

Original Research Article

Unsafe sexual behavior of currently married men having sex with men in Thane, Maharashtra: a challenge for ensuring ZERO HIV transmission

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ABSTRACT

Background: Men having sex with men (MSM) in India due to social taboo and pressure, get married to women, and there is limited evidence on HIV-associated risk behaviors among MSM currently married (CM) to a female partner. The aims of the study was to analyse and understand HIV associated risk behaviors among MSM currently married to a female partner in Thane, Maharashtra.

Methods: MSM accessing HIV prevention interventions through Targeted Interventions (TIs) in Thane, was approached through a cross-sectional study design. 67 CM-MSM and 57 never married (NM) MSM compared to understand the HIV associated risk behaviors. Engagement in vaginal intercourse, presently living with regular female partner and current marital status used as the screening variables. Statistical analysis used as descriptive, bi-variate and multi-variate analysis performed.

Results: Mean age of the CM and NM-MSM together (N=124) is 30 years, with 31% as panthi self-identity, 28% double-decker and 18% bisexual. Unsafe anal sex with paid male/hijra, regular non-paying male and occasional non-paying male/hijra is significantly high among CM-MSM than NM-MSM.

Conclusions: Targeted interventions (TIs) in Thane should ensure safe sex practices across all types of partners, especially among MSM married to women, and facilitating a conducive environment for MSM to decide their marital life.

Keywords: Married MSM, Bisexual MSM, Female partners, HIV, Thane

INTRODUCTION

India is one of the few countries, with the national HIV/AIDS control program evolving as per the changing contexts and emerging evidences. HIV sentinel surveillance (HSS) in India indicates declining HIV prevalence among antenatal clinic attendees (ANC; 0.80 in 2003 to 0.29 in 2015), female sex workers (FSWs; 10.33% in 2003 to 2.2% in 2015), men who have sex with men (MSM; 8.47% in 2003 to 4.2% in 2015) and

injecting drug users (IDUs; 13.15 in 2003 to 9.9 in 2015).¹⁻³ While some reports indicate about the rising epidemic in certain geographical regions, both in general population and HRGs measured through the proxy indicators; ANC attendees for general population and walk-in clients at integrated counselling and testing centers (ICTCs) for HRGs. For instance, a study conducted in tertiary care hospital in Delhi reported 42% (N=3529) of HIV sero-reactive pregnant women amongst 20-24 years age group.⁵ HIV Sentinel Surveillance

among antenatal clinic (ANC) attendees, has reported increasing prevalence in some states during 2003 to 2014-15, such as Assam 0.00% to 0.18%, Bihar 0.11% to 0.37%, Delhi 0.13% to 0.25%, Gujarat 0.38% to 0.56%, Jharkand 0.08% to 0.18%, Punjab 0.13% to 0.32%, Rajasthan 0.15% to 0.32%, Tripura 0% to 0.19% and Uttarakhand 0.06% to 0.12%.¹ In addition, it also been reported that the drivers of the HIV epidemic in India, have been varying by different geographical locations.⁶

The reasons for these emerging epidemics explored through data triangulation at district level. HIV program in India, is self-examining, whether the HIV prevention interventions in the country are missing out any relevant population to be covered. For instance, female sexual partners (especially marital partners) of IDUs has not reached by national HIV program until 2014. However, based on available evidence on the importance of reaching out to the female partners of married IDUs the national program revised the national costing guideline for targeted interventions (TIs) to introduce 'female outreach component' as part of overall IDU interventions.⁷⁻⁹

Similarly, the importance of reaching out to the spouses of married MSM with HIV prevention interventions is being discussed and debated at different levels.^{10,11} There were very limited studies outside India indicating the vulnerability for HIV of female sex partners of bisexual HIV infected MSM, who were not aware of their partner's bisexual behaviour.^{12,13} In India, although the HIV prevalence among MSM is declining, there have been regions showing mixed trends of HIV prevalence among this community.⁶ A paper published based on HSS data, has reported that HIV prevalence among bi-sexual MSM is 5.3%, but there is no published literature in India, to show the status of HIV transmission between the bisexual MSM and their female sex partners or the HIV concordant and discordant status of bisexual MSM and their female sex partners.¹⁴ There is also limited evidence to show the HIV associated vulnerability of female sex partners of bisexual MSM.

