

Full Length Research Paper

A study on HIV knowledge and preventive behavioral practices among FSW'S in Mumbai

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The prevalence of HIV among female sex workers (FSW) in India is highest in the state of Maharashtra (7.4%). Mumbai, the capital city of Maharashtra, with a large sex industry mainly consisting of brothels, lags behind in the overall average decline in HIV seen in this state over the last decade. Condoms are now widely used by sex workers through the pro-active role of Mumbai District AIDS Control Society (MDACS) and many non-governmental organizations (NGOs), but many associated risk behaviours remain and contribute to the high HIV prevalence among FSW in Mumbai. This community-based descriptive study was conducted to assess HIV/AIDS-related knowledge and sexual risk behaviours among FSW in Mumbai in 2015. Knowledge was assessed using a 'cumulative knowledge score' by taking 18 questions to assess HIV/AIDS knowledge. Sexual behavioural practises among FSW with occasional clients, regular male clients, regular non-paying male partner and non-regular non-paying clients were also assessed separately. Ninety-one FSW working in brothels in Mumbai gave informed consent and were purposively selected to participate in the study. The mean age of the respondents was 32.9, three out of four were illiterate and 62% were either married or had a live-in partner. 85% of the study population reported above average satisfactory score (score \geq 8) on cumulative knowledge on HIV/AIDS and a nearly 100% used condom both with regular and occasional clients. The study revealed some risk factors among FSW and their regular non-paying partners that need to be urgently tackled. Most of the FSW (86%) use more than one condom during a sexual act, and it was also found out that they tend to engage in risky sexual practices with their regular non-paying partner without condom, thinking that it was not necessary.

Key words: HIV, female sex workers, knowledge, risk behaviour, condom use, India, Mumbai, brothels.

INTRODUCTION

Globally, India hosts the third-highest number of people living with HIV (PLHIV) in the world, over 2.1 million despite a very low prevalence rate of HIV (2.9%) in the general population (NACO, 2016a). Seven states in India account for two-thirds of the total number of PLHIV in the

country, including the state of Maharashtra with over 310,000 PLHIV (NACO, National Institute of Medical Statistics (NIMS) and ICMR, 2016). India has seen an overall reduction of 66% in new HIV infections over the last decade, from 270,000 new infections in the year

2000 to 86,300 in 2015 (NACO, NIMS and ICMR, 2016). It is assumed that this reduction is a result of various targeted interventions and scaled-up prevention strategies under the National AIDS Control Programme (NACP) (NACO, 2015). The number of AIDS-related deaths has also declined after a decade of access to antiretroviral therapy (ART), introduced in 2004 and scaled-up throughout the country. However, only an estimated 35% of PLHIV are on first-line ART (747,000 in 2014) at 519 ART centres across the country. These make up 50% of those diagnosed. Thus the majority of PLHIV in India are not yet on ART and still do not know their HIV status (WHO, 2015).

An important route of transmission in India is the sex industry, which includes a large number of people with high-risk behaviours, especially in areas with large urban populations. Female sex workers (FSW) and their clients belong to the core high-risk groups in India (NACO, 2015). Recent studies estimate that the number of sex workers in India range from 860,000 (NACO, 2015) to 3 million (Dasra, 2013). The most recent National Integrated Biological and Behavioural Surveillance from 2015, showed that 90% of FSW had been exposed to one or more HIV-related services during the 12 months prior the survey and that the HIV prevalence among FSW at national level has declined considerably over the last years, from 5.0% in 2007 to 2.2% in 2015 (NACO, 2016b).

