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Original Research Article

Uptake of HIV testing and HIV prevalence among men who have sex with men in Karnataka

Vani Srinivas[1], Rajesh T. Patil[2]*, M. Chandrakantha[3], T. L. N. Prasad[4], Sunil D. Khaparde[5]

[1]Department of Community Medicine, [2]Department of Microbiology, P K Das Institute of Medical Sciences, Vaniyamkulam Palakkad, Kerala, India
[3]Karnataka State AIDS Prevention Society, Bangalore, Karnataka, India
[4]STI -Division, National AIDS Control Organization, New Delhi, India
[5]Directorate General of Health Services, Ministry of Health and Family Welfare, Dte. GHS / MoHFW, Govt. of India, New Delhi, India

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***Correspondence:**
Dr. Rajesh T. Patil,
E-mail: rtpafmc@gmail.com

ABSTRACT

Background: This paper presents the prevalence of human immuno deficiency virus (HIV) infection among men who have sex with men (MSM) attending integrated counselling and testing Centres (ICTC) in selected districts of Karnataka.
Methods: A cross sectional study was done at ICTCs. Men and transgenders coming with referral slips from targeted intervention (TI), non-government organizations (NGOs) were considered as MSMs. The basic demographic data, HIV test result and details of post- test counselling were collected in specific format. Data from 13 districts was obtained from April 2009 to March 2010 and comparing the prevalence of HIV among MSM in HIV sentinel surveillance (HSS).
Results: Out of 8,276 MSMs in 13 districts, 2808 (33.9%) visited ICTCs with TI NGOs referral slips and were tested for HIV once in a year. The overall prevalence of HIV was 8.6%. Prevalence was highest (17.3%) among men in the age group of 41 to 45 years, illiterates (11.5%), unemployed (11.2%) and divorced and separated (13.3%) and widowed (13.6%) MSMs. Among those tested, 97.7% of MSM underwent post-test counselling and collected their report. The highest HIV prevalence was among MSMs from Mysore district (20.1%), followed by Udupi (19.9%) and Bagalkot (10.6%). Rest of all the other districts had less than 10% of HIV prevalence.
Conclusions: The uptake of HIV testing among the MSM with referral slips was low in Karnataka. The prevalence level differs in various districts. There is need for more focused and effective counselling by peer educators for correct and consistent condom usage among illiterate, widowed and unemployed MSMs.

Keywords: Human immuno deficiency virus, Male sex worker, Prevalence, India

INTRODUCTION

On June 5, 1981, Morbidity Mortality Weekly Report (MMER) published a report of five cases of pneumocystis carinii pneumonia (PCP) among previously healthy young men in Los Angeles. All of the men were described as "homosexuals"; two had died. Thus, the first AIDS patient was found in male homosexual.[1]

Men who have sex with men (MSM) commonly have multiple sex partners and higher proportion of unprotected sex behavior compared with non-MSM male,

suggesting that they are a high-risk population for human immuno deficiency virus (HIV) transmission.[2] Further the MMER also said controlling the epidemic requires sustained prevention programs in all of these affected communities, particularly programs targeting MSM, women, and injection drug users.

In India, the HIV epidemic is concentrated in specific sub-groups. Considering more than 99 percent of the population in the country is free from infection, National AIDS Control Programme Phase-III (NACP-III between 2007-2012) and IV (2012-2020) has placed the highest priority on preventive efforts on important sub- groups as female sex workers (FSW), men-who-have-sex-with-men (MSM) and injecting drug users (IDU) while, at the same time, also seeks to integrate prevention with care, support and treatment. Sub-populations that have the highest risk of exposure to HIV, thus receives the highest priority in the intervention programmes.[3]

In India the HIV epidemic continues to be concentrated, with relatively higher prevalence among high risk groups comprising FSW, MSM, H/TG, IDU, and bridge population group of SMM and LDT, with lower prevalence among ANC attendees, which reflects proxy prevalence among the general population. The highest prevalence recorded in the 2017 rounds of HIV Sentinel Surveillance (HSS) was among IDU (6.26%), followed by H/TG (3.14%), MSM (2.69), FSW (1.56%), LDT (0.86%) and SMM (0.51%).[4]

In the states of Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu and Telangana, higher HIV prevalence is among FSW, MSM and H/TG indicates an epidemic primarily driven through unprotected sexual intercourse while in many of the north-eastern states, high prevalence among IDU, FSW and MSM, as well as in ANC populations, indicates an epidemic fuelled by multiple, possibly interrelated, risk behaviours.[5]

Thus, not everyone in the population has the same risk of acquiring or transmitting HIV. The prevention of new infections in high risk groups is a major thrust in National AIDS Control Programme III and IV.[6] The most effective means of controlling the spread of HIV in Karnataka is through the implementation of Targeted Intervention (TI) program.

