



# International Journal of Life Sciences Biotechnology and Pharma Research





Research Paper

# A STUDY ON STI MORBIDITY PATTERN AND STI TREATMENT SEEKING BEHAVIOR AMONG FEMALE SEX WORKERS OF DAVANGERE CITY, CENTRAL KARNATAKA

H O Girish<sup>1\*</sup>, Aswin Kumar<sup>2</sup> and Balu P S<sup>3</sup>

\*Corresponding Author: **H O Girish** ✉ [dr.girishmysore@gmail.com](mailto:dr.girishmysore@gmail.com)

**Objectives:** To know the STI morbidity pattern and STI treatment seeking behavior among female sex workers of Davangere city. **Methodology:** Study design: Cross-sectional community based descriptive study. **Setting:** conducted at Davangere city from 16-01-2011 to 15-01-2012 (one year). **Participants:** Derived sample of 200 Female sex workers practicing sex-work for atleast past one year and consenting to participate in study. **Data collection:** Participants were approached through peer workers and interviewed using the modified questionnaire of behaviour surveillance survey. **Results:** Mean age of respondents was 32.7 years. 64% were illiterate. 84% experienced one or the other STI symptoms in last 12 months. Most commonly reported STI symptom was per-vaginal discharge (53%) followed by pain during intercourse (35%). 51.2% utilized services at NGO clinic, 11.3% took treatment at Government hospital. 15% sought treatment within 1 week while 23.2% did not take any treatment during last episode of STI symptom. Self reported HIV reactivity was 4%. Most of the FSW's were irregular in condom usage both with paying and non-paying partners. **Conclusion:** FSW's are experiencing more STI symptoms. Long time gap exists between experiencing STI symptoms and approaching doctor. Most of the FSW's prefer NGO run clinic for seeking treatment for STI. Concern arises about inconsistent condom usage both with paying clients and non paying partners.

**Keywords:** Female sex workers, Condoms, HIV, STI

## INTRODUCTION

Sexually Transmitted Diseases are the group of diseases that are predominantly transmitted by sexual contact (Talsania *et al.*, 2007). Sexually Transmitted Infections (STIs), including HIV, continue to present major health, social, and economic problems in the developing world

leading to considerable morbidity, mortality, and stigma (Desai *et al.*, 2003). The major mode of HIV transmission reported in India is by heterosexual contact (87%) (Park, 2011). The presence of STI increases the risk of HIV transmission between 2 and 20 fold (Talsania *et al.*, 2007).

<sup>1</sup> Subbaiah Institute of Medical Sciences & Research Center, Shimoga, Karnataka.

<sup>2</sup> SS Institute of Medical Sciences & RC, Davangere, Karnataka.

<sup>3</sup> JJM Medical College, Davangere, Karnataka.

Female Sex Worker (FSW) refers to an adult woman who engages in consensual sex for money or payment in kind ([www.nacoonline.org](http://www.nacoonline.org)). Female sex workers form a large group among the core high risk groups. HIV prevalence among FSWs in India is 4.9%, which is ten times higher than pregnant women (0.49%) attending antenatal clinics (National AIDS Control Program Phase III, 2006-2011). STIs are usually concentrated in core groups such as FSWs characterized by a high number of partners and poor healthcare seeking behavior (Sopheab *et al.*, 2008). FSWs are a highly marginalized subgroup (Ghimire *et al.*, 2011) and are known to be highly vulnerable to STIs and to infection with HIV, and consequently transmitting these infections to their clients and other sexual partners (Zachariah *et al.*, 2003). Stigma attached to sex work is regarded as a barrier to the use of sexual health services and treatment.

The STI prevalence rates apparently are far higher in developing countries where STD treatment is less accessible (Kosambia *et al.*, 2005). World Health Organization (WHO) has advocated the application of simple and cost-effective algorithms for STI case detection and case management through syndromic approach (Kosambia *et al.*, 2005). Early and appropriate treatment of STI's has got the major role in controlling the spread of STI's. Safe sex practices, early diagnosis and adequate treatment of STI's are the prime measures for reducing the transmission of STIs and to protect against the epidemic of HIV. The treatment seeking behavior for STI can have a major effect on the persistence and transmission of HIV and other STI's. The stigma associated with female sex workers and STI's may have a serious effect on the efforts in combating the STI's/HIV.

There is a lack of information about FSWs own accounts of the sexual health services and their priorities. This study therefore aimed to determine the prevalence of STI's by syndromic approach and FSW's health seeking behaviors in Davangere city.

## OBJECTIVE

To know the STI morbidity pattern and STI treatment seeking behavior among female sex workers of Davangere city

## MATERIALS AND METHODS

**Study Design:** Cross-sectional community based descriptive study.

**Study Setting:** Study was conducted at Davangere city from 16-01-2011 to 15-01-2012 (one year).

**Study Participants:** Female sex workers practicing sex-work for atleast past one year and consenting to participate were included in the study.