Only six Indian states (Maharashtra, United Andhra Pradesh, Manipur, Mizoram, Nagaland and Karnataka) have HIV prevalence above 5% among FSW (NACO, 2016b). Maharashtra has the highest prevalence of HIV (7.4%) among FSW, more than 23 times the state's general population (0.32%) (NACO, 2016b). Over 14% of all women in the commercial sex industry in India work in Maharashtra (Dasra, 2013). In Mumbai, the capital city of Maharashtra where the largest brothel-based sex industry in India is located, the HIV prevalence among brothel-based sex workers has remained high or even increased (28% in 2007 to 35% in 2009) despite preventive interventions at the national level (ICMR and FHI 360, 2012). As a result of the proactive role of peer educators and Non-Governmental Organizations (NGOs), knowledge levels of HIV have increased and behaviours have changed. Condom use is now widely practiced among FSW but the mean number of clients per week for FSWs in Maharashtra is 16.7 higher than in all other states (Adhikary et al., 2012). This indicates the pitfalls in current preventive strategies also given the consistently high number of new HIV infections. The current main strategy of India's Phase 4 prevention programme (2012-2017) is to expand information, education and communication services with a focus on

behavioural change among FSW (NACO, 2015). The purpose of this study is to assess the knowledge of HIV among FSW and the extent to which this knowledge has been translated into actual preventive behavioural patterns in this key population something which is of high importance for controlling the HIV epidemic in India.

METHODOLOGY

The research was a community-based cross-sectional descriptive study design to collect interview data from 91 brothel-based FSW from January to March 2015. The respondents were identified using purposive sampling technique. The brothels were conveniently selected from three different brothel areas in Mumbai based on key informant (outreach workers) suggestions from NGO. The inclusion criteria were: Being a brothel-based FSW aged 18 to 50 years located in Mumbai. FSWs aged below 18 and above 50 were excluded from the study.

A pilot study was carried out among ten respondents using semi-structured questionnaire to test the feasibility of the study and to finalize questionnaire. A structured face to face interview was conducted by a male researcher (first author) in a private room within the NGO facilities. The average duration of the interviews was 20 min. There was less than 2% non-participation rate which includes respondents who interrupted in between the interviews due to unwillingness to answer the questions.

The questionnaire was divided into three main parts: Socio-demographic profile, knowledge regarding HIV and actual HIV preventive behavioural practices. There were 67 questions in total including 20 questions to assess knowledge of HIV/AIDS. The knowledge section was again sub-divided into general awareness, knowledge regarding transmission, misconceptions and knowledge regarding treatment. Response options included: Yes/no/don't know/don't want to answer. The "don't know" option was always coded as an incorrect as it also denotes that the respondent is unaware/ lacks knowledge on that aspect of HIV. A self-constructed cumulative knowledge score instrument measured the knowledge about HIV/AIDS. It was created by adding up the number of correct answers (1 point per correct reply/0 for incorrect or don't know) to 18 selected questions. The maximum score was thus 18 and the minimum was 0. The range of scores were classified into unsatisfactory (0 to 3), below satisfactory (4 to 7), satisfactory (8 to 11), above satisfactory (12 to 15), and, high knowledge score (16 to 18).

There were 35 questions on sexual behavioural practises among FSW with once-off/ occasional clients, regular male clients who pays, regular non-paying male partner (husband, live-in-partner, lover or boyfriend) and non-regular non-paying clients (police, pimps, etc.). Health seeking behaviour of the FSW was also assessed in this section. A descriptive statistical analysis was done in the study and no inferential statistical tests were used, mainly due to the low sample size.

Ethical clearance was sought from the School of Health Systems Studies, Tata Institute of Social Sciences, who were part of the Institutional Review Board (IRB). The approval and consent from the NGOs working in this area were also taken before the study. Written informed consent was taken from all the study participants before study. All personal information of the respondents such as name and the area are kept anonymous and confidential in locked compartment, accessible to the first author only. All questions had a

