RESEARCH ARTICLE

# Sexual Behaviour, Knowledge, Attitude and Practices Regarding HIV/AIDS amongst Female Sex Workers (FSWs) in Red Light Area of Mumbai City

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## ABSTRACT

**Background:** HIV/AIDS is not only a public health problem but also a social, political and economic challenge. The key concern with HIV infection is not only about infected person, but also about the chain of people infected by that individual and that h/she will probably infect in the future. The prevalence of HIV infection in India has been steadily increasing over the past few decades. Commercial sex workers and their clients are at highest risk for HIV infection and transmission.

**Objective:** The present study describes the sexual behaviour, knowledge, attitude and practices in context to HIV/AIDS amongst female sex workers (FSWs) in red light area of Mumbai city.

**Materials and Methods:** A cross-sectional community based study was conducted among female sex workers in red light area of Mumbai city during period of October 2008 to September 2009. A total 103 female sex workers were selected and interviewed. The statistical analysis was performed using SPSS software (version 13.0).

**Results:** In the present study, the mean age of the FSWs was 26.4 ± 5.2 years and 43.8% belonged to lower middle class socio-economic status. Most of the FSWs responded poverty (84%) and broken family (76%) as the main reasons for resorting to the sex trade. Majority of the FSWs (72.8%) were illiterate and more than half (67%) did not have any children. Most of the FSWs (84.5%) were aware about HIV/AIDS but only 33% were aware of the status of their partner. Only 13.6% FSWs knew that HIV could be transmitted to the child through breast feeding from an infected mother.

**Conclusion:** Misconception about HIV was very high. Most of the FSWs in the present study had first sexual debut at a very young age. Routine screening and periodic surveys are warranted in order for early detection of infections including HIV and other STDs.

**Key Words:** Female Sex Workers; HIV/AIDS; Knowledge; Attitude; Practice; Sexual Behaviour

## INTRODUCTION

The HIV/AIDS epidemic is one of the world's most serious public health and social problems. India, the third largest economy in Asia and eleventh largest of the world,[1] houses the second largest population around the globe[2] with more than one billion people, half of whom are adults in the sexually active age group. Moreover, the prevalence of HIV infection in India has been steadily increasing over the past few decades.[3-4] Thus, even with a small increase in India's HIV/AIDS prevalence rate thereby would imply a significant component of the world's HIV/AIDS burden. According to the data available from National

Family Health Survey-3, 2005-06, 2.5 million people in India are infected with HIV.[5] The first case of HIV infection was reported in Chennai in 1986 which has since spread to all states and union territories. At present, India has the third largest number of HIV & AIDS cases after South Africa and Nigeria. Sentinel surveillance conducted by the National AIDS Control Organization (NACO) shows that in the general population HIV prevalence is low (0.25-0.43%), but among high-risk groups, HIV prevalence is much more. In at least five states, HIV prevalence among injecting drug users (IDU) is greater than 10%, with a high of 24% of IDUs are HIV positive in Maharashtra. Prevalence is also elevated among female sex workers and men who have sex with men.[6] Commercial sex workers (CSW) and their clients are at the highest risk for HIV infection and transmission.[4,7] Certain states in India viz. Andhra Pradesh, Tamil Nadu, Maharashtra, Karnataka, Nagaland and Manipur have been reported to have high number of HIV infected population in India.[3] Though there are many Indian studies on CSWs and HIV prevalence and about their high risk behavior, but little is known about their knowledge, attitude and practices followed by them. Perhaps, such a data can be used as baseline for prevention of number of entrants in sex work and providing a safer and enabling environment for those invariably entering the sex trade. Hence, the present study was conducted in order to assess the socio-demographic profile of the women engaged in commercial sex in Mumbai city and to investigate their behavioral patterns and their knowledge, attitude and practices so as to formulate appropriate intervention strategies to prevent the spread of HIV/AIDS across the country.