**Data Collection:** Female sex workers were approached with the assistance of NGO peer educator working in this area as a part of targeted intervention program. They were used as a window to enter into the network of female sex workers and further sex workers were approached through their assistance (snowball technique). All subjects were informed about the purpose of study and interviewed at the time and place convenient to them after obtaining informed consent and assuring confidentiality.

**Study Tool:** Subjects were interviewed by using the standard questionnaire of Behavioral Surveillance Surveys (BSS) ([www.nacoonline.org](http://www.nacoonline.org)) after suitable adaptation to local situation. Proforma was pre-tested containing questions on STI symptoms and STI treatment seeking

behavior. Voluntarily and self reported HIV status was enquired to know the HIV status.

**Sampling:** Sample size was calculated on the basis of reported 47% (Thakor et al., 2004). STI morbidity among female sex workers and fixing 15% as the relative precision using formula  $4PQ/D^2$ . Sample size was calculated to be 200 FSW's. FSW's were selected randomly.

## STATISTICAL ANALYSIS

After collection of data, information gathered was entered into Microsoft Excel 2007 version and analyzed by using SPSS version 17. The results were presented in suitable tabular forms.

## ETHICAL CLEARANCE

Ethical clearance was taken from ethical committee of J J M Medical College.

## RESULTS

Table 1 shows that out of 200 FSW's, 64% of them were aged above 30 years. Mean age of respondents was 32.7 years. 64% were illiterate. Currently 56.5 % FSW's were married, 39.5% were separated from their husband and 4 % were un-married. 168 (84%) FSW's reported to have experienced one or the other symptom of STI and 32 (16%) were free from symptoms of STI in the past one year. Among self reported STI

**Table 1: Background Characteristics of Female Sex Workers**

Variable	Variable Categories	Number (%)N=200
Age (Yrs)Mean age= 32.7yrs	18 - 29	72 (36)
	30 - 39	85 (42.5)
	≥ 40	43 (21.5)
Education level	Illiterate	128 (64)
	Literate	72 (36)
Marital status	Married	113 (56.5)
	Separated	79 (39.5)
	Never married	8 (4)

**Table 2: Self Reported STI Symptoms Experienced in last 12 Months**

STI Symptom*	Number N= 200	Percentage
Per vaginal discharge	106	53.0
Pain during intercourse	70	35.0
Lower abdominal pain	61	30.5
Genital ulcer/sore	45	22.5
Groin swelling	9	4.5
No STI symptoms	32	16

Note: \*Multiple responses were taken.

symptoms, the most common symptom was per vaginal discharge experienced by 106 (53%) respondents followed by pain during intercourse 70 (35%) and lower abdominal pain 61 (30.5%) (Table 2).

Out of 168 respondents who suffered from STI symptoms, 86 (51.2%) utilized services at the NGO clinic, while 19 (11.3%) took treatment at Government hospital, 14 (8.3%) approached AYUSH/ traditional healers during their last episode of their STI symptom. It is significant to observe that 39 (23.2%) did not take any treatment during their last episode of STI symptom (Table 3).

**Table 3: Source of Treatment Utilized During Last Episode of STI Symptom in past 12 Months**

Treatment source	Number	Percentage
NGO clinic	86	51.2
No treatment	39	23.2
Government hospital	19	11.3
AYUSH / Traditional healer	14	8.3
Private clinic	7	4.2
From pharmacy	3	1.8
Total	168	100.0

Table 4 shows that, out of 129 respondents who took treatment for STI symptoms during last episode, 19 (14.7%) respondents took treatment within one week of experiencing STI symptom. 97 (75.2%) took treatment in between 1 week up to 1 month. 13 (10.1%) of them approached after one month or more of experiencing symptoms.

Out of 129 FSW's who took treatment for STI, 85 (65.9%) reported to have completed the full

**Table 4: Time Taken to Visit a Health Practitioner During Last Episode of STI Symptom**

Time Taken from Experiencing Symptom	Number	Percentage
≤1 week	19	14.7
>1 week but <1 month	97	75.2
≥1 month	13	10.1
Total	129	100

course of treatment given, whereas 44 (34.1%) did not complete the full course (Table 5).

188 (94%) respondents reported that they have ever undergone HIV testing and all those tested knew their results. 8 (4%) respondents self reported that they are reactive for HIV (Tables 6 and 7).

