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Original Research Article

Prevalence of sexually transmitted infections among men having sex with men of urban Vadodara

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ABSTRACT

Background: Men having sex with men (MSM) are at higher risk of getting STIs, including HIV. Their role as bridge population is also very important in the spread of HIV. This study was done with the objective to study the demographic and behavioural factors of MSM and to measure the prevalence of STI among MSM using laboratory facilities of regional RTI/STI centre.
Methods: This was a cross sectional study conducted at a targeted intervention (TI) site of Vadodara city. Sixty-eight MSM were enrolled, counselled regarding HIV and other STI testing followed by an interview using a pretested semi-structured study instrument for the information regarding socio-demographic status, sexual behaviour, present and past history of STI and health seeking behaviour. Following that, clinical examination for presence of any signs of STI and sample collection [oro-pharyngeal, urethral and anorectal swab] was done in an examination room and blood samples were collected. The samples were tested for various STIs at Regional RTI/STI centre.
Results: Thirty-seven percent of MSM were bisexual. 37% MSM were not using condom consistently with 'unavailability at all the time' being the main reason. Six out of 68 MSM found positive of STI. Prevalence was maximum for Chlamydia infection followed by HSV2, HBsAg.
Conclusions: Prevalence of STI was 8.82% among MSM of Vadodara city.

Keywords: Men having sex men, Sexually transmitted infection, HIV, Prevalence, Homosexual

INTRODUCTION

Sexually transmitted infections (STI) are a major public health problem. According to World Health Organization (WHO), each year, there occur an estimated 357 million new infections; four of which are: chlamydia, gonorrhea, syphilis and trichomoniasis.[1] In India, the prevalence of STI is approximately six percent. 30 million of the total 357 million patients affected worldwide belong to India. STI causes acute illness, infertility, long term disability and death. Large numbers of sexually transmitted infections are asymptomatic and very few of those who have symptoms, seek proper testing and health care. Both symptomatic and asymptomatic infections can lead to the development of serious complications which can lead to severe consequences for the individuals and for the community. Even though passive surveillance systems exist in some countries, the data is not always reliable or complete to give the exact magnitude of the STI.[2]

Apart from being serious diseases on their own, STI intensify the transmission of sexually transmitted human immuno-deficiency virus (HIV) infections. Demographically the second largest country in the world, India has also the third largest number of people living with human immuno-deficiency virus/acquired immuno-

deficiency syndrome (AIDS). HIV Prevalence among adults (15-49 years) is 0.34% for India, whereas it is 0.41% for Gujarat state. In Gujarat (a moderate prevalence state) HIV infection is below 1% in antenatal women, but it is still 5% or more among high-risk groups [female sex workers (FSW), MSM and injecting drug users (IDU)].[3] MSM form a substantive population that is extremely vulnerable to HIV not only through their activities but also with regards to their bridging role in general population.

The prevalence of HIV among MSM in India is estimated at 6.8%, which is more than 10 times that among the general population.[4] The prevalence of sexually transmitted infections (STIs) is also high among MSM e.g., syphilis: 5.8%.[5]

As the dynamics of STI and HIV are similar and STI increases the risk of transmission of HIV, a reduction in the prevalence of STI is likely to reduce transmission, and therefore, incidence of HIV. Repeated cross-sectional STI surveys can also be a powerful tool for monitoring the effects of HIV and STI programs because they can demonstrate the combined effects of changes in risk behavior, changes in health-seeking behavior and improved quality of care while adapting to changing patterns of causation and antimicrobial susceptibility.[6]

Under the national AIDS control program, targeted interventions (TI) are being implemented for these high-risk groups. Such TI sites provide STI services to the target population which includes early diagnosis and treatment of STI, biannual syphilis screening, counselling services through TI counsellor, availability of free condoms, referral to integrated counselling and testing centre (ICTC) for HIV screening etc.[7]

This study was done to study the demographic and behavioral factors of MSM of urban Vadodara and to measure the prevalence of STI among MSM of urban Vadodara using laboratory facilities of regional RTI/STI centre.