## METHODS

A cross-sectional community based study was conducted from October 2008 to September 2009 in red light area of Mumbai as notified by the NGOs. The area has been a hub of commercial sex workers and alleged prostitution for decades and has one of the largest fixed CSWs. The study population was comprised of 103 female sex workers, ages 18 and above, who were available during study period and given a written informed consent to participate; irrespective of religion, ethnicity, and belonging to different states of the country and residing in the study area were enrolled for the study. Participants were excluded from the study if they were not available during the study period and unable to give a written informed consent. Institutional Ethical Committee (IEC) approval was sought from the T.N. Medical College, Mumbai. Written informed consent for participation was obtained from each respondent. For the behavioral assessment, face-to-face interviews were done with the FSWs using a semi-structured questionnaire. The questionnaire covered number and types of sexual partners, condom use with different types of partners, knowledge and attitudes towards HIV/AIDS, and perception of HIV risk was assessed based on questions such as ever heard of HIV, misconceptions about HIV, ever undergone HIV testing, feel at risk of being infected. Sexually Transmitted Diseases (STDs) knowledge was assessed based on the ability of the FSWs to correctly identify at least two of the six most common symptoms. The interview schedule was developed in English and translated into Hindi, the local language of the region. To ensure confidentiality, the name of respondent and other parameters that would disclose the identity of the respondent was deleted. Prior to interviewing, each included participant was briefed on the nature of the study and confidentiality. Socio-economic status was assessed by the modified BG Prasad classification.[8] The statistical analysis was performed using SPSS software (version 13.0). All values are expressed in the form of frequency, percentages, mean and standard deviation and the chi-square test was applied wherever necessary. Statistical significance was set at $P \leq 0.05$.

## RESULTS

The socio- demographic profile and behavioral pattern of the study participants is shown in Table 1. The mean age of the FSWs was 26.4 ± 5.2 years. Most of the sex workers (43.8%)

**Table-1: Socio-Demographic Characteristics and Behavioral Pattern about HIV/AIDS among Study Population (Data in parenthesis indicate %)**

| Particulars | | Number (n=103) | P- value |
|---|---|---|---|
| **Socio-Demographic Characteristics** | | | |
| Age (in years) | 19 – 23 | 18 (17.5) | < 0.0003 |
| | 24 – 28 | 32 (31.1) | |
| | 29 – 33 | 29 (28.1) | |
| | ≥ 34 | 24 (23.3) | |
| Socioeconomic status┼ | Upper | 12 (11.6) | < 0.0001 |
| | Upper Middle | 18 (17.5) | |
| | Lower Middle | 45 (43.8) | |
| | Upper Lower | 12 (11.6) | |
| | Lower | 16 (15.5) | |
| Marital Status | Married | 24 (23.3) | < 0.0001 |
| | Divorced/ Separated/Widow | 59 (57.3) | |
| | Single, never married | 20 (19.4) | |
| Mother Tongue | Bengali | 52 (50.5) | 0.246 |
| | Telugu | 16 (15.5) | |
| | Kannada | 12 (11.7) | |
| | Marathi | 14 (13.6) | |
| | Others | 9 (8.7) | |
| Education | Illiterate | 75 (72.8) | < 0.0001 |
| | Primary | 11 (10.7) | |
| | Middle | 11 (10.7) | |
| | Secondary | 06 (5.8) | |
| | Graduate | 0 (0.00) | |
| Religion | Hindu | 56 (54.4) | 0.74 |
| | Muslim | 29 (28.2) | |
| | Christian | 12 (11.6) | |
| | Others | 06 (5.8) | |
| Family Type | Nuclear | 53 (51.5) | 0.864 |
| | Broken | 47 (45.6) | |
| | Joint | 3 (2.9) | |
| No. of Children | No Child | 69 (67.0) | 0.118 |
| | ≥ 1 | 34 (33.0) | |
| **Behavioral Pattern** | | | |
| Age at starting sexual (in years) | < 18 | 56 (54.4) | - |
| | 18 – 24 | 25 (24.3) | |
| | > 24 | 22 (21.3) | |
| | Age at First Sex (Mean ± SD) | 20 ± 5.9 | |
| | Age at Sex Work Debut (Mean ± SD) | 21 ± 8.2 | |
| | Duration since Sex Work Debut (Mean ± SD) | 8.4 ± 2.6 | |
| Client volume per week # | < 5 | 46 (44.7) | - |
| | 5 – 9 | 39 (37.9) | |
| | > 9 | 18 (17.4) | |
| | No. of clients per week (Mean ± SD) | 7 ± 2 | |
| | No. of clients per day (Mean ± SD) | 3 ± 1 | |
| With occasional clients # | Condom use in last sex | 78 (75.7) | - |
| | Consistent condom use | 25 (24.3) | |
| With regular clients # | Condom use in last sex | 65 (63.1) | - |
| | Consistent condom use | 38 (36.9) | |
| Personally known someone with HIV # | Yes | 35 (33.9) | - |
| | No | 68 (66.1) | |
| Work during menses # | Yes | 74 (71.8) | - |
| | No | 29 (28.2) | |
| Sexual practices # | Vaginal | 48 (46.6) | - |
| | Oral | 29 (28.2) | |
| | Oral, Anal | 26 (25.2) | |

