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### Original article

# Socio-demographic profile, awareness regarding HIV/AIDS and self reported sexual behavior of men having sex with men in Ahmedabad, India

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#### ABSTRACT

**Aims and objectives:**The main objectives of the study were to describe socio-demographic characteristics, to assess knowledge regarding HIV/AIDS and to assess sexual behaviour among men who have sex with men (MSM) living in Ahmedabad. **Materials and Methods:** A survey was carried out among 172 MSM aged 18 years and above and recruited through the snowball technique or in MSM-identified venues. A semi-structured questionnaire was conducted among them. **Results:** Out of 172 participants, Ninety one percent were between 18-47 years, eighty four percent were literate, fifty two percent worked as labourers. Forty six percent were married, Seventy six percent had information about non-penetrative methods of safe sex, Eighty eight percent had sex with irregular male partners during last one month. **Conclusion:** A large proportion of MSM in Ahmedabad still remains at elevated risk for contracting HIV infection. Study participants had information regarding HIV and its transmission routes and preventive practice, but high risk sexual behavior was evident in the form of high number of sexual partners and inconsistent practice of safe sex.

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### 1.Introduction:

India has the greatest number of HIV infections in Asia and the third highest total number of infected persons globally [1,2]. The National AIDS Control Programme (NACP), launched in 1992, is being implemented as a comprehensive programme for prevention and control of HIV/AIDS in India. As per HIV estimates for the year 2008-09, there are an estimated 23.9 lakh people living with HIV/AIDS in India with an adult prevalence of 0.31 percent in 2009. Most infections occur through heterosexual transmission [3]. HIV infection among men who have sex with men (MSM) has been increasing in recent years around the world, particularly in Asia [4].

#### 1.1.Total Number of MSM and prevalence of HIV infection among MSM:

The United Nations General Assembly Special Session on HIV/AIDS Report estimates that there are about 3.1 million MSM in India [5].

While the estimations at the time of formulation of NACP-III put the numbers of MSM and transgenders (TGs) at maximum risk as 3.51 lakh, the estimation in 2009 revised their numbers to 4.12 lakh [3].

In India, the current estimated HIV prevalence among MSM ranges between 7 and 16.5% [6]. The Government of India's National AIDS Control Organization (NACO) estimates an overall HIV prevalence of 6.41 per cent among MSM, although this may be a lower-limit estimate [3]. The estimates for the prevalence of HIV in MSM in India vary. Pockets of high HIV prevalence among MSM are identified in high prevalence states as well as in Delhi, Gujarat and West Bengal. Twenty eight districts have 5 per cent or more HIV prevalence among MSM according to the Behavioural Surveillance Survey (BSS) 2009 [7]. In Mumbai, 12 per cent of MSM seeking voluntary counselling and testing services were HIV-infected [8], and 18 per cent of the MSM screened in 10 clinics in Andhra Pradesh were found to be infected [9]. A study done in Chennai found 8 per cent prevalence in a sample of 210 MSM recruited by peer outreach workers [6]. In the context of this disproportionately high level of HIV risk, it becomes extremely important to understand the socio-cultural factors that may exacerbate sexual risk among this group.

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### 1.2.Socio-demographic characteristics:

A report from Karnataka found that of the 3643 MSM covered, 13 per cent were below 20 and 54 per cent between 21 to 30 yr. Fifty two percent had completed high school education and 24 percent were illiterate [10]. MSM who presented at the VCT clinic at the Humsafar trust, a large NGO for MSM and TG in Mumbai, had a mean age of 24.8 yr with 8 per cent being illiterate [11].

### 1.3.Knowledge about HIV among MSM:

The 2009 round of BSS also reported low levels of comprehensive knowledge about HIV among MSM including, 21 per cent in UP; 30 per cent in Manipur; 32 percent in Tamil Nadu; 22 per cent in Karnataka; and 57 per cent in Andhra Pradesh [7]. In 2010, 39.4 per cent of MSM could correctly identify ways of preventing sexual transmission of HIV [12]

### 1.4.Prevalence of Sexually transmitted infections (STIs) among MSM:

Only limited data are available about STI prevalence among MSM in India. A preliminary analysis of STIs among 85 MSM attending an STI clinic in Mumbai found that the point prevalence of HIV in this population was 15 per cent and VDRL reactivity was 16 percent [13]. In a study from Chennai, analysis of 51 MSM who attended a community-based clinic over a period of three months revealed that the 13 (26%) MSM were clinically diagnosed to have one or more STIs [14].