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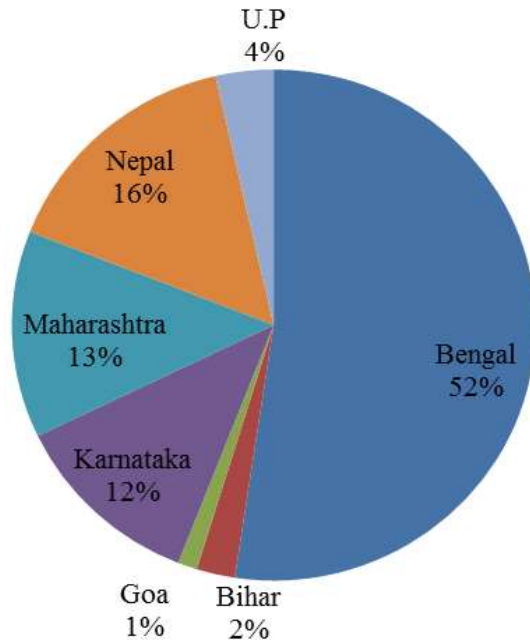


Figure 1. Native state of FSW participated in the study (N=91).

“don’t want to answer” option, and the interviewees were informed that they were free to interrupt the interview or refuse to answer any question without any negative consequences. The study participants were not given any monetary incentives for participating in the study.

FINDINGS

Socio-demographic profile

Out of the 91 respondents, the majority of the FSWs (52%) came from West Bengal, followed by Nepal (16%) and the Indian states of Maharashtra, Karnataka, Uttar Pradesh, Bihar and Goa (Figure 1). The socio-demographic characteristics of the respondents are shown in Table 1. The mean age was 32.9 years; the majority were Muslim, and 62% were either married or had a live-in partner. Three out of four respondents were illiterate, and 80% of the women earned between 0.5 and 5 USD per day (15 to 150 USD per month). Most of the FSWs had their first sexual debut at a very young age (70% had before 18 years).

HIV testing and status

All the respondents (100%) had done at least one HIV test. Slightly over half (52%) had been tested at their initiative while the rest had been tested by NGO members who came by the brothels to offer HIV screening. All the FSWs (100%) also knew their HIV test

results. The prevalence of HIV infection among study population was 7.6% (7/91 self-reported cases) which is higher than the national and state prevalence rate. This information was collected from previous test results and cross checked by principal investigator. Most of the FSWs said they went for HIV screening once every three to six months, but more than 50% of the respondents were unaware of their regular non-paying partner’s HIV status, and only 56% of them asked about the HIV status of clients.

For most of the respondents, sex work was their main source of income, and only 7% had other jobs apart from sex work. Even though 62% have/had their husband or live-in-partner, only 25% of the FSW received any financial help from their live-in partner or husband. The mean duration of sex work was 11 years, and most of them planned to continue in the profession to take care of their children. Ninety percent of all interviewed FSWs had at least one child. The most common reason for entering into sex work was poverty and the need to contribute to household expenses; the second most common reason was having been forced into sex work by others (Figure 2).

Knowledge

All the respondents in the study had heard about HIV/AIDS, but all of them had received this knowledge from an NGO and not from government sources. Most of the respondents were aware of common modes of transmission, and also about treatment for HIV/AIDS. The main knowledge gaps included how to access treatment, breastfeeding as a mode of transmission and whether HIV can be transmitted through sharing a meal or through coughing and sneezing. The complete descriptive statistical analysis of the knowledge analysis is given in Table 2.

Cumulative knowledge analysis

The self-constructed cumulative knowledge score instrument yielded the following findings. It was revealed that 35% of the respondents had high knowledge and 84% had a cumulative knowledge score above the ‘satisfactory’ level. About 16% of respondents fell in the unsatisfactory category. The cumulative knowledge level among FSW’s regarding HIV/AIDS is represented in Figure 3.