┼-Modified BG Prasad classification [8]
# - In preceding six months

belonged to lower middle class socio-economic status as per the modified BG Prasad classification and with more than half (57.3%) of the study population either divorced/widow or separated from their male counterpart and family. Most of the workers interviewed responded poverty (84%) and broken family (76%) as the main reasons for resorting to the sex trade. Most of the workers (72.8%) were illiterate and more than half (67%) did not have any children. A staggering number of the workers (54.4%) had their first sex encounter below the adult age (<18 years) with mean age at first sex being 20 ±5.9 years. Mean age at sex work debut was 21± 8.2 years and the mean duration since sex work debut being 8.4±2.6 years. Less than half the study participants (44.7%) reported to have less than 5 clients per week with a mean no. of clients per day being 3±1. A small proportion of the study population reported of having used condoms consistently with their occasional (24.3%) and regular clients (36.9%) in the preceding six months. Majority (71.8%) of the FSW's reported of having sex with their clients even during their menses and almost half (46.6%) of them were indulged in vaginal intercourse, others indulging in oral without/with anal sex.

Knowledge, attitude and practices of the FSWs are depicted in Table 2. Most of the FSWs (84.5%) were aware about HIV/AIDS and television was the common source of this information but only 33% were aware of the status of their partner. About more than half the FSWs (55.3%) knew about all modes of HIV transmission and one third (33%) were unaware of the any of the modes through which the virus infects human beings. About one third of the workers (31.1%) knew about blood transmission as a possible transmission mode of the virus whereas only 27.2% knew about contaminated syringes and blades as a possible source of infection. A small number (13.6%) knew that HIV could be transmitted to the child through breast feeding from an infected mother. The myths governing the transmission of HIV/AIDS was also evaluated with 33.1% of the FSWs having the perception that HIV could be transmitted by eating/playing/staying /shaking hands with infected, 27.2% by sharing

utensils (plates, cups spoons with an infected person) and 17.5% believing that mosquito/insect bite could also be a possible source of virus transmission. More than half of the FSWs (56.3%) were aware that HIV/AIDS could be prevented and 44.7% were even aware of atleast 2 or more symptoms/signs of STDs.