Services provided under core group (FSW/ MSM/ IDU) TIs targeted interventions are behaviour change communication (BCC), condom provision i.e. free male condoms distribution by peer educators, treatment for sexually transmitted infections (STIs), provision of clean needles and syringes for IDUs in IDU TIs, creating an enabling environment with community involvement and participation and bi annually referral to ICTC for HIV and syphilis testing. For bridge group TIs, the services are screening for STI and linkages with ICTC for HIV and Syphilis testing. The subgroups are also linked to care, support and treatment services if found HIV positive.[7]

This paper presents the uptake of HIV testing and prevalence of HIV infection among men who have sex with men (MSM) attending integrated counseling and testing centers (ICTC) in selected districts of Karnataka and comparing the prevalence reported in HSS over the period of time (till 2017 round of surveillance).

METHODS

Study design

Cross sectional study at ICTC and comparing the HIV prevalence among with the published reports (secondary data analysis).

Study setting

ICTC enables individuals to know their HIV status and receive counselling and support in coping with a HIV positive or negative result. The goal of referring the MSM to ICTC is to increase the number of MSMs who know their status. If found HIV positive ICTC counsellor link the MSMs to HIV care, support and treatment services and for those found to be HIV-negative the counsellor helps them to develop risk reduction skills to remain HIV-negative.

Selection of districts

The targeted intervention programme being implemented in all the districts of Karnataka. The data of 13 randomly selected districts is analysed in this study.

Study participants

MSMs are registered with targeted intervention programme under National AIDS Control Program Phase III (NACP III).

Inclusion criteria

Male clients and trans-gender visiting ICTC, coming with referral slips of Targeted intervention NGOs were considered as Men who have sex with men MSM.

Exclusion criteria

Male clients (ICTC) and trans-gender not coming with the referral slips of TI NGOs were excluded from the study.

Procedure

The HIV testing is offered to MSMs after pre- test counselling and obtaining the informed consent in writing. The basic demographic data, HIV test result and

details of post- test counselling were collected in a structured format. The monitoring and evaluation Assistant, from district AIDS prevention and control units compiled the data in the excel sheet and had shared the data with the State AIDS Control Society for validation and analysis.

Study period

Data from 13 districts was obtained from April 2009 to March 2010. The data was reviewed and field visit were made to validate the data. Data was cleaned and analysed by using SPSS software version 16.

RESULTS

Out of 8276 MSMs in 13 districts, 2808 (33.9%) were tested for HIV. As per the national protocol each MSM should be encouraged to uptake HIV testing once in a six month i.e. twice in a year. Thus, 16.76% of target for HIV testing was achieved during 2009-10 in 13 districts of Karnataka (Table 1).

Among those tested against testing targets 36.1% were from Bellary district, 34% from Bagalkot district and 22.6% from Tumkur district, rest all other districts less than 20% of MSM were tested for HIV against the annual target for testing (to be met by TI NGOs).

Table 1: District wise uptake of HIV test by MSMs against NACO target for testing.

S. No	District	Population MSM registered in TIs	Target for testing MSM (Bi-annually)	No. of MSMs tested who brought NGO Referral slips to ICTC	% tested against registered numbers i.e. tested once in a year	% MSM tested against target NACO
1	Bagalkot	591	1182	406	68.7	34.3
2	Belgaum	1843	3686	553	30.0	15
3	Bellary	543	1086	392	72.2	36.1
4	Chikmagalur	445	890	137	30.8	15.4
5	Gadag	367	734	64	17.4	8.7
6	Gulbarga	808	1616	304	37.6	18.8
7	Kodagu	120	240	40	33.3	16.7
8	Kolar	216	432	45	20.8	10.4
9	Mysore	1160	2320	140	12.1	6
10	Tumkur	1008	2016	456	45.2	22.6
11	Shivmoga	304	608	67	22.0	11.02
12	Udupi	675	1350	181	26.8	13.4
13	Yadgir	196	392	23	11.7	5.9
	Total	8276	16552	2808	33.9	16.96