This paper contributes to the evidence related to the STI/HIV associated risk behaviors of currently married (CM) MSM, who were in current marital relationship with female partners. It compares the HIV associated high-risk behavior of currently married MSM (CM-MSM), with Never Married (NM)-MSM and indicates the STI/HIV vulnerability of the female partners of CM-MSM.

METHODS

Study design and participants

A cross-sectional behavioral tracking survey (BTS) conducted in Thane among the self-identified MSM in 2015. These MSM registered in the two targeted

interventions (TIs)- an HIV prevention program, in Thane district of Maharashtra.

Sampling procedures

57 hotspots identified by the two ongoing TIs among MSM and out of these 57 hotspots, based on time-location cluster (TLC) sampling, 45 hotspots selected for the study.¹⁵ The study team decided to select 10-consented self-identified MSM from each hotspot to attain 450 study participants.

Inclusion/exclusion criteria

Men reporting same-sex behaviour during the last six months of the study, self-identifies as MSM, >18 years and able to provide written consent for participating in the study were the eligibility criteria for study participants. Individuals not residing in the study district during the last six months of the study, were not considered part of the study.

Formation of study (CM-MSM) and comparison (NM-MSM) groups (Figure 1)

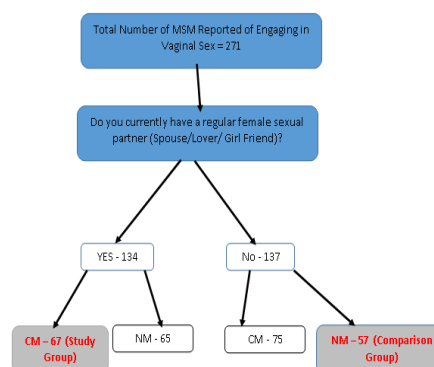


Figure 1: Formation of study group.

Out of this 450 MSM participated in the behavioral study, 271 reported of engaging in vaginal intercourse. Further among those 271, using a categorical variable "Do you currently have a regular female sexual partner (spouse/lover/girl-friend) – Yes and No?" two groups has been identified; MSM who reported of having a regular female partner (134) and MSM those who have reported that they do not have a regular female partner (137). Among 134 MSM reported of having a regular female partner, 67 are currently married, while 65 were never married. Similarly, among 137 MSM not presently having any regular female partners, 75 reported to be currently married, while 57 were never married. Hence, 67 currently married MSM of those who have reported of having regular female partner has been selected as the study group; the currently married MSM, and dropped the remaining 65 MSM from analysis, assuming they would have reported their girlfriends and/or lovers as part

of current regular female partners. Similarly, 57 Never Married (NM)-MSM of those 137 MSM, reporting of not having any regular female partners presently as the comparison group.

Outcome measures

Broadly, the outcome measures classified into self-reported behavioral and biological indicators. The self-reported behavioral indicators were sexual behaviors such as anal penetrative, anal receptive, oral sex, manual sex (masturbation), and condom usage with various types of partners including, regular non-paying male partner, regular non-paying hijra, occasional non-paying male/hijra, paying male/hijra and paid male/hijra partners and the HIV testing behavior. The self-reported biological indicators are genital sore/ulcer, anal ulcer/sore, rectal discharge, urethral discharge, swelling in the groin, genital warts, and anal warts.

Explanatory variables

The explanatory variables includes, (a) age (less than and greater than 25 years), (b) age at first sexual intercourse (less than and greater than 20 years), (c) mean age at first sexual intercourse with male/hijra, and (d) mean age at first vaginal intercourse. Further, education (illiterate, primary, secondary, higher secondary and above), marital status (married and unmarried), primary self-identity (kothi, panthi, double-decker and bisexual), first female sex partner (marital partner/wife, girlfriend, friend/relative, female sex worker and live-in partner) and alcohol consumption (yes and no) are also considered.