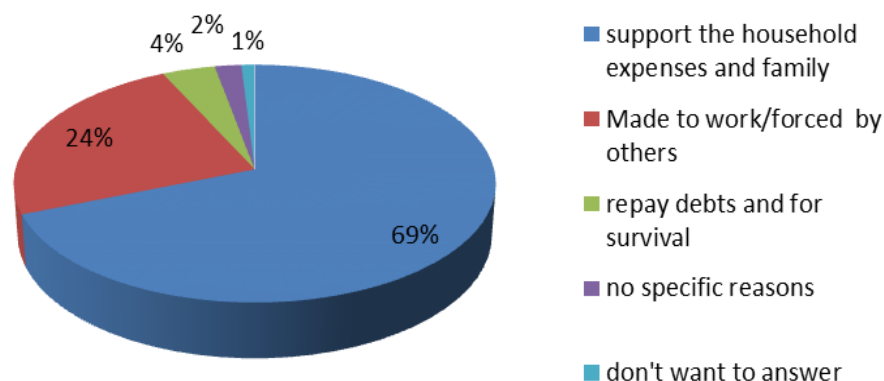
Behavioural practises

All the respondents bought their condoms free of charge from an NGO (associated with MDACS), and almost 90% were comfortable with this. All respondents were satisfied with the current supply process of condoms through NGO

Table 1. Socio-demographic characteristics of female sex workers in Mumbai (N=91).

Parameter		N	%
Age* (years)	≤30	54	59
	>30	37	41
Religion	Hindu	42	46
	Muslim	48	53
	Christian	1	1
Marital status	Married	44	48
	Live-In partners	13	14
	Separated /divorced	22	24
	Widowed	8	9
	Single	4	5
Children	No	9	10
	Yes	82	90
Education	Illiterate	66	73
	Primary	13	14
	Secondary	12	13
Monthly income (Rupees)	1000-10000 (15-100USD)	73	80
	10001-20000(151-299USD)	14	15
	20001-30000(300-450USD)	4	5

*The mean age (years) of the sample is 32.9 (SD= 7.2).

**Figure 2.** Reasons given by FSW for entering into sex work (N=91).

and had never faced condom shortage.

More than 95% of the respondents had used a condom at every sexual intercourse with occasional clients during the last three months. The respondents reported a 100% condom usage during the last sexual act (last one month). Most of the time (in 87% of the cases), the FSW initiated condom use, and she was the decision-maker. A similar pattern was seen regarding condom practice with

regular clients. Thus, both with occasional (once-off) clients and regular paying clients, the FSWs consistently used condom.

In most of the cases (96%) respondents also said they were able to refuse sex if the client refused to use condoms without any second thought. The rest said that they used female condom during this scenario. This reflects an increased awareness among them about the

Table 2. Knowledge of HIV/AIDS among FSW in Mumbai, India (N=91).

Statements	Yes (%)	No (%)	Don't know (%)
A healthy-looking person cannot be infected with HIV, the virus that causes AIDS	24	56	20
HIV reduces our immunity to fight against infections *	54	3	43
Correct and consistent condom use is the best method of HIV prevention	97	0	3
People can protect themselves from HIV/AIDS by having one uninfected faithful sex partner	68	3	29
Having sex with more than one partner can increase a person's chance of being infected with HIV	76	4	20
A person may get HIV/AIDS by getting injections with a needle that was already used by someone who was infected	89	2	9
Receiving a transfusion, with blood infected by the AIDS virus, is one way to get the disease	83	2	15
A person may get AIDS by sharing a needle with a drug abuser who has the disease.	75	15	14
A pregnant woman infected with HIV or AIDS transmit the virus to her unborn child	80	7	13
A woman with HIV or AIDS transmit virus to her new born child through breast feeding	63	16	21
A person gets HIV/AIDS by sharing a meal with someone who was infected	23	63	14
Coughing and sneezing do not spread HIV	56	26	18
A person get HIV/AIDS from mosquito bites	27	54	19
A person can get HIV by sharing a glass of water with someone who has HIV	27	56	17
If you shake hands with someone who has AIDS you can get the disease	11	71	18
There is clinical treatment available for HIV	67	8	25
Ever heard of ICTC (Integrated Testing and Counselling Center) -where one can get information on HIV/ AIDS and get tested for HIV/AIDS*	75	5	20
Ever heard about ART Centers-where one gets medicines for HIV/AIDS*	46	10	44

*For all the statements with a * mark, the sample size is 90 (N=90).