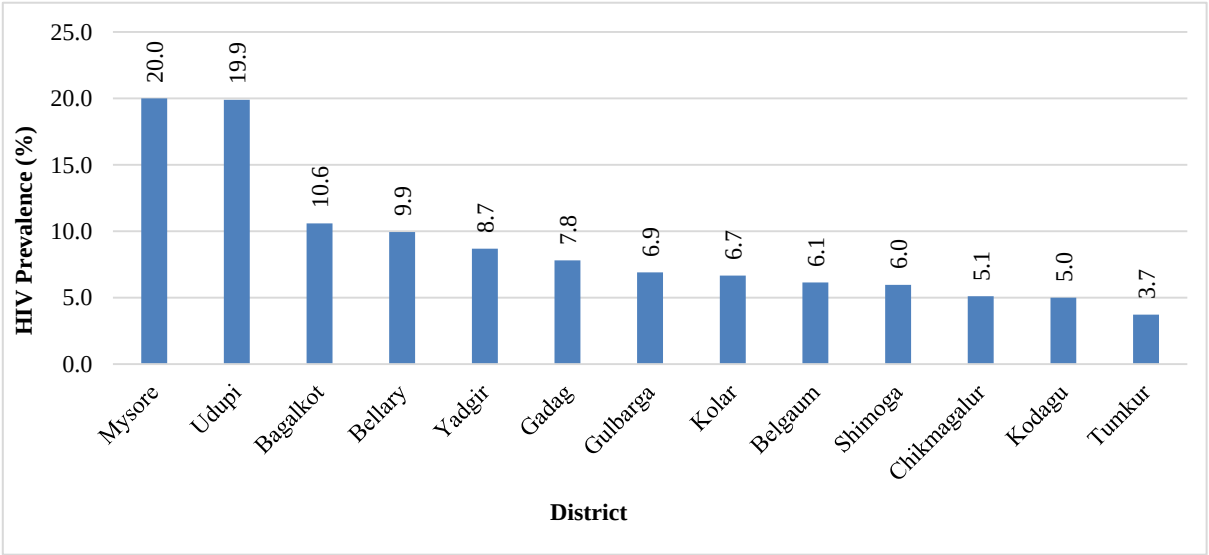

Figure 1: HIV Prevalence among MSMs during 2009-10.

Sociodemographic characteristics of respondents are demonstrated in Table 2.

Table 2: Demographic profile of MSM tested at ICTCs.

Characteristics	Number tested	%
Age group of MSMs		
Less than 20 years	295	10.5
21 to 25 years	686	24.4
26 to 30 years	625	22.3
31 to 35 years	388	13.8
36 to 40 years	318	11.3
41 to 45 years	214	7.6
46 above years	282	10
Total	2808	100
Marital status		
Married	1998	71.1
Single	757	26.9
Divorce/Separated	15	0.5
Widowed	38	1.4
Total	2808	100
Education		
Illiterate	926	33
Up to Primary	888	31.6
Up to Secondary	561	20
College and above	433	15.4
Total	2808	100
Occupation of MSMs		
Daily wages worker	1605	57.1
Salaried	272	9.7
Business	168	6.0
Unemployed	67	2.4
Retired	13	0.5
Student	125	4.4
Others	540	19.2
MSM as profession	18	0.6
Total	2808	100.0
Post- test counselling		
Post- test counselling done and collected report	2800	99.7
Post- test Counselling not done	8	0.3
Total	2808	100

The mean age of MSM was 32 years and the age range were between 15 to 79 years. Among those tested, majority 24.4% were in 21 to 25 years age group, followed by 23.3% in 26 to 30 years age group. Majority of MSMs were married (71.1%), followed by 26.9% were separated. 33% of MSM were illiterate, followed by 31.6% were educated up to primary level and 20% were educated up to secondary level others (15.4%) had higher education.

By occupation 57.1% reported to be daily wages workers, 2.4% were unemployed, and 0.6% reported themselves to be MSM, i.e. sex work as their occupation.

Findings of univariant analysis

Over all HIV prevalence among MSM was 8.6%. These are newly detected HIV positives in year 2009-10. HIV prevalence was 6.9% among MSMs in the age group of 26 to 30 years. With increasing age, the prevalence of HIV was high, up to the age of 45 years. The prevalence of HIV was 13.1%, 12.9% and 17.3% in the age group of 31 to 35 years, 36 to 40 years and 41 to 45 years respectively. Thus, the risk of HIV infection presented an increasing trend accompanying with the increasing age, except for 36 to 40 years age group for which the prevalence was 12.9% (Table 3-7).

Table 3: Age group of MSMs.

	HIV test result		
Age (years)	**HIV positive N (%)**	**HIV negative N (%)**	**Total**
Less than 20	12 (4.1)	283 (95.9)	295
21 to 25	29 (4.2)	6 57 (95.8)	686
26 to 30	43 (6.9)	582 (93.1)	625
31 to 35	51 (13.1)	337 (86.9)	388
36 to 40	41 (12.9)	277 (87.1)	318
41 to 45	37 (17.3)	177 (82.7)	214
46 and above	28 (9.9)	254 (90.1)	282
Total	241 (8.6)	2567(91.4)	2808

χ^2=65.7, df=6, p=0.000 (highly significant).