METHODS

This was a cross sectional study conducted between February to August 2011 in Vadodara city at a non-government organization (NGO) which is identified as TI site for the MSM population of Vadodara by Gujarat state AIDS control society (GSACS). The study universe comprised of all MSM getting services from this TI site.

The MSM term is used to denote all men who have sex with other men, regardless of their sexual identity or sexual orientation. This is because a man may have sex with other men but still consider himself heterosexual or may not have any particular sexual identity at all.[8]

Twice a week visits by PI and skin and VD specialist to this NGO were scheduled. The 14 outreach workers (ORW) were informed beforehand about researcher's visits to their NGO. During each visit 3-4 ORW were asked to mobilize their key population (MSM) to the NGO. During seven months of data collection 83 MSM were brought to the NGO by ORW, out of which 15 refused to participate, thus making a total sample size of 68. As the study population is an unrevealed one, accessibility of the same could not be assured by the ORW. Before starting enrolment of the participants, necessary clearances and permissions were obtained from concerned authorities including (GSACS) and institutional ethics committee for human research (IECHR). MSM were enrolled in the study only after taking informed written consent.

The participants were counselled regarding HIV and other STI testing by counsellors of TI site. Following that, they were interviewed using a pretested semi-structured study instrument for information regarding socio-demographic status, sexual behavior, present and past history of STI and health seeking behavior. This was followed by clinical examination for presence of any signs of STI and sample collection [oro-pharyngeal, urethral and anorectal swab] which was conducted in an examination room by resident doctors from skin and VD department. Blood samples were collected by the laboratory technician of the TI site. Study instrument and laboratory requisition form had the same unique identification number for each participant.

All the collected samples were transported to regional RTI/STI centre, Vadodara, where the swabs were gram stained and serological tests (for syphilis, hepatitis B and C, chlamydia, herpes simplex virus type 2 and HIV) were performed. Individual reports were given to the participants after post-test counselling by TI counsellor. Those who tested positive for any of the STI were given appropriate treatment. Follow up was also done for these participants at tertiary care hospital and TI clinic for treatment. Privacy was ensured while taking the interview and sample collection. Data safety and confidentiality was also given due consideration. The data was entered in Microsoft Excel 2007 and analysis was done using SPSS Statistics 17.0 software.

RESULTS

Out of the 83 MSM contacted during seven months of data collection, 15 MSM refused to participate. Thus, data could be obtained from 68 MSM.

The age of MSM ranged from 18 years to 61 years, mean age being 26.94 years (SD=7.69). Majority (79%) of them were between the age of 21 to 30 years, while around 13% were below 21 years of age. Half of the MSM were unmarried and were living with their parents. Out of the 45% who were currently married, 36% lived with their spouse. Proportion of illiterates among the MSM was seven percent. Majority (70%) of MSM had reported having received primary or secondary level

education. Around 70% were earning less than 5000 rupees per month. Only four percent had an income of more than rupees 10,000. 34% MSM reported having 'no addiction' whereas 66% of MSM were addicted to tobacco, smoking or alcohol. Most of them (51%) had habit of chewing tobacco (Table 1).

Table 1: Distribution of MSM with respect to their socio demographic status (n=68).

Parameter	Number	Percentage
Age (in years)		
18-20	9	13.24
21-25	23	33.82
26-30	24	35.29
31-35	7	10.29
>35	5	7.35
Marital status		
Married	31	45.6
Never married	35	51.5
Divorced	1	1.5
Widowed	1	1.5
Addiction* (* Multiple answers possible)		
None	23	33.82
Tobacco chewing	35	51.47
Smoking	18	26.47
Alcohol	23	33.82
Drugs	1	1.47
Education		
Illiterate	5	7
Primary	23	34
Secondary	24	35
Higher Secondary	9	13
Graduation	4	6
Post-graduation	3	5
Monthly personal income (in Rs)		
<2500	16	23.52
2500-5000	32	47.06
5000-10000	17	25
10000-20000	3	4.42

With regards to sexual orientation, around 37% of the MSM were bisexual. 32% were active partners, 21% were passive partners while 10% were behaving as both active as well as passive partners (koti/panti) at times.