**Table-2: Knowledge, Attitude and Practices about HIV/AIDS among Study Population (Data in parenthesis indicate %)**

| Question on Knowledge, Attitude and Practices | | Number (n=103) | p-value |
|---|---|---|---|
| **Knowledge** | | | |
| Have you heard of HIV/AIDS and what was the commonest source of this information | Yes (by television) | 87 (84.5) | <0.0001 |
| | No | 16 (15.5) | |
| Knowledge about HIV status of their partner (living-in client/husband | | 34 (33.0) | 0.0008 |
| Modes of HIV transmission $ | Knows all | 57 (55.3) | - |
| | Unprotected sex with an infected person | 69 (67.0) | |
| | Blood transfusion | 32 (31.1) | |
| | Contaminated instruments like syringes, clippers, blades | 28 (27.2) | |
| | Child can get infected with HIV through breast feeding | 14 (13.6) | |
| | Don't know | 34 (33.0) | |
| Aware that HIV/AIDS could be prevented | | 58 (56.3) | 0.2370 |
| Aware of at least 2 STDs symptoms/signs | | 46 (44.7) | 0.3245 |
| Myths about transmission of HIV/AIDS $ | Sharing utensils (plates, cups spoons with an infected person) | 28 (27.2) | - |
| | Sharing towels, pants, under wears | 22 (21.4) | |
| | As punishment for past misdeeds | 12 (11.6) | |
| | By eating/ playing/staying/shaking hands with infected | 34 (33.1) | |
| | Via mosquito/insect bite | 18 (17.5) | |
| | A cure for AIDS is now available in India | 22 (21.4) | |
| **Attitude and Practices** | | | |
| Will work with clients even after positive status | Yes | 87 (84.5) | <0.0001 |
| | No | 16 (15.5) | |
| Reasons for working/ not working after positive status | To earn money | 86 (83.5) | <0.0001 |
| | Fear of HIV spread | 14 (13.6) | |
| | No one to take care | 03 (2.9) | |
| Will work with clients while having genital lesions | Yes | 90 (87.4) | <0.0001 |
| | No | 13 (12.6) | |
| Reasons for working/ not working with clients with genital lesions | To earn money | 76 (33.8) | <0.0001 |
| | Painless lesion | 09 (8.7) | |
| | Unaware of complications | 05 (4.9) | |
| | Fear of acquiring HIV | 07 (6.8) | |
| | Dirty feeling | 06 (5.8) | |
| Type of first exposure (first intercourse in life) | Premarital | 28 (27.2) | <0.0001 |
| | Marital | 75 (72.8) | |

$ -Multiple response

## DISCUSSION

This study evaluated the knowledge, attitude and practices followed by the female sex workers in the red light area of Mumbai and their behavioral pattern. This study highlights the lacunae of knowledge in the FSWs and their myths associated with HIV/AIDS.

### Socio-Demographic Characteristics

Most FSWs in the present study had their first sexual debut at a very young age and started sex work at about 4-5 years later. Similar observations were made by Hemalatha R et al[9] and in a survey carried out in 2006.[10] The major reason for the FSW's in our study, resorting to commercial sex trade was because of their poor socio-economic status and broken family. Most of the FSWs had migrated from different states of India. Similarly a study done by Pal D et al[11] at Kolkata among sex workers had found that the majority of the sex workers belonged to various regions of India with most from Bengal (52%), Andhra Pradesh (16%), and

Karnataka (12%). A similar demographic profile was observed in the female sex workers in our study group. Nepal, Bengal, Bangladesh are major areas involved in sex trafficking and Mumbai being the economic capital with better earning prospectus, is the destination for most. Also the educational status of the FSWs in our group was consistent with the findings of Pal D et al[11] suggesting illiteracy as one of the vulnerable factor for resorting to the sex trade as a profession.

### Knowledge about HIV/AIDS

Most of the sex workers (84.5%) were aware of HIV/AIDS, while only 55.3% were aware of all the possible modes of transmission of HIV and 56.3% of these had correct knowledge of its prevention. This percentage is much higher than found by Paul D et al[12] where the knowledge of STD/HIV infection was quite low (49.48%) of the CSWs enrolled and around 49.6% knew that HIV/STD could be prevented by condom use. Our findings also suggest that the myths revolving around the possible transmission of the HIV is high and most of the FSWs were ignorant about the actual modes of transmission, even though they knew about AIDS.

### Attitude and Practices

In our study, only one third of the FSWs practiced using condoms with their regular clients. Similar observations were made by Hemalatha R et al[9] in their study. A cochrane review indicates that consistent condom use results in 80% reduction in HIV incidence.[13] These issues about using contraceptives, barrier in particular, is necessary in reduction of spread of the disease. Also most of the FSWs continued their sexual practice irrespective of presence of any genital lesions in order to earn a living for their family. This highlights the need to create employment opportunities for female sex workers in order to help them give up this sex trade.