### 1.5.Practice of safe sex among MSM:

In 2010, condom use at the last occasion of anal sex with a male was reported by 57.6 per cent of MSM in Manipur and 48.9 per cent in Tamil Nadu [16]. Consistent condom use with paid male partners from BSS 2009 was low in Karnataka at 35 per cent; it was reported at 54 per cent in Tamil Nadu [17]. A study conducted in Andhra Pradesh found that MSM reported high rates of unprotected anal sex with other men and women [15].

### 1.6.Self-perception of risk of HIV infection:

The perception of sexual risk for HIV varies among MSM, and throughout the epidemic MSM were engaged in sophisticated decision making about what they consider to be risky [18]. In another study, almost half of all men (49%) who requested an HIV test did not perceive themselves to be at any risk for HIV infection and 26 per cent indicated that they did not know if they were at risk for HIV acquisition [10]. Recent estimates however, report that MSM have higher perceptions of risk from 62 to 75.5 per cent [6]. It is hoped that this perception of risk should increase HIV testing across sites.

### 1.7.Coverage of HIV prevention program:

There are ranges of coverage of HIV prevention programme estimates in India. The overall BSS showed a range of 1.8-63.4 per cent coverage. NACO reported that by January 2010, 78 per cent of their targeted MSM (275,000 out of 351,000) have been reached [16]. In 2009, 25.8 per cent of 210 MSM in Chennai had participated in an HIV prevention programme [6].

Under NACP-III, one of the major thrust areas is Targeted Interventions. Targeted Interventions are preventive interventions

focused at high risk groups and bridge populations in a defined geographic area. The core element of the control strategy is to ensure that people who are at high risk do not transmit the infection [3].

Gujarat, a state in Western India, with the population of 5.5 million, is a moderate HIV prevalence state with 6 out of 25 districts in 'A' category and other four being in 'B' category. The recent trend indicates that the epidemic has moved to the general population as well [19].

MSM communities around the world are diverse in attitudes, social relationships and sexual behaviour. The overwhelming majority of the scientific literature related to homosexual and bisexual behavior or factors associated with HIV high-risk sexual practices refers to the developed world. Relatively little is known about current practices and sexual behaviour among MSM in the developing world [20].

Ahmedabad, with approximately 5 million inhabitants, is one of the most important cities in the Western India. The city is witnessing greatly mobile population, expanding tourism, and employment opportunities. These conditions have the potential to cause a big impact in the dissemination of HIV infection. In addition, MSM tend to migrate extensively to major urban centres in an attempt to avoid discrimination and alienation and to find support and acceptance from other MSM [21]. The large urban areas in India still constitute the major epicenters for HIV/AIDS, and Ahmedabad follows the same pattern [22]. For these reasons, the present survey was conducted in Ahmedabad to describe and identify the social, economic, behavioural and demographic characteristics of MSM living in this area.

## 2.Material and methods:

### 2.1. Study design

A community based cross-sectional survey is a convenient method for obtaining information about knowledge, attitudes, and sexual behavior related to HIV spread, the effectiveness of prevention efforts, and the epidemiology of HIV and AIDS [23]

### 2.2.Study Participants and Inclusion criteria

This study surveyed Man having sex with man (MSM), aged 18 years and above, living in Ahmedabad, (Gujarat, Western India) from March 2009 to July 2009.

The definition of MSM used was, "all men who have sex with men, regardless of their sexual identity, sexual orientation and whether or not they also have sex with females" [24].

After the invitation to participate, and after giving consent for the study, the interview took place in locations chosen by the respondents.