Data analysis

Data manually entered in CPro 6.1 software and crosschecked for duplications, if any. Descriptive statistics of key characteristic features of the study participants, including, age of the study participants, age at first sex, age at first vaginal sex, education, the first

female sex partner, current status on having a female sex partner and condom usage in the last one year were calculated using STATA 13. To understand the association between marital status and aforementioned variables multivariate logistic regression analysis along with z-test, conducted among study and comparative groups. Odds Ratio was calculated for CM-MSM and NM-MSM on their engagement in anal sex with their paid and non-paying partners.

Ethical considerations and informed consent

Participants provided written consent for their participation. Manipal University Ethics' Committee approved the study protocol and the tools (MUEC/12/2015 on August 08, 2015).

RESULTS

Sixty-seven (50%, 134) currently married MSM and 57 never married (42%, 137) MSM (Figure 2) are the primary focus of this article, as study and comparison groups respectively. The Study group (N=67) are the MSM those had vaginal intercourse, living with spouse/girlfriend/lover and currently married, while the comparison group (N=57) are those MSM engaged in vaginal intercourse but not living with spouse/girlfriend/lover and never married.

Table 1 presents the key characteristic features of the study participants, with age, education, self-identity, first female sex partners and alcohol consumption among the study group [CM-MSM] and the comparison group [NM-MSM].

Age of the study participants

The mean age of the study participants (N=124) was 30 years (S.D- 7.4), while the mean age of the CM-MSM (N=67) is higher (34 years) than the mean age of NM-MSM (26 years; N=57).

Table 1: Key characteristic features of the study participants.

	Total N=124 (%)	NM-MSM (57) (%)	CM-MSM (67) (%)	P value
Characteristics				
Mean age (S.D) of the study participants	30.0 (7.4)	25.5 (5.0)	33.8 (7.0)	0.000
Percentage of study participants <25 years	21.8	45.6	1.49	0.000
Percentage of study participants ≥25 years	78.2	54.4	98.5	
Mean age (S.D) of the study participants' first sexual intercourse	16.2 (3.5)	15.4 (3.3)	16.9 (3.6)	0.008
Percentage of study participants first sexual intercourse <20	84.7	91.2	79.1	0.062
Percentage of study participants' first sexual intercourse ≥20 years	15.3	8.8	20.9	
Mean age (S.D) of study participants' first sexual intercourse with male/hijra	17.8 (4.5)	16.6 (3.2)	18.8 (5.1)	0.007
Mean age (S.D) of study participants' first vaginal intercourse	18.6 (4.5)	16.6 (4.0)	20.3 (4.2)	0.000
Education of respondent (%)				
Primary and below	12.0	10.9	12.9	0.801
Secondary	14.5	12.7	16.1	
Upper-secondary & more	73.5	76.4	71.0	

Continued.

	Total N=124 (%)	NM-MSM (57) (%)	CM-MSM (67) (%)	P value
Primarily self-identify (%)				
Kothi (receive during anal sex)	33.1	45.6	22.4	0.045
Panthi (insert during anal sex)	25.0	17.5	31.3	
Double decker	25.8	22.8	28.4	
Bisexual	16.1	14.0	17.9	
Alcohol practice (%)				
Alcohol consumed in last 12 months	43.6	31.6	53.7	0.013
Alcohol consumed during last sexual encounter with partner/client	70.4	66.7	72.2	0.673

Note: NM-MSM: Never married men who have sex with men; CM-MSM: Currently married men who have sex with men.

Table 2: Type of partners and sexual behaviors among CM-MSM and NM-MSM.