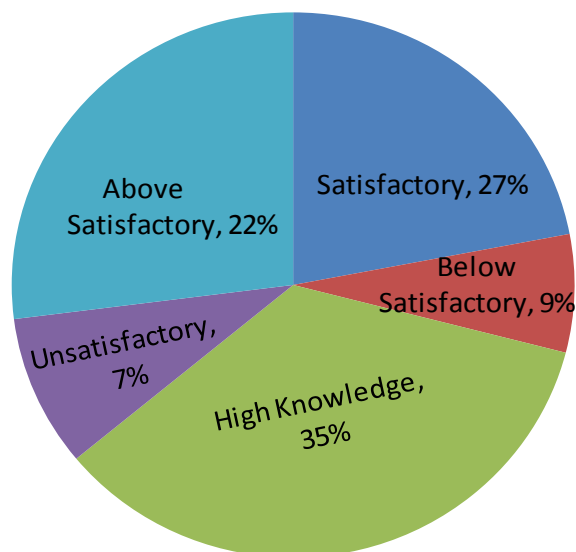


Figure 3. Pie-chart showing percentage of FSW belonging to each knowledge category (N=91).

importance of condom usage and also empowerment among FSW regarding the decision-making process.

The relationship between knowledge about condom

use and actual number of condoms used between the FSWs and clients per sexual act was also looked upon. Nearly 97% of the respondents were aware of the fact that condom use can prevent HIV transmission, but only 14% practised appropriate condom use, that is, one condom per sexual act. The remaining 86% FSWs knew that condoms prevent HIV infection, but preferred and allowed the client to use more than one condom per sexual act (one on top of the other) which is a faulty practice. The FSWs had been informed by their peers and NGO workers about correct condom use, but they were still worried that using one condom could increase the risk of transmission due to possible tearing of the condom and therefore preferred to use two or more condom since they believed this would enhance protection.

Sexual practices with regular non-paying partners (Table 3), including husbands, live-in partner, lovers, boyfriends etc. were quite different compared to those practised with clients. Sixty-four percent (N=58) of the respondents had a regular male partner who did not pay for sex. Among this category (N=58), 36% of those with regular non-paying partner knew that their partner had another partner while 14% felt uncertain whether their partner also had other partners.

Despite the high prevalence of multiple partnerships

Table 3. Sexual practices of FSW with regular non- paying partners (N=58).

Sexual practices with regular non- paying partner (N=58, 64%)		Percentage
Condom Usage during last sexual act (1 month)	Yes	22
	No	76
	No sexual intercourse with partner	2
Decision-maker in condom use	Joint decision	64
	Decision taken by women herself	36
Condom usage during last three months	Never	57
	Sometimes	24
	Most of the time	14
	Every time	3
	No sexual intercourse with partner	2
Reason for not using condom	Partner objected	16
	Used other contraceptives	3
	Didn't feel it is necessary	79
	Others	2

among the regular sex partners, more than half (57%) of the respondents said they had never used a condom during sex with their regular non-paying partners in the past three months. Only three percent of the respondents used a condom every time. Three-quarters (76%) of respondents had not used a condom during their last sexual act with a regular non-paying partner over the last one month.

With their regular non-paying partners, these women had much less decision-making power than with clients. Only 36% FSWs reported that decision about condom use was taken by her and in rest of the cases the decision was taken jointly with the partner. Also, 79% of FSWs informed that condoms were not used consistently (last three months) with regular non-paying partner since they thought it was not necessary to use condom during a sexual act with husband/live-in partner. In 16% of cases, condoms were not used because their partner refused. When regular non-paying partner objected to use condom against her wish, refusal of sex happens only in 7% cases, which is very low compared to occasional/regular clients.

In the current study, none of the FSWs had sex with occasional non-paying partners in the last few years (2 to 3 years). Policemen and pimps often used their services but usually also paid for them accordingly.