### 2.3. Exclusion criteria: MSM who did not give consent

### 2.4. Method of data collection:

Because of the persisting social and cultural stigma attached to homosexuality in India and the nature of MSM networks, sampling

the population of MSM in Ahmedabad was confronted with difficulties. This target population is difficult to define and to reach. To maximize the representativeness of this study, the participants were recruited through known MSM identified venues combined with the snowball technique [25]. With the help of a non-governmental organization (NGO), that works with the AIDS Control Program to promote HIV prevention activities among homosexual and bisexual men in Ahmedabad, we listed all the potential MSM identified venues such as streets, public squares or cinemas, where men belonging to different social and economic classes meet. The snowball technique consists of identifying some members of the rare population and asking these members to identify others. These identified members will be asked to identify other members, and so on, until a sample of the desired size has been achieved [26]. One to one interview method was adopted. All the participants were interviewed by the principal author eliminating the inter-interviewer bias.

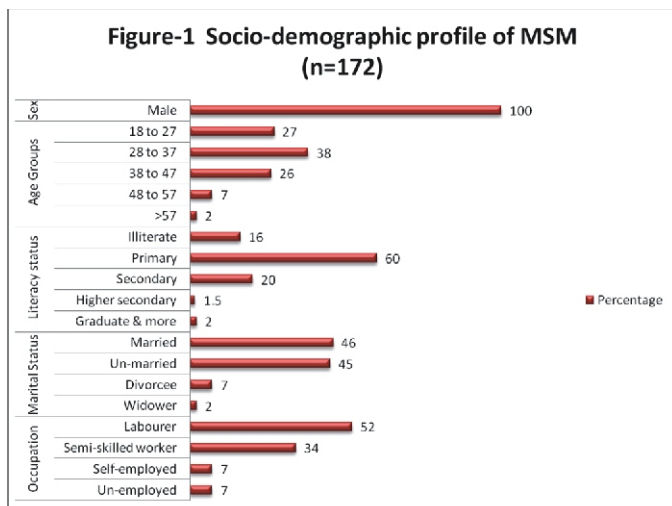
**2.5.Tool for data collection:**

Semi-structured bi-lingual (Gujarati and English) questionnaire was conducted among the 172 MSM respondents who were recruited through the snowball technique, public squares and other places, such as cinemas, workplaces. Information was obtained regarding socio-demographic characteristics like age, marital status, educational achievements, occupation and income. Questions were asked about participants' sexual identity, level of information about HIV/AIDS, number of male and female sexual partners, the frequency of sexual contacts; involvement in insertive and receptive anogenital intercourse in the past one month; attitudes about safer sex and condom use. Great efforts were made to provide privacy and confidentiality during the interviews.

**3.Results:**

**3.1. Sample characteristics**

Out of 172 MSM, 91% were between 18-47 years. The mean age of the participants was 31.5 years (SD: 7.4, range: 18-65, median: 30) majority (84%) were literate, 45% were married and 52% worked as labourers.(Figure-1)

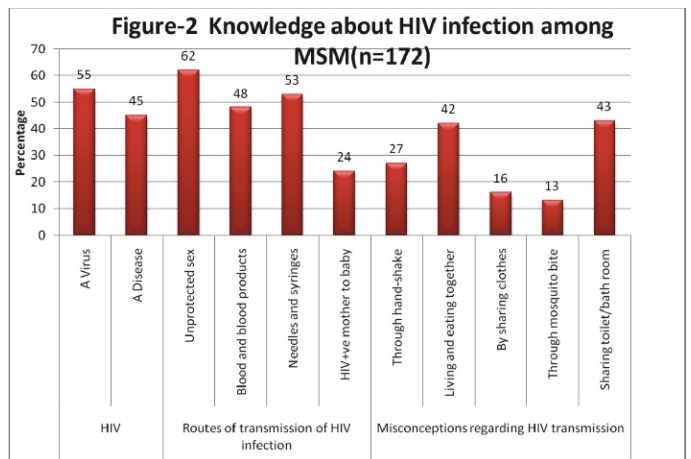


**3.2. Sexual identification**

All the participants identified themselves as MSM, (46% were married to a woman.)

**3.3. Awareness regarding HIV and AIDS** 53% participants reported AIDS as a disease, 17% as a fatal disease, 16% gave a complete answer as a fatal infectious disease, 3% had not heard about AIDS. 55% reported HIV as a virus, while 45% reported it as a disease.