Type of partners and sexual behaviors	NM-MSM (57)	CM-MSM (67)	P value
Regular non-paying male partner			
Anal receptive	70.2	59.7	0.224
Anal penetrative	40.4	59.7	0.032
Oral sex	71.9	71.6	0.972
Manual sex (mutual masturbation)	70.2	61.2	0.295
Last sex with condom	100.0	98.2	
Regular non-paying hijra			
Anal receptive	10.5	7.5	0.55
Anal penetrative	10.5	19.4	0.171
Oral sex	15.8	17.9	0.754
Manual sex (mutual masturbation)	14.0	17.9	0.559
Last sex with condom	100.0	100.0	
Occasional non-paying male/hijra			
Anal receptive	47.4	32.8	0.099
Anal penetrative	36.8	53.7	0.06
Oral sex	52.6	55.2	0.773
Manual sex (mutual masturbation)	50.9	47.8	0.729
Last sex with condom	100.0	97.5	
Paying male/hijra partner			
Anal receptive	31.6	26.9	0.564
Anal penetrative	14.0	17.9	0.559
Oral sex	31.6	23.9	0.338
Manual sex (mutual masturbation)	26.3	17.9	0.258
Last sex with condom	100.0	100.0	
Paid male/hijra			
Anal receptive	3.5	7.5	0.342
Anal penetrative	1.8	9.0	0.083
Oral sex	5.3	10.5	0.340
Manual sex (mutual masturbation)	5.3	10.5	0.340
Last sex with condom	100.0	88.9	
Last time sexual intercourse with condom with regular female partner	NA	47.8	
Last 12 months frequency of using condom during sex with regular female partner			
Every time	NA	20.9	
Most of the time/sometime	NA	34.3	
Never	NA	44.8	

Note: NM-MSM: Never married men who have sex with men; CM-MSM: Currently married men who have sex with men; NA-Not applicable.

Key incidents and age of the study participants

The mean age of the study participants' first sexual intercourse was 16 years (S.D-3.5), whereas the mean age at first sexual activity with a male/hijra was 18 years (S.D-4.5), and the mean age at first vaginal intercourse is 19 years (S.D-4.5). The NM group, which is observed to be representing younger generation (mean age-26 years), reported to be engaging in sexual activity much early than the CM-MSM group (mean age-34 years).

Education status of study participants

More than 70% of MSM in both categories have completed higher secondary education and more. It is evident from this sample; there was no illiterates in the study and comparative groups.

Self-identity of the study participants

Marital status and self-identity is observed to be statistically significant ($p=0.04$). 18% reporting bisexual identity (having sex with both male and females), 31% panthi (acting as a insertive partner in MSM relationship)

and 28% double decker (take insertive and receptive role in MSM relationship) among CM-MSM, while NM-MSM identify themselves predominantly as kothi (46%), followed by double-decker.

Alcohol use among study participants

Significant higher percentage (54%) of CM-MSM reported consumption of alcohol in the last 12 months, while an even higher percentage (>72%) reported alcohol consumption during their last sexual encounter.

Table 2 shows the type of sex partners, sexual behaviors and condom usage status among the study participants. It was observed that a higher percentage of CM-MSM reported to be engaging in anal penetrative sex across three different types of partners, including, regular non-paying male partner (60%, $p=0.03$), occasional non-paying male/hijra partner (54%, $p=0.06$) and paid male/hijra partner (9%, $p=0.08$). Among the CM-MSM, almost 52% of them have not used condom during their last sexual encounter with regular female sexual partner, while 21% of CM-MSM reported consistent condom usage in the last 12 months.

Table 3: Percentage on self-reported STI symptoms during last episode and HIV testing behavior among CM-MSM and NM-MSM.

Self reported STI clinical symptoms	NM-MSM (57)	CM-MSM (67)	P value
Genital sore/ulcer			
Ever	3.5	16.4	0.019
Never	96.5	83.6	
Anal ulcer/sore			
Ever	10.5	10.4	0.989
Never	89.5	89.6	
Rectal discharge			
Ever	3.5	1.5	0.466
Never	96.5	98.5	
Urethral discharge			
Ever	12.3	10.4	0.748
Never	87.7	89.6	
Swelling in groin/s			
Ever	8.8	17.9	0.140
Never	91.2	82.1	
Genital warts			
Ever	22.8	16.4	0.369
Never	77.2	83.6	
Anal warts			
Ever	19.3	7.5	0.050
Never	80.7	92.5	
HIV testing behavior			
Have not at all taken HIV test in life time	5.3	6.0	0.865
Have taken HIV test at least once in life time	94.7	94.0	
Have taken HIV test within last one year	96.3	93.7	0.518
Have taken HIV test prior to the last one year	3.7	6.4	