Table 4: Marital status of MSMs.

	HIV test result		
Marital status	**HIV positive N (%)**	**HIV negative N (%)**	**Total**
Married	176 (8.8)	1822 (91.2)	1998
Single	51 (6.7)	706 (93.3)	757
Divorce/ separated	2 (13.3)	13 (86.7)	15
Widowed	12 (13.6)	26 (68.4)	38
Total	241 (8.6)	2567 (91.4)	2808

χ^2=29.460, df = 3, p=0.0 (significant).

Table 5: Educational level of MSMs.

	HIV test result		
Educational level	**HIV positive** N (%)	**HIV negative** N (%)	**Total**
Illiterate	103 (11.1)	823 (88.9)	926
Up to primary	70 (7.9)	818 (92.1)	888
Up to secondary	35 (6.2)	526 (93.8)	561
College and above	33 (7.6)	400 (92.4)	433
Total	241 (8.6)	2567(91.4)	2808

χ^2 = 12.60, df =3, p=0.006 (significant).

Table 6: Occupation of MSMs.

	HIV test result		
Occupation	**HIV positive N (%)**	**HIV negative N (%)**	**Total**
Daily wages	157 (9.8)	1448 (90.2)	1605
Salaried	18 (6.6)	254 (93.4)	272
Business	10 (6.0)	158 (94.0)	168
Unemployed	7 (10.4)	60 (89.6)	67
Retired	0 (0.0)	13 (100)	13
Student	2 (1.6)	123 (98.4)	125
Others	41 (7.6)	499 (92.4)	540
MSM	6 (33.3)	12 (66.7)	18
Total	241 (8.6)	2567(91.4)	2808

χ^2=29.77, df=7, p=0.00 (significant).

Table 7: Status of post-test counselling.

	HIV test result		
	HIV positive N (%)	**HIV negative N (%)**	Total
Post- test done	241 (8.6)	2559 (91.4)	2800
Post- test not done	0 (0.0)	8 (100)	8
Total	241 (8.6)	2567 (91.4)	2808

Fishers Exact test value =0.753, df =1, p=0.386 (significant).

The prevalence of HIV was twice among divorced/ separated (13.3%) and widowed (13.6%), as compared to the single (6.7%). Among those found HIV positive, men who specified their occupation as sex worker had highest proportion of HIV (33.6%), followed by unemployed (10%) and daily wages worker (9.8%). Illiterate MSMs had higher HIV prevalence (6%), as compared to the other who had some level of education.

Out of 13 districts, the highest HIV prevalence among MSMs was noticed in Mysore (20.1%) district and lowest in Tumkur (3.7%) district of Karnataka (Figure 1).

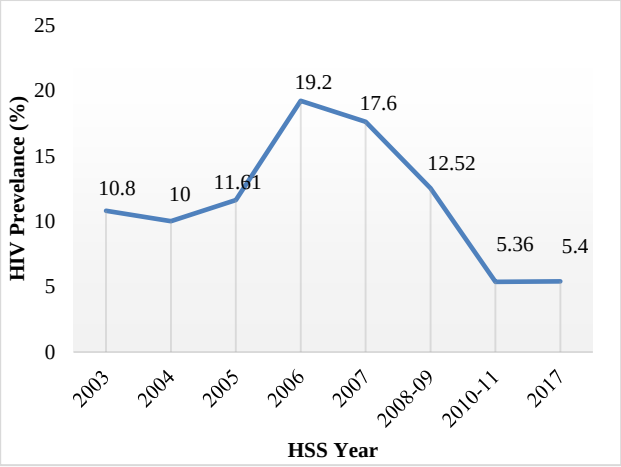

Figure 2: Trend of HIV prevalence among MSM as per HIV Sentinel Surveillance in Karnataka.

Secondary data analysis

As per HIV sentinel surveillance (HSS), the prevalence of HIV was increasing from 2003 (10.8%) till 2006 (19.2%) (Figure 2). From 2007 onwards, there is downward trend in prevalence. In 2017 the prevalence was 5.4%.