DISCUSSION

The prevalence of HIV infection in this study population was 7.6% which is higher than the national and state prevalence rate. Most FSWs in this study had their first sexual debut at a very young age, and the majority were

illiterate, meaning they had few other options to support themselves. Similar observations are seen in many previous studies among FSW (Dandona et al., 2006, Hemalatha et al., 2011). Most were in the sex trade for economic reasons, to support their families and children financially. However, a fair share had also been forced into sex work from a young age, and some stayed due to debts.

Even though the cumulative knowledge among FSWs in this area appears to be satisfactory, there were knowledge gaps about HIV transmission including breastfeeding as a mode of transmission, sharing meals etc. which may affect social interactions negatively. This may also create uncertainty regarding the perceived risk of HIV among their children, which could influence risk/protective behaviours. On the positive side, 100% had used a condom during their last intercourse with a paying customer and condom use was very high both with regular and non-regular clients. Most of the women felt they had the decision-making power to suggest and decide about condoms.

The almost same pattern was noted by the 'Integrated Behavioural and Biological Assessment' (IBBA) survey conducted among FSW in Maharashtra. It reports that 97% and 94% brothel-based FSWs used a condom every time with occasional and regular clients respectively in Mumbai and 100% used condom during the last sexual act with these two client categories (ICMR and FHI 360, 2012).

However, in the study, 86% of respondents used more than one condom at the same time, thinking that it will protect them from a possible tear in condoms. In fact, this practice increases the risk of sexually transmitted infections including HIV. Peers and outreach workers

should address this issue by imparting correct knowledge and cultivating a correct practice among them. NACO also envisages targeted interventions among the high-risk populations that include behaviour change, health care, treatment of sexually-transmitted diseases, provision of condoms, and creating an enabling environment for behaviour change to reduce the incidence of HIV.

The study also found that FSWs tends to engage in risky sexual practices with their husbands/lovers or boyfriends. Most of them did not use a condom with such non-paying regular partners thinking that it was not necessary, and also because some partners refused to use condoms and the women had a much lower decision-making power in intimate relationships. A study by Hemalatha et al., (2011) also yielded similar results. According to their study, the principle reason could be that it may signal mistrust in the relationship between FSWs and the non-commercial partner. This is particularly serious given that, as many of these regular male partners also have other partners (36% of FSW's were fully aware, and 14% did not know if their husband/boyfriend/lover had other partners).

The 4th phase of the National Aids Control Program (NACP) is currently being implemented across India, but there is a need to focus on certain aspects. There needs to be concrete and creative efforts to bring regular non-paying partners for HIV screening. Creating positive incentives for couple testing, user-friendly opening hours, mobile testing units that are male friendly are few strategies which can be introduced. The FSWs should be educated and empowered to bring their husbands for HIV screening.

Keeping the perspective of poverty and the high risk in some contexts of being lured and forced into sex work, targeted interventions to educate and support young girls who are at risk of being recruited or forced into sex work is vital. The support mechanism should be social, financial as well as psychological to empower vulnerable young women to stay in school and to meet positive role models. Attempts are also needed to educate young girls in their early teens about HIV prevention programmes, universal sex education etc.

Limitations

The study was conducted in an already among sensitised population within an NGO appears to be a limitation (selection bias). Even then it throws light into many disturbing realities. The sample size was also not so large.

Conclusion

Condom usage, decision-making skills and condom negotiation skills with the regular and one-time client is

excellent among the study population which is indeed a good sign. However, special efforts should be made to improve condom usage and decision-making skills in sexual encounters with regular non-paying partners including husbands/lovers. The NGO's working for FSW's should create awareness about the importance of using condoms for every penetrative sexual act irrespective of the type of sexual partners. There is need to undertake special efforts by identifying and involving outreach workers' or peers in reaching out to this key population and organize preventive interventions along with rehabilitation by providing them meaningful employment. These women can be motivated and recruited as peer educators for the FSW community. Thus it gives them employment and all the more increases their knowledge base.

Conflicts of Interests

The authors have not declared any conflict of interests.

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