**3.4. Knowledge regarding routes of transmission of HIV** (respondents were given the list of routes), 62% of participants reported unprotected sex as a route of transmission for HIV, 48% mentioned blood and blood products, 53% said contaminated needles and syringes, 24% believed it can be transmitted from HIV+ve mother to her baby. (Figure-2)



**3.5. Misconceptions regarding routes of transmission of HIV**

42% of the participants believed that living and eating together can be a route of HIV transmission, 27% reported hand shake, 13% said mosquito bite while 43% reported sharing toilet and bathroom facilities can be the routes of HIV transmission. (Figure-2)

**3.6. Awareness about STIs**

When asked about STIs (Sexually Transmitted Infections), 88% reported that they have heard about STIs. Regarding the symptoms of STIs (explained in a language that MSM can understand), 89% reported genital warts, 83% as ulcer on genital part, 64% reported urethral discharge as the symptoms of STIs. 28% of MSM had suffered from STIs in the past. For treatment of STIs, 75% of participants reported that they would prefer to go to the panel doctor arranged by the NGO, 21% preferred going to private clinic, while government hospitals were preferred by only 4%.

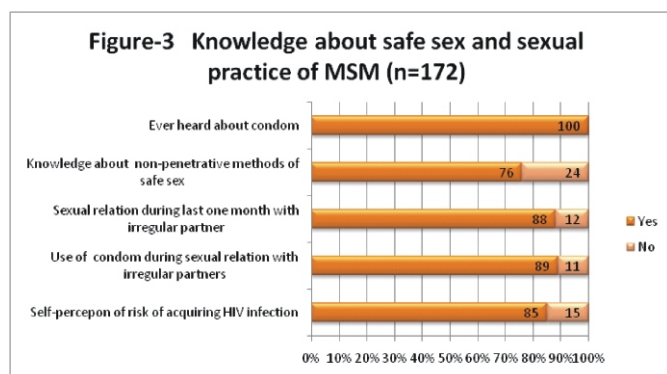
**3.7. Knowledge and practice of Safe sex:**

All the participants had heard about condom, 88% said condom was easily available to them, 55% said it would not take more than 5 minutes by walking to get a condom. Majority reported that peer educators and out reach workers of NGO were important sources to get condoms.

76% of the participants had information about non-penetrative methods of safe sex. The methods they were aware of were thigh sex, breast sex and mutual masturbation

88% of MSM reported that they had sex with irregular partners in past one month. (Figure-3)

All participants reported, type of relation as penetrative anal sex, 88% reported oral sex, while 26% reported penetrative vaginal sex. 89% reported that they used condom during penetrative sex, but when asked about the number of sexual encounter and use of condom, it was found that as number of encounters increased the use of condom decreased. 43% of participants said they used condom when sexual encounters were between 1 to 10, while use of condom was only 3%, when encounters were more than 20 per month. 85% of participants felt that they were at risk of getting HIV infection because of multiple sexual partners and inconsistent use of condom. Overall, a large proportion of the participants reported engaging in high-risk sexual behaviour.



Surveys carried out among MSM present limitations, because it is difficult to sample this stigmatized population in a representative way. The sampling method applied to this survey was a non-random sampling. Therefore, the findings of this survey should not be generalized, to represent all men who have sex with men in Ahmedabad. This study does, however, give a brief image of the diversity and complexity of the life of MSM in an area of a developing country in South Asia.

#### 4. Discussion

##### 4.1. Profile of respondents:

In the present study, 38% of participants belonged to 28-37 years age group, while a study conducted by Naz Foundation International in three cities of India, with a sample size of 200 MSM in each city in the year 2000, showed that 58% of participants belonged to 22-30 years in two cities of Hyderabad and Bangalore while in Puducherry, 48% of participants belonged to 22-30 year [27]. A report from Karnataka found that of the 3643 MSM covered, 13 per cent were below 20 and 54 per cent between 21 to 30 yr [10]. MSM who presented at the VCT clinic at the Humsafar trust, a large NGO for MSM and TG in Mumbai, had a mean age of 24.8 yr with 8 per cent being illiterate [11]. In another study done by Naz Foundation International on 200 MSM (non-random sampling) in the year 2002 in Lahore, 15% were between 18-22, and 29% were between the ages of 22 - 27 [28].