Table 2: Age at first sexual intercourse with male (n=68).

Age (in years)	Number	Percentage
<10	12	17.65
11-15	16	23.53
16-20	31	45.59
>20	7	10.29
No response	2	2.94

Almost 41% of the MSM had their first sexual intercourse with male before the age of 16 years. 18% had their first sexual intercourse with male before the age of 10 years (Table 2).

When asked whether they were consistently (at every intercourse in past 6 months) using condom with their male partners, 63% of the MSM responded positively. Out of 37% of the MSM, who were not using condoms consistently, 48% of them mentioned that they were aware of the importance of condom use, but sometimes because of 'unavailability of condom', failed to use it every time. 24% stated 'no pleasure' as the reason for non-consistent condom use, 'lack of awareness' and 'negligence' accounted for 12% each (Figure 1).

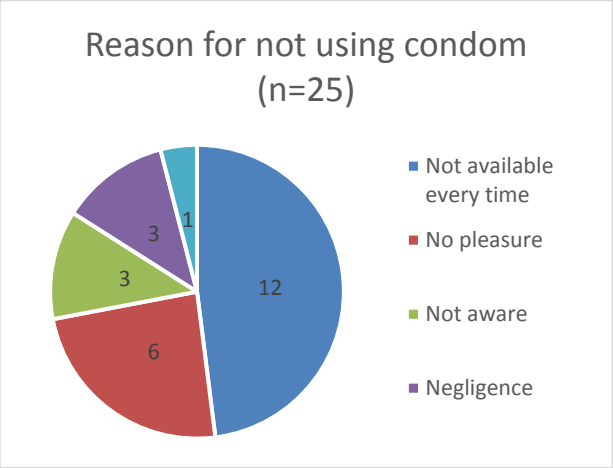

Figure 1: Reasons for not using condom.

32% had not used condom in their last intercourse with a male (Table 3).

Table 3: Condom use by MSM (n=68).

Parameter	Number	Percentage
Consistent condom use		
Yes	43	63.23
No	25	36.76
Condom use in last intercourse		
Yes	46	67.65
No	22	32.35

One or the other symptom of STI was experienced by 18% of the MSM at the time of interview. Out of them, 33% had complaint of genital ulcer while 25% had ulcer in anal region and discharge from the anal area.

Most of the MSM with symptoms of STI were already under treatment for the same; most of them had visited TI Clinic for treatment, while rest had taken advice from their peers (Table 4).

Table 4: Complaint of symptom of STI at the time of interview (n=68).

Parameter	Number	Percentage
Symptoms at present		
Present	12	17.65
Absent	56	82.35
Symptom* (n=12)		
Genital ulcer	4	33.33
Ulcer in the anal area	3	25
Discharge from the anal area	3	25
Other	5	41.67
Measures Done		
Advice from NGO clinic	10	83.33
Advice from peers	2	16.67

*Multiple answers possible

Blood samples were collected from all the 68 MSM out of which one sample was rejected due to insufficient quantity. Hence results for serological tests were available for 67 samples. Prevalence of STI was 8.82% among MSM (6 out of 68). Prevalence was maximum for Chlamydia (4.5%) followed by HSV2 (3%) and HBsAg (1.5%). None of the samples was found to be positive for syphilis, hepatitis C virus and HIV. None of the swabs was found positive for any of the STI.

All the 6 MSM who were found to be serologically positive for STI were asymptomatic at the time of examination.

DISCUSSION

Earlier studies have established the need for understanding demographics and sex work patterns to improve the effectiveness of HIV/STI prevention programs.[9,10] This study serves to identify potential vulnerabilities of MSM of urban Vadodara. Socio-demographic and sexual behavioral characteristics were examined and described for the MSM group along with the laboratory investigations for various STI.

