSM population. The last available data for MSM of Delhi pertained to 2005.[9] Considering the paucity of studies in this area, this study could prove to be a valuable contribution. Our findings could form baseline information for any future similar study done among MSM of Delhi.

Majority of the participants were unmarried, and yet almost half of them reported having ever had sex with a female. This pattern was consistent with another study from India.[9] The female partners of the MSM were at risk since just one-third of the participants reported using condoms consistently with them. Similar evidence had been reported by other studies in India, which found that significant proportion of self-identified MSM reported sexual relationship with female and at the same time reported inconsistent use of condom.[10, 11] The finding reconfirmed the widely held belief of the dual role of MSM; both as a core risk population as well as bridge population.

None of the participants in our study reported commercial sex as their occupation. However, we found that more than half of them had reported receiving money for sex. The apparent discrepancy could be due to their unwillingness to identify themselves as a sex-worker. Sex work per se would further increase the risk of acquisition of HIV infection. Among the HIV-negative men in our study, the risk of HIV acquisition in the absence of consistent condom could have been further enhanced if they were among those men reporting STI symptoms such as blisters or ulcers in the genital region or something to that effect. Counselors and peer educators may wish to spend additional time with this sub-population of MSM to provide behavior change communication and explain risk-minimization strategies.

Classification of MSM into preset identities of kothi, panthi, double-decker, and bisexual is difficult. This was also highlighted in our study, where, although 44% self-identified themselves as exclusively kothi (receptive), another 36% who identified themselves as double-decker had predominant kothi behavior. Similar difficulties in classification have been reported by other studies.[12]

In our study, majority of the participants heard about HIV; they had correct knowledge of the modes of transmission, barring a few misconceptions. Higher level of awareness and knowledge was possibly a reflection of the effectiveness of the intervention program of the NGO where the participants were enrolled. There was no significant difference in the knowledge level of the study participants across the different study sites.

The risk perceptions of the participants were high (47%) and a large proportion of them had undergone HIV testing as well as received test results. It is higher than the previous studies (6.4%) among general young population. More exposure to promotional activities may be a possible explanation for this difference.[13] Mackellar et al. found that young MSM who perceived themselves at moderate or high risk for acquiring HIV in their lifetime were more likely to report sexual and drug-use behaviors that might have led to HIV exposure. Ten percent of our study participants ever used intoxicating drugs (intravenous drugs and other locally available drugs). However, 72% of those that used intoxicating drugs actually perceived themselves to be at high or moderate risk of getting HIV infection. Our findings were thus in conformity with the findings of Mackellar et al.[14] Mere possession of correct knowledge, however, does not seem to be enough, since the level of reported knowledge did not translate into corresponding behavior. It is well appreciated that improvement of awareness and knowledge is easier and a precondition for HIV prevention. However, the greater challenge is to translate this knowledge into change in behavior and thus actual
practice. This challenge required the continued search for locally relevant and effective strategies. The present study was conducted in three NGOs from different parts of Delhi (central, north–west, and south); it could be assumed as the representation of those MSM who were availing the facilities from such a NGO in Delhi. Hence the geographical distribution of the three sites was an additional advantage. The nonresponse rate in the present study was zero, as every participant who was approached agreed to participate in the study. Therefore, the possibility of self-exclusion of those MSM who had been differential risk-taking behavior was minimized. As all MSM had been registered at different point of time, the possibilities of differential knowledge and risk-taking behavior could not be ruled out. The present study used similar set of the questionnaire as in the Behavioral Surveillance Survey 2006. The results from the study thus could be used for understanding the time trend of high-risk behavior among MSMs from Delhi. Time trend assessment could help us in evaluating the TI for the MSMs. The interviews were conducted by a single investigator and therefore, inter observer variation was eliminated.

Face-to-face interview for stigmatized behavior could lead to social desirability bias. Therefore, it was possible that condom use might have been over reported as it was perceived to be a desirable behavior. Paid sex and receptive anal intercourse might have been under reported due to perceived less desirable behavior. We reported such apparent discrepancy in the study participant’s unwillingness to identify themselves as a commercial sex-worker although more than half of them reported receiving money for sex.

Prevalence of STI was based on reported symptoms suggestive of STI. Due to the constraints of resources, we did not attempt physical examination or laboratory-based diagnosis of STI. In the current study, 41.2% of MSM had one or more than one symptoms of STI. Bourne et al. reported that 20% of males had STI. The differential sexual behavior of MSM as compared with the general population may be a possible explanation. Only 1.5% of HIV transmissions occur through MSM behavior. This could be an underestimate due to stigma associated with homosexuality in India. In fact, MSM are more vulnerable to HIV acquisition due to (a) the higher prevalence in their partner pool (i.e., greater likelihood of encountering a partner with HIV) and (b) greater risk associated with anal intercourse versus vaginal intercourse (assuming vaginal sex is the heterosexual norm in India).

Hence, we conclude that low consistent condom use with male partners, receiving money for sex with men, and high proportion of men in current active sexual relationship with female partner/spouse among MSM in Delhi suggest the need for continued and possibly intensified intervention for MSM in Delhi. The present study has identified Toli badhaai as an important occupation among the MSM, so we need to put efforts on community-based organizations.

A significant proportion of the MSMs experienced one or more episode of STI in the past 1 year and were acting as a potential source of spread of infections to their partner. Since the study participants were from the NGOs where TI was being implemented, majority reported having sought a treatment within a week of onset. The intervention should thus intensify their focus on prevention of new episodes of STIs, through intensive counseling on safe sex practices and increased accessibility and availability of condoms. A robust monitoring system at these TI sites would ensure that all enrolled participants have been regularly screened for STIs and have been provided with condoms and preventive messages, including appreciation of risk perception.

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