In the current study, 45% of participants reported themselves as unmarried, while in the Naz Foundation International's study, 75% in Hyderabad, 70% in Bangalore and 74% in Puducherry were reported as unmarried [27]. The gap may be due to the difference in the age structure of the study population, as well as the differing

socio-cultural factors. While in a study done in Mumbai on ICTC attendees (non-random convenient sample of MSM attending ICTC) 77% of participants were unmarried [10]. The proportion of married participants was higher in the present study as compared to both these studies, 27% of respondents reported being married, 22% respondents reported themselves as married to a woman in a study done in Chennai [29]. 16% participants were married to a male in the Frontiers Prevention Project (FPP) in Andhra Pradesh [30].

##### 4.2. Knowledge and awareness about HIV/AIDS:

98% participants had heard about AIDS. In Naz study, 85% participants in Bangalore, 71% participants in Hyderabad and 57% in Puducherry had heard about AIDS [27]. The increased number of participants who have heard about AIDS in this study, may be due to difference in the time period the studies were conducted, as the Naz International study was conducted in 2000, while the present study was conducted in the year 2009. In Lahore study, 95% of respondents had heard of AIDS. AIDS as a "dangerous disease" which cannot be treated or cured was stated by 77% of respondents [28]. The 2009 round of National Behavioural Surveillance Survey (NBSS) also reported low levels of comprehensive knowledge about HIV among MSM including, 21 per cent in UP; 30 per cent in Manipur; 32 per cent in Tamil Nadu; 22 per cent in Karnataka; and 57 per cent in Andhra Pradesh [7]. In 2010, 39.4 per cent of MSM could correctly identify ways of preventing sexual transmission of HIV [10].

65% respondents in the present study believed that they may get infected with HIV when vaginal sex without condom is done, while in Naz Foundation study the proportions were 75% respondents in Bangalore, 67% in Hyderabad and 59% in Puducherry [27]. As the participants were not asked about the regular or irregular female partner and as higher number of participants in the present study are married, they consider their female partners as safe and non-harmful with respect of HIV infection. There is a need of imparting more health education to this group, so that not only the MSM, but their female partners, who are at highest risk, can also be protected against HIV infection. Prevention efforts directed at MSM should discuss the prevention of HIV not only in the homosexual but also in heterosexual relationships.

##### 4.3. High risk sexual behavior:- Number of sexual partners in previous month:

52% of participants had sexual partners in the range of 1-10 and close to 32% had 10-20 partners. In the Naz study, 58% of respondents in Bangalore and 68% in Puducherry had 1-10 sexual partners in the previous month. While in Hyderabad 44% had sexual partners in the range of 21-50, 20% MSM had more than 51 partners [27]. The number of partners was very high in study population of Hyderabad. While participants from Bangalore and Puducherry had similar number of sexual partners as reported by the current study. While in Lahore study, 75% of respondents had more than 7 partners in the previous month, with 15% reporting partner levels of 21 or more. 5% of respondents reported more than 51 partners each. [28]. 25.9% of MSM in Andhra Pradesh reported that they had sex with three to five male partners during the past one month [15].

counseling and testing center (VCTC) it was 14% [10]. In a study Number of male partners of MSM in last four weeks was 7.51 in the Frontier Prevention Project (FPP) in Andhra Pradesh [30].from Chennai, analysis of 51 MSM who attended a community-based clinic over a period of three months revealed that the 13 (26%) MSM were clinically diagnosed to have one or more STIs [14]. The overall prevalence of gonorrhoea and/or Chlamydia amongst 513 MSM during 2008-2009, recruited from four clinics at two cities of Mumbai and Hyderabad MSM was 16.6 per cent (13.8% had gonorrhoea and 5.1% Chlamydia) [31]. In another study from Chennai, 5.7% respondents out of total 210, self-reported STI history last six months [29]. In the current study, good proportion of participants(88%) reported that they had heard about STIs, majority were aware not only about the different symptoms of STIs but also the increased risk of HIV infection because of STIs and where to go for treatment for STIs. For treatment of STIs,75% of participants reported that they would prefer to go to the panel doctor arranged by the NGO, 21% preferred going to private clinic, while government hospitals were preferred by only 4%. Majority of MSM preferred going to doctor arranged by NGO, rather than going to Government health facility, this is in line with World Health Organization's report that MSM and transgender people experience significant barriers to quality health care due to widespread stigma against homosexuality and ignorance about gender variance in mainstream society and within health systems. Social discrimination against MSM and transgender people has also been described as a key driver of poor physical health outcomes in these populations across diverse settings [32]