Men accessing services at the TI site were young and most of them had at least a secondary school education, with a low prevalence of clinically diagnosed STI and HIV. Majority of the men had a predominant same sex preference, but half of the men were married to women. Being married may reflect some denial of same sex behaviour by married MSM, who might dissociate and suppress their secret lives and/or think that because they are socially perceived as heterosexual, they would be at low risk of acquiring HIV. They also may be socially isolated from other MSM and not be likely to receive community-based prevention interventions.[11]

About one third of the men expressed a bisexual behavioural preference, which was an independent predictor for having HIV/testing positive for HIV. Behaviourally, bisexual men preferred insertive anal and then vaginal sex in that order with their partners. These men may form a major bridge population between other high-risk MSM and transgender and their regular female partners or spouses, as also suggested by other studies conducted in Andhra Pradesh and Mumbai in the past.[12–14]

First sexual intercourse with male was common below the age of 16 years. Almost one fifth had their first sexual intercourse with male before the age of ten years. This might be due to sexual exploitation in their childhood. Childhood sexual abuse (CSA) is a significant global public health problem, which is associated with negative psychosocial outcomes and high-risk sexual behaviors in adults. MSM often report higher prevalence of CSA history than the general population, and CSA may play a key role in MSM's greater vulnerability to HIV.[15] More research is needed into this specific component of CSA leading to MSM or other high-risk behavior in developing countries.

The present study found high rates of unprotected sex and bisexuality among urban MSM. A study conducted in Andhra Pradesh also found that MSM reported high rates of unprotected anal sex with other men and women.[13] Another study among rural men from 5 different states in India also reported that 9.5% of single and 3.1% of married men had anal sex with other men and had greater number of male sexual partners and found high rates of unprotected anal sex with male partners.[12]

Nearly two thirds of the MSM were consistently using condom with their partner. Nearly one third of the MSM were involved in unprotected sex. That can increase the risk of acquiring STI and even transmitting them.

In this study, almost one fifth of the MSM had one or the other symptom of STI at the time of interview. But the serological tests revealed that prevalence of STI was only 8.82%. All those who had symptoms of STI at the time of interview were already under treatment for the same. Most of them visited clinic at the TI site for treatment, while rest had taken advice from their peers. This could be the reason for the low prevalence of STI being diagnosed by the laboratory tests.

A cross-sectional study of STI amongst 122 MSM attending an STI clinic in Mumbai indicated 20% STI prevalence rate.[16] In a study conducted among 831 MSM attending voluntary counselling and testing (VCT) services at the Humsafar Trust showed HIV prevalence of 12.5%, with 14% of the men reporting STD symptoms and 6.5 per cent of the men having a positive VDRL test for syphilis.[11] Prevalence of various STI was found to be 13.25% in a study done amongst MSM patients attending STI clinic at a tertiary care hospital in Chennai.[17]

CONCLUSION

Most of the MSM were between 21 to 30 years of age and married; with high rate of unprotected sex and

bisexuality. Prevalence of STIs was 8.82% among MSM. Prevalence was maximum for Chlamydia followed by HSV2 and HBsAg. Majority of MSM had sought treatment from the TI clinic at the NGO for episode of STI.

Recommendations

Majority of those who were positive for STI, were asymptomatic. Samples from this high-risk group should be regularly screened for presence of STI using appropriate laboratory tests and results should be correlated with HIV sero-status. Since 'inconsistent condom use' was the factor associated with the presence of STI, all MSM should be counselled through behaviour change communication regarding importance of correct and consistent condom use every time. Validation of syndromic diagnosis with laboratory diagnosis may be undertaken; so that this approach may be evaluated for screening.