Table 3 presents the self-reported status of various key STI symptoms by the study participants and the HIV testing behavior. Significant percentage of CM-MSM were found to report genital sore/ulcer (16.4%, $p=0.01$), while anal warts were reported in 8% CM-MSM, less than NM-MSM (19%, $p=0.05$). HIV testing behavior among the study participants did not have any significant difference.

Table 4: HIV associated high risk behaviors of CM-MSM with reference to NM-MSM in Thane, Maharashtra.

HIV associated Risk Behavior	Odds Ratio (95% CI)
Anal sex with non-paying male	1.49 (0.42-5.28)
Anal sex with occasional non-paying male/hijra	1.57 (0.62-4.01)
Anal sex with paid male/hijra	2.29 (0.47-11.20)
Anal sex with either of the non-paying partners	0.65 (0.03-16.47)

Note: (Controlled variables in logistic regression- age of respondent, education age of first intercourse, first sexual intercourse with male/hijra and first female sex partner).

Table 4 presents the likelihood of anal sex behavior with different types of partners among CM-MSM. Findings from multivariate logistic regression indicate that CM-MSM have a higher likelihood of engaging in anal sex with non-paying male (OR-1.49; CI-0.42-5.28), occasional non-paying male/hijra (OR-1.57; CI-0.62-4.01) and paid male/hijra (OR-2.29; CI-0.47-11.20). Although the findings were not statistically significant, a pattern observed regarding the sexual behavior of the CM-MSM. CM-MSM are less likely (OR-0.65, CI-0.03-16.47) to engage in anal sex with either of their non-paying sex partners in comparison to the NM-MSM. While the Fisher's exact test indicated that the relative risk of CM-MSM engaging in anal sex with paid male/hijra was 2.58 times higher than NM-MSM.

DISCUSSION

Behavior versus identity

Literature on MSM in India states, that sexual identities may or may not correlate with sexual behavior and/or practices, because, they are very much fluid in Indian context. For instance, kothi identified MSM, takes a penetrative role in sex if they found another attractive kothi. In addition, most of the kothi and broadly all MSM get in to marital relationship with females and engage in sexual relationships for varied reasons. Similarly, Panthi and Double-decker are the labels provided by kothi, which need not always reflect the behaviors of those MSM.¹⁵ In addition, studies have revealed the discordancy observed between the sexual identity and behavior, in different contexts, depending upon the benefits, needs and understanding of the concepts.¹⁶ In line with the above-cited literatures, the present study has

observed 67 CM-MSM, reporting their bisexual behavior, contrasting to only 18% identify themselves as bisexual. Hence, it is important the national HIV program in India, should not limit its prevention service to kothi and double-deckers, as per either their self-identity and/or their role as recipient in anal sex, instead entire sub-typology of MSM to be considered, based on their STIs/HIV associated high risk behavior.¹⁷

Bisexuals as bridge with STIs/HIV-associated high-risk behavior

The study was able to demonstrate the significant association between HIV-associated high-risk behaviors, including anal sex with various types of sex partners, inconsistent condom use and higher exposure to genital ulcers/sores among CM-MSM than NM-MSM. In particular, the anal penetrative behavior was found to be significantly (2.29, 0.47-11.20) associated among CM-MSM with different types of male and hijra partners, in comparison to the NM-MSM, while the other study which was done among MSM having sex with any women, could not find any significance difference with MSM having sex only with men.¹⁴ Hence, the present study was able to indicate the vulnerability status of HIV transmission between the bisexual CM-MSM and their heterosexual female partner within marital relationship.