#### 4.4. STI prevalence:

16% MSM were positive based on symptoms, suggestive of STIs, in the study done in Mumbai among MSM clients of Voluntary

#### 4.5. Use of condom during sexual encounters:

89.5% respondents said that they used condom during penetrative sex in the previous month. In the Naz study, 64% respondents in Hyderabad, 90% in Bangalore and 70% in Puducherry reported using condom during penetrative sexual practices [27] Majority of the MSM (89.5% in this study, 90% in Naz Bangalore study), were aware that whether it is penetrative vaginal sex or anal sex, condom should be used to stay protected against HIV and other STIs. While in Lahore study, the data clearly showed that while most respondents have experience of condoms (79%), their use was highly irregular (only 17% of anal sex acts were covered in the previous month) [28]. A study conducted in Andhra Pradesh found that MSM reported high rates of unprotected anal sex with other men and women [15].

In the Integrated Behavioural and Biological Assessment (IBBA), 2005–2007 survey among MSM, consistent condom use (every time) was low in Andhra Pradesh at four sites (ranged from 2% to 22%) with regular partners but was higher in Tamil Nadu at four sites (ranged from 25% to 41%) [33]

In a study from Bangalore30, among a sample of 357 men reporting same sex behaviour; 41 per cent also reported sex with a woman in the past year and 14 per cent were currently married. Condom use was very inconsistent with all male partners, while 98 per cent reported unprotected vaginal sex with their wives [34]. In the Frontier Prevention Project (FPP) in Andhra Pradesh, use of condom by MSM during last sexual encounter, where FPP intervention was done was as high as 94% [30].

#### 4.6. Self-perception of risk of HIV infection

In the present study, because of multiple sexual partners and irregular use of condoms during sexual encounter, 85% of participants felt that they were at risk of getting HIV/AIDS infection. While in a study done in Mumbai on ICTC attendees,49% did not perceive themselves at a risk of HIV infection [10]. In Lahore study, In terms of personal risk assessment, 79% of respondents stated they did not know, while 14% believed they were at a small to medium risk,7% stated that they had a high risk [28]. In a study done in Chennai reported that MSM have higher perceptions of risk from 62 to 75.5 per cent [6]. It is hoped that this perception of risk should increase HIV testing across sites.

Social desirability might lead to under reporting of sexual risk behavior and over reporting of condom use.The responses to the questions about the number of partners and condom use with casual partners during anal and vaginal sex involved a time frame of one month. Ideally, it should be for six months, so that the average number of sexual partners can be calculated.

#### 5. Conclusion

A large proportion of MSM in Ahmedabad still remains at elevated risk for contracting HIV infection. Study participants had information regarding HIV and its transmission routes and preventive practice, as well as misconceptions regarding the routes of transmission of HIV infection and their high risk sexual behavior was evident in the form of high number of sexual partners and inconsistent practice of safe sex. Imparting knowledge regarding safe sex practice is not enough, MSM should be motivated to actually practice it. Preventive strategies should emphasize the protective capability of condoms during all kinds of intercourse, including anal sex between men. Community level behavioral interventions among MSM for the prevention of HIV and other STIs should be carried out so that MSM can evaluate their level of risk and can change the social organization of sexual relationships in support of sustained behavioural changes. Implementation of sex venue based outreach strategies to decrease risky sexual behavior and increase uptake of HIV testing and counseling among MSM is suggested.

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