DISCUSSION

As per our study, the uptake of HIV testing by MSM in Karnataka during 2009-10 was 17%, as per national testing protocol for HRGs. HIV prevalence among MSM tested at ICTC in Karnataka was 8.6%, which is slightly higher than the finding of HIV prevalence among MSM (5.3%) reported in HSS 2010-11 in Karnataka.[8]

The 15th round of HSS was conducted by National AIDS Control Organization among MSM in 26 states involving 89 sites in 84 districts of India. In total, 12 states recorded high HIV prevalence among MSM i.e. above the national average, with the highest prevalence recorded in the states i.e. Manipur (8.4%), Nagaland (7.7%) and Karnataka (5.4%). Out of thirteen MSM HSS sites in 2017, five high prevalence pockets were in the states of Karnataka, two in Gujarat, two in Maharashtra, one each in Manipur, Nagaland, Punjab and Telangana.[9] Thus, till date the prevalence of the HIV infection still remain high in Karnataka, as compared to the national average and have highest prevalence pockets as compared to any other states in India.

As per Integrated Biological Behaviour Assessment (IBBA) report round -2, a higher proportion of respondents in round two (61% to 98%) than round one (4% to 57%) reported having undergone HIV testing. This proportion in the different states in round two ranged from 61% to 84% in Andhra Pradesh and 83% to 98% in Tamil Nadu. In Mumbai and Pune, the proportion who undertook HIV testing was between 62% and 78%, respectively. This proportion for high-risk MSM in Karnataka for round one was 19% and 33%, respectively, for Bangalore (urban) and the rest of the districts. However, in our study the proportion tested for HIV was 17%, very close to findings of round one.[10]

In our study, proportion of MSMs coming for post-test counselling was 99.7%, the findings are very similar to IBBA round -2, as among the respondents who undertook the HIV test, a majority also reported collecting the test results and a marked increase was seen in this proportion in round two as compared to round one of IBBA.

As per behaviour surveillance survey (BSS) report round 2, the proportion of respondents who reported having undergone an HIV test was highest in Mumbai (69%) and lowest in Delhi (21%). Among states covered, highest proportion of respondents in Goa (69%) and lowest in Uttar Pradesh (3%) reported that they had undergone an HIV test.

Among the cities, out of the respondents who have undergone test, in Kolkata (97.3%), highest proportion of respondents reported to have got the result of their test, while in Bangalore (84.2%) lowest proportion of respondents got to know the result. Across the states, proportion of respondents who reported to have got the result of their test was highest in Goa (97.4%) and lowest in Kerala (23.7%). Percentage of MSM who ever took HIV test in Bangalore were 53% and 49.3% in BSS round 2 and BSS round 1 respectively.[11]

However, findings of our study differ from IBBS survey, among HRGs done during 2014-15 in the different parts of India. As per this survey more than three fourths of MSM (78%) at the national level reported ever testing for HIV. Among them almost all MSM (99%) reported testing in the last 12 months and nearly 88% of MSM had collected their HIV test result when tested last. In our study, 34% were tested in a year and among those tested, 99.7% collected their test report. This difference may be because of better performance at the TIs over the period of time and increase in uptake of services by HRGs in TI program.[12]

As per prevention gap report 2016, globally 8% of the new infections are among the gay men and men having sex with men in 2014 and approximately 20% of MSMs are on ART (survey year, 2013–2015).[13]

Findings of our study are similar to the HIV prevalence of MSMs in China, during 2012-13. The prevalence of HIV was 9.5% (44/463).[14]

However, the prevalence among young MSM in our study is (4.1%) lower as compared to Young MSM (7.6%) reported in Chicago USA.[15]

The study has some limitations; there is likelihood that same MSM would have been tested twice in a year. As HRGs registered at TI NGOs have to be tested twice in a year. MSM would have tested for HIV, without the referral slip of TI NGOs as many of them try to hide their identity while getting tested for HIV. Data regarding syphilis testing and linkages to ART centres would have make this study more robust. However, few of these parameters could not be included in the study.

In summary, the prevalence in MSMs still remains high in Karnataka, as compared to national average. Focused counselling on consistent and correct condom use among men identifying, themselves as sex workers, men solely depending on sex work for their survival, single and divorced men and widowed men can bring down the HIV prevalence among MSMs in Karnataka. Routine data collected by the ICTC counsellor and differential analysis at district level can help program managers to identify, high risk men among the men who have sex (MSM) with men. During inter- surveillance period similar analysis can be done by the districts (DAPCUs) to understand, the prevalence among MSMs as there are limited number of HIV sentinel surveillance sites for MSMs in Karnataka, as compared to the number of Targeted Interventions in the state.

Few HRG TIs participate in HSS and district specific prevalence from HSS may not be available for each district, thus, routine monitoring of ICTC data among the HRG at the district and state level can guide the program managers to intensify the preventive efforts.

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