Prevalence of self-reported STI syndromes

The prevalence of genital sore/ulcer and anal warts between the CM-MSM and NM-MSM shows the trend of manifestations that could be predominantly due to viral infections (Human papilloma virus-HPV, herpes simplex virus-HSV) or else by syphilis. As expected, genital sore/ulcer is significantly high (16.4% > 3.5%, $p=0.01$) among CM-MSM than NM-MSM, while anal warts reported to be low (7.5% < 19.3%, $p=0.05$) among CM-MSM than NM-MSM; as the CM practice more of penetrative sex. The causative organisms for genital sores/ulcers, is syphilis and HSV-2 while anal warts by HPV type 2. However, the present study did not conduct any laboratory tests to confirm the respective biological indicators of the self-reported STI syndromes. The literatures have quoted the high frequency of anal sex and engagement in sex at an early age is associated with anal warts.¹⁸ In addition, the high genital ulcers/sores among CM-MSM could be indicating the reinfection of bacterial STI, such as syphilis, that could happen in this group due to either their female and/or male sexual partner not treated as part of partner treatment, but adequate information is not available from this study to prove or disprove the aspect. This could inform the need for establishing and strengthening the prevention strategy among female spouses of CM-MSM.

Prevalence of HIV between MSM having sex only with men and MSM having sex with men and women

The current study has not documented the prevalence of HIV among bisexual CM-MSM, but other studies, have

reported 5.3% and 13% of HIV prevalence among MSM engaging in sex with women.^{11,14} Nevertheless, both the studies could not find any significant difference in the HIV prevalence between the MSM having sex with only men and MSM having sex with men and women. The participants for the present study belong to Thane district of Maharashtra, while interestingly both of the previous studies also have representation of participants from Maharashtra.^{11,14} Considering the high-risk behavior among CM-MSM reported in the present study, in the context of HIV prevalence reported in the earlier studies, there is a need to understand the impact of these high-risk behaviors among MSM, including CM-MSM and their male and female sexual partners in Thane, Maharashtra.

Promotion of safe-sex behavior with bisexual CM-MSM

Considering the high-risk behavior of the bisexual CM-MSM, the study findings suggests that the HIV prevention interventions should consider providing counseling to the CM-MSM. This counseling sessions should focus on (i) reducing the number of casual and commercial sexual encounters, (ii) practicing safer sex (use condom consistently) within and outside marital relationship, (iii) reducing the high risk behaviors such as anal sex with male/hijra partners, and (iv) ensuring periodical STI screening and treatment.

Strategies to reach female partners of MSM in India

Strategies for reaching the female partners of MSM as part of an HIV prevention intervention in India, and through other implementation modes have been discussed.¹⁰ Hence, considering the high-risk behavior of bisexual CM-MSM, the societal taboo on revealing their bisexual status, legal impediments, and HIV program among MSM in India needs to be more dynamic and inclusive in nature. This would help India to sustain the decreasing HIV prevalence among MSM nationally and to address the regional variations in HIV epidemic between MSM and its possible impact on general population.

CONCLUSION

In India, the MSM behavior socially and culturally is not acceptable and in addition being part of the institution of marriage indicates as an accomplishment/fulfillment of both man and women-hood.¹⁹ Hence, many men, including the bisexual MSM, especially in the study population of Thane district of Maharashtra, could not resist that social pressure. Hence, it would be ideal, the ongoing interventions implemented by the organizations for MSM and their issues, should also consider addressing the social and cultural taboos associated with MSM. For instance, the family of MSM and the general population needs sensitization on the existence of MSM behavior, more specifically bisexual behavior of MSM. Through this process, an enabling environment for sharing their respective bisexual status is ensured. Then,

piloting a counselling intervention to encourage bisexual MSM in taking their married female partners to reproductive health services and possibly, keeping them informed about their bisexual status/ behavior is warranted.

Limitations

The participants of this study recruited from those who are visiting the hotspots for solicitation and/or sexual activity. Hence, the finding depicts primarily MSM visiting the hotspots in Thane. In addition, self-reported data of this study, behavior and the STI symptoms has potential of some error based on respondent's knowledge, information and his memory.

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