**Table 5: Self Reported STI Treatment Completion in last Episode**

Self Reported STI Treatment Completion	Number	Percentage
Yes	85	65.9
No	44	34.1
Total	129	100

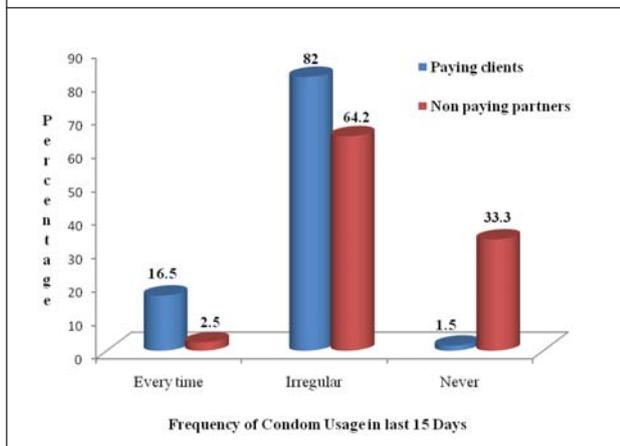
**Table 6: Distribution of Respondents who have ever Undergone HIV Testing and Aware About their HIV Status**

Have ever Undergone HIV Testing N = 200		Among Tested, Respondents who know their HIV Status N = 188	
Number	%	Number	%
188	94.0	188	100

**Table 7: Self Reported HIV Status**

Self Reported HIV Status	Number	Percentage
Reactive	8	4.0
Non reactive	180	96.0
Total	188	100.0

**Figure 1: Frequency of Condom Use in Last 15 Days With Paying Clients and Non Paying Partners**



Condom usage during every time of sexual contact in last 15 days was reported by 33 (16.5%) respondents with paying clients as compared to 5 (2.5%) with non paying partners. 3 (1.5%) respondents never used condom while having sex with paying clients while 54 (33.3%) never used condom while having sex with non paying partners in last 15 days. It is worth noting that the FSW's are irregular in the condom usage both with paying and non-paying partners.

## DISCUSSION

84% of our study participants experienced one or the other STI symptom when compared to studies done by Ghimire *et al.* (2011), Kosambia *et al.* (2005), National BSS (2006), Desai *et al.* (2002), Thakor *et al.* (2004), Xu *et al.* (2008) and Kumar *et al.* (2003) shows that more number of FSW's in our study reported to have had one or more STI symptoms. This could be due to inconsistent condom usage found in this study among paying clients and more so among non paying partners.

The most common STI symptoms experienced in our study were per vaginal discharge (53%),

pain during intercourse (35%) and lower abdominal pain (30.5%). Similar observations were made by Kosambia *et al.* (2005), APAC project ([www.apacvhs.com](http://www.apacvhs.com)), Bruce *et al.* (2011), Ghimire *et al.* (2011), Zachariah *et al.* (2003), Talsania *et al.* (2007), Thakor *et al.* (2004) and Desai *et al.* (2003).

In our study more than half of the FSW's (51%) preferred STI clinic run by the NGO. Studies done by Ghimire *et al.* (2011), Talsania *et al.* (2007) have made similar observation which might be because of easy approach.

23% of our respondents did not take treatment during their last episode of STI symptom. Similar observations were made in other studies (Talsania *et al.*, 2007; Ghimire *et al.*, 2011; Dobe *et al.*, 2004) showing that more number of cases are being missed out for treatment which may result in maintenance of infection in the population and further spread.

Only about 14.7% of the FSW's approached the health practitioner within one week of experiencing STI symptom. Lack of awareness to seek early treatment for STI's could have delayed treatment which increases the potential for transmission of STI / HIV 34% of those who were treated for STI did not complete the entire course of treatment, like observation by Marfatia *et al.* (2005).

The self reported HIV reactivity in our study is 4% which corroborates with National data (Sopheab *et al.*, 2008) which has reported HIV prevalence in female sex workers to be 4.94%. Low and inconsistent condom use with paying clients and non paying partners and delay in seeking treatment for STI's could be few of the factors contributing for HIV reactivity.

Consistent condom usage is most important at every sexual act. In our study, 16.5% and 2.5% of FSW's had used condom everytime with paying clients and non paying partners respectively in last 15 days. This clearly shows that overall, consistent condom usage is less in our study population and more so with non paying partners which predisposes them for increased risk for STI's.

## CONCLUSION

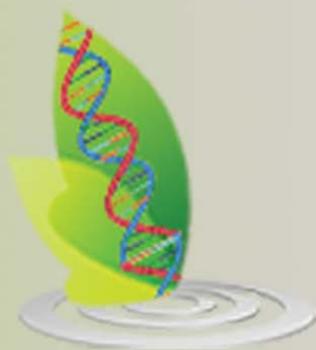
Evaluation based on self reported STI symptoms shows that FSW's in our study population are experiencing more STI's. There is a long time gap between experiencing STI symptoms and approaching doctor. Social stigma attached with fear of exposure as a sex worker appears to be the barrier to seeking STI/HIV care services in non NGO run clinics. There arises concern about the consistent condom usage both with paying clients and non paying partners.