Limitation of the study

As the MSM who participated in this study were recruited through their facilitators (peer educators and ORW), they may not be the representative of all the MSM, thereby, suggesting a bias towards those who are better connected with their peers

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REFERENCES

1. STI Factsheet, World Health Organization. August, 2016. Available at: http://www.who.int/news-room /fact-sheets/detail/sexually-transmitted-infections (stis). Accessed on 2 January 2019.
2. National Guidelines on Prevention, Management and Control of Reproductive Tract Infections including Sexually Transmitted Infections. Ministry of Health and Family Welfare, Govt of India. August, 2007.
3. National AIDS Control Organisation, Annual Report 2016-17. National AIDS Control Organisation, Department of AIDS Control, Government of India, 2018.
4. State Epidemiological Fact Sheets, WEST and SOUTH REGIONS. National AIDS Control Organization, Ministry of Health and Family Welfare, Govt of India, 2017. Available at: http://www.naco.gov.in/. Accessed on 2 January 2019.
5. Gupta A, Mehta S, Godbole SV, Sahay S, Walshe L, Reynolds SJ, et al. Same-sex behavior and high rates of HIV among men attending sexually transmitted infection clinics in Pune, India (1993-2002). J Acquir Immune Defic Syndr. 2006;43(4):483–90.
6. The pre-surveillance assessment Guidelines for planning serosurveillance of HIV, prevalence of sexually transmitted infections and the behavioural components of second generation surveillance of HIV. UNAIDS/WHO Working Group on Global HIV/AIDS and STI Sur, 2005. Available at: http://www.who.int/hiv/pub/surveillance/psaguidelines.pdf?ua=1. Accessed on 2 January 2019.
7. Gujarat AIDS Control Society, Annual Report 2016-17, Gujarat AIDS Control Society, Department of Health and Family Welfare, Government of Gujarat, 2017.
8. Operational Guidelines For Implementing HIV Targeted Interventions Among Men Who Have Sex With Men in India - Guidelines For CBOs/NGOs, SACs And TSUs. National AIDS Control Organisation, Department of AIDS Control, Ministery of Health and Family Welfare. Available at: http://naco.gov.in/sites/default/files/MSM-OG.pdf. Accessed on 2 January 2019.
9. Ramesh BM, Moses S, Washington R, Isac S, Mohapatra B, Mahagaonkar SB, et al. Determinants of HIV prevalence among female sex workers in four south Indian states: analysis of cross-sectional surveys in twenty-three districts. AIDS. 2008;22(5):35-44.
10. Evans C, Lambert H. The limits of behaviour change theory: Condom use and contexts of HIV risk in the Kolkata sex industry. Cult Health Sex. 2008;10(1):27-42.
11. Kumta S, Lurie M, Weitzen S, Jerajani H, Gogate A, Row-kavi A, et al. Bisexuality, Sexual Risk Taking, and HIV Prevalence Among Men Who Have Sex With Men Accessing Voluntary Counseling and Testing Services in Mumbai, India. J Acquir Immune Defic Syndr. 2010;53(2):227-33.
12. Verma RK, Collumbien M. Homosexual activity among rural Indian men: implications for HIV interventions. AIDS. 2004;18(13):1845–7.
13. Dandona L, Dandona R, Gutierrez JP, Kumar GA, McPherson S, Bertozzi SM, et al. Sex behaviour of men who have sex with men and risk of HIV in Andhra Pradesh, India. AIDS. 2005;19(6):611–9.
14. Hernandez AL, Lindan CP, Mathur M, Ekstrand M, Madhivanan P, Stein ES, et al. Sexual Behavior Among Men Who have Sex with Women, Men, and Hijras in Mumbai, India—Multiple Sexual Risks. AIDS Behav. 2006;10(1):5–16.

15. Tomori C, McFall AM, Srikrishnan AK, Mehta SH, Nimmagadda N, Anand S, et al. The prevalence and impact of childhood sexual abuse on HIV-risk behaviors among men who have sex with men (MSM) in India. BMC Public Health. 2016;16(1):784.
16. Setia MS, Lindan C, Jerajani HR, Kumta S, Ekstrand M, Mathur M, et al. Men who have sex with men and transgenders in Mumbai, India: An emerging risk group for STIs and HIV. Indian J Dermatol Venereol Leprol. 2006;72:425-31.
17. Prabahar P, Ranganathan T, Vijayabhaskar C, Kalaivani S, Balamurugan L, Sivasankri P. Sexually transmitted infections among men who have sex with men : a retrospective study in a tertiary care hospital. Int J Res Med Sci. 2017;5(7)3222-6.

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