### Limitations of the Study

The major drawback of the study was that it was not feasible to enroll the entire female sex workers population for the study due to limited resources and resistance from brothel owners. Furthermore, it cannot be denied that the street based sex worker's knowledge and practices and their socio-demographic profile may differ from these findings as it was not possible to include them because of their migratory nature, odd working hours and time frame of the study. Perhaps, the economic status of all the FSWs enrolled could not be validated as few of the respondents reluctantly disclosed their approximate per capita income and did not reveal the exact money paid by their clients.

## CONCLUSION

Routine screening and periodic surveys are warranted in order for early detection of infections including HIV and other STDs. Counseling and partner notification should be done along with the management of RTI/STIs symptoms in women. Government should create employment opportunities for female sex workers in order for them to earn a living. Mass scale promotion of condom use while having a sexual intercourse could be another strategy that could be implemented. Implementation and evaluation of different models of integrating RTI/STI/HIV services with the existing services and with a provision of enhanced quality effectiveness is required. Perhaps, awareness of the potential risks and more open discussions either in the form of group discussion, on occasions of community gatherings or cultural celebrations, workshops, seminars, or via local health authority or community leader is necessary, both publicly and privately and also peer education by the motivated members for counseling and experience sharing with imparting correct knowledge about HIV/AIDS.

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## REFERENCES


1. International Monetary Fund, World Economic Outlook Database, April 2012
2. Census of India, 2001: http://www.censusindia.gov.in/ accessed on Dec 21, 2007.
3. NACO. HIV sentinel surveillance and HIV estimation in India 2007: A technical brief. Social morbidity of AIDS in high prevalence districts of Andhra Pradesh. New Delhi: Ministry of Health & Family Welfare; 2007.
4. National AIDS Control Organization: National Baseline High Risk and Bridge Population Behavioural Surveillance survey-2001 Part-I: Female Sex Workers and their clients; New Delhi; 2004. Available from: http://www.nacoonline.org/publication/4l.pdf, accessed on April 15, 2006
5. International Institute of Population of Sciences and Macro International. National Family Health Survey (2005-2006) (NFHS-3), Vol. I. Mumbai: IIPS; 2007
6. UNAIDS. Epidemiological fact sheet on HIV and AIDS: India. 2008; available at: http://www.who.int/globalatlas/predefinedReports/EFS2008/full/EFS2008_IN.pdf, accessed on March 3, 2009.
7. Venkataramana CB, Sarada PV. Extent and speed of spread of HIV infection in India through the commercial sex networks: a perspective. Tropical Medicine Int Health 2001; 6(1):1040-61.
8. The text book of Preventive and Social Medicine. In: Mahajan, Gupta, editors. 3rd edition. 2003; p117-8.
9. Hemalatha R, Kumar RH, Venkaiah K, Srinivasan K, Brahmam G. Prevalence of & knowledge, attitude & practices towards HIV & sexually transmitted infections (STIs) among female sex workers (FSWs) in Andhra Pradesh. Indian J Med Res 2011; 134:470-5.
10. Dandona R, Dandona L, Anil Kumar G, Gutierrez JP, McPherson S, Samueis F. Demography and sex work characteristics of female sex workers in India. BMC Int Health Hum Rights 2006; 6:5.
11. Pal D, Raut DK, Das A. A study of HIV/STD infections amongst commercial sex workers in Kolkata (India). Part-I: some socio-demographic features of commercial sex worker J Commun Dis. 2003 Jun; (35):90-5.
12. Pal D, Raut DK, Das A, A study of HIV/STD infections amongst commercial sex workers in Kolkata (India). Part-II: sexual behavior, knowledge and attitude towards STD/HIV infections Sex Transm Infect. J Commun Dis. 2003 Sep; (35):182-7.
13. Weller SC, Davis K. Condom effectiveness in reducing heterosexual HIV transmission. Cochrane Database Syst Rev 2002 ;(1) : CD003255.


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