**Limitation:** STI symptoms could not be confirmed by examination or investigation. So, STI morbidity should be cautiously extrapolated to FSW community at large.

## REFERENCES

1. Bruce E *et al.* (2011), "HIV knowledge, risk perception, and safer sex practices among female sex workers in Port Moresby, Papua New Guinea", *Int J Womens Health*, Vol. 3, pp. 53-61.
2. Dobe M *et al.* (2004), "Knowledge about health and health care seeking behaviour of commercial sex workers in Kolkata", *Indian J. Community Med*, Vol. 29, No. 4, pp. 196-7.
3. Desai V K *et al.* (2003), "Prevalence of sexually transmitted infections and performance of STI syndromes against aetiological diagnosis, in female sex workers of red light area in Surat, India", *Sex Transm Inf*, Vol. 79, No. 2, pp. 111-15.
4. Executive summary prevalence of STI & HIV among women in prostitution. <http://www.apacvhs.com/Pdf/womeninprostitution.pdf>
5. Female Sex Workers (FSWs) and their Clients, National Behavioural Surveillance Survey (BSS) (2006), NACO. [http://www.nacoonline.org/upload/NACO%20PDF/Female\\_Sex\\_Workers\\_\(FSWs\)\\_and\\_Their\\_Clients.pdf](http://www.nacoonline.org/upload/NACO%20PDF/Female_Sex_Workers_(FSWs)_and_Their_Clients.pdf)
6. Ghimire L *et al.* (2011), "Utilisation of sexual health services by female sex workers in Nepal", *BMC Health Services Research*, Vol. 11, p. 79.
7. Kosambia J K *et al.* (2005), "Risk markers for presence of STIs in female commercial sex workers, India", *Indian J Sex Transm Dis*, Vol. 26, No. 1, pp. 19-25.
8. Kumar M S (2003), A Rapid Situation Assessment of Sexual Risk Behaviour and Substance use in Sex Workers and Clients of Sex Workers in Chennai (Madras), south India. [http://www.who.int/mental\\_health/evidence/sexual\\_behaviour\\_assessment\\_chennai.pdf](http://www.who.int/mental_health/evidence/sexual_behaviour_assessment_chennai.pdf)
9. Marfatia Y S *et al.* (2005), "Health care seeking behaviour of STD patients", *Indian J Sex Transm Dis*, Vol. 26, No. 1, pp. 16-8.
10. National AIDS Control Programme Phase III (2006-2011), Strategy and Implementation

- Plan, NACO URL: [http://www.nacoonline.org/upload/PublicationStrategy%20and%20Implementation%20Plan%20%20NACO%20Programme%20Phase%20III%20\(2006-2011\)%202006.pdf](http://www.nacoonline.org/upload/PublicationStrategy%20and%20Implementation%20Plan%20%20NACO%20Programme%20Phase%20III%20(2006-2011)%202006.pdf)
11. Park K (2011), *Park's Textbook of Preventive and Social Medicine*, 21<sup>st</sup> Edition, Jabalpur: Banarsidas Bhanot Publishers.
  12. Sopheab H *et al.* (2008), "Sustained high prevalence of sexually transmitted infections among female sex workers in Cambodia", *BMC Infectious Diseases*, Vol. 8, pp. 167.
  13. Talsania N J *et al.* (2007), "STI/HIV prevalence in Sakhi Swasthya Abhiyan, Jyotisingh, Ahmedabad: A clinico-epidemiological study", *Indian J Sex Transm Dis*, Vol. 28, No. 1, pp. 15-8.
  14. Targeted Interventions under NACP III, Operational Guidelines, Core High Risk Groups. NACO, <http://www.nacoonline.org/upload/Policies%20&%20Guidelines/27,%20NACP-III.pdf>
  15. Thakor H G *et al.* (2004), "Prevalence of sexually transmitted infections in sex workers of Surat city", *Indian J. Community Med*, Vol. 29, No. 3, pp. 104-7.
  16. Xu J J *et al.* (2008), "HIV and STI's in clients and female sex workers in mining regions of Gejiu city, China", *Sex Transm Dis*; Vol. 35, No. 6, pp. 558-65.
  17. Zachariah R *et al.* (2003), "Sexually transmitted infection and sexual behaviour among commercial sex workers in a rural district of Malawi", *Int J STD AIDS*, Vol. 14, pp. 185-88.



**International Journal of Life Sciences Biotechnology and Pharma Research**

**Hyderabad, INDIA. Ph: +91-09441351700, 09059645577**

**E-mail: editorijlbpr@gmail.com or editor@ijlbpr.com**

**Website: www.ijlbpr.com**

