

Predictors of Sexually Transmitted Infections among Female Sex Workers (FSWs) in a City of Northern India

Pallavi Shukla, Jamal Masood, J. V. Singh¹, V. K. Singh, Abhishek Gupta, Asuri Krishna²

Departments of Community Medicine and Public Health, King George's Medical University, Lucknow, ¹Director, UP Rural Institute of Medical Sciences and Research, Safai, Etawa, ²Department of General Surgery, King George's Medical University, Lucknow, Uttar Pradesh, India

ABSTRACT

Introduction: Sexually transmitted infections (STIs) and Reproductive tract infections RTIs are important public health problems in India. The prevalence of these infections is considerably higher among high risk groups (HRGs) ranging from 20-30%. It is high time that a study should be conducted to explore different factors and conditions responsible for the practice of unsafe sex among female sex workers (FSWs) in Uttar Pradesh (UP) and the impact of this on social life and health of FSWs. As Lucknow provides a comprehensive opportunity in terms of tourism, occupation, and economy, it becomes a potential hub for sex work. Studying FSW in Lucknow can thus be considered as a yardstick for the entire FSW population of UP population. The present study was thus planned with the objective of knowing the STI prevalence and its determinants among FSWs. **Materials and Methods:** A cross-sectional descriptive study was conducted on FSWs registered with Targeted Intervention-Non-government Organization (TI-NGO), registered with Uttar Pradesh State Acquired Immuno Deficiency Syndrome (AIDS) Control Society (UPSACS) of Lucknow city. Total 288 subjects were studied. **Results:** The average age of FSWs was 31 years. FSWs were mostly Hindus and illiterate. The overall prevalence of STI as per Syndromic diagnosis was found to be 35.8%. However, the percentage of FSWs with STI was higher in street-based (50.6%) than home-based (29.8%). Majority (42.7%) of sex workers with STI had non-regular partners only while majority (52.4%) of sex workers without any STI had only regular partners. Condom usage with regular partners was poor. However, with the non-regular partners the condom usage was better. On multivariate analysis being single, having sex work as a sole means of earning, duration of sex work > 2 years, having pallor, and giving in to client's demand for unsafe sex were found to be significant in causing STI. **Conclusions:** Prevalence of STI among the female sex workers as per Syndromic diagnosis was found to be 35.8%. Unemployment, anemia, and having sex without condom for extra money, failure to persuade the client and not doing anything were found to be important predictors for presence of STI.

Keywords: Condom usage, female sex workers, FSW, sexually transmitted infections

Introduction

Indian society discriminates against female sex workers (FSWs) as immoral women and prostitution is not

legalized in India. As a marginalized group, sex workers experience poorer health than comparable age-groups of the general population.

Sexually transmitted infections (STIs) and RTI'S are important public health problems in India. Community-based surveys have shown that about 6% of adult Indian population suffers from STI's and RTI's. The prevalence of these infections is considerably higher among high-risk groups (HRG's) ranging from 20-30%.⁽¹⁾ The predominant mode of transmission of both human immuno virus (HIV) and other STI is sexual intercourse.

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Address for correspondence:

Dr. Pallavi Shukla, 56/20 Tilpurva Hussainganj, Lucknow - 226 001, Uttar Pradesh, India.
E-mail: dr.pallavishukla@gmail.com

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Strong evidence supports that STIs facilitate HIV transmission by increasing both HIV infectiousness and susceptibility. Thus, detection and treatment of individuals with STIs is an important and cost-effective part of an HIV control strategy.

HIV positivity among FSWs in UP is 0.62%.⁽²⁾ It is possible that majority of FSWs in UP are indulging in unsafe sex with their clients. Society considers sex work unethical. As a result, individuals engaged in sex work feel alienated and do not come forward to seek healthcare services. Very few data are available on their demographic attributes, as many of them do not openly acknowledge that they are sex workers. For the HIV-prevention programs to increase their reach, it is important to know demographically which women are more likely to be engaged in sex work.

It is high time that a study should be conducted to explore different factors and conditions responsible for the practice of unsafe sex among FSWs in UP and the impact of this on social life and health of FSWs. As Lucknow provides a comprehensive opportunity in terms of tourism, occupation, and economy, it becomes a potential hub for sex work. Studying FSW in Lucknow can thus be considered as a yardstick for the entire FSW population of UP.

Objectives

1. To assess the prevalence of STIs among FSWs.
2. To assess predictors of STIs among FSWs.

Materials and Methods

It was a cross-sectional study on FSWs registered with Targeted Intervention-Non-government Organization (TI-NGO), registered with Uttar Pradesh State Acquired Immuno Deficiency Syndrome (AIDS) Control Society (UPSACS) of Lucknow city. This study was conducted over a period of 1 year starting from August 2012. FSWs were approached with the help of a non-governmental organization Center for Rural Entrepreneurship and Technical Education (CREATE) registered with UPSACS. It was the only non-governmental organization (NGO) for targeted intervention for FSWs of Lucknow city. All the FSWs registered with TI-NGO CREATE were included in the study. FSWs were approached by selecting one by one randomly from the list through random number table till the set time frame was completed. The entire study was done by the single investigator (pursuing post graduation in community medicine and trained in STI syndromic management) with the help of the outreach workers of the NGO. General physical examination (including weight, height, blood pressure, pallor, ecerus, lymphadenopathy, etc.) and STI examination was done through syndromic approach.

FSW were approached with the help of a peer who arranged meeting and rapport building and were interviewed by a trained single investigator. If in one visit the FSWs from the visited area could not be met, another visit was made next month and if again the lady was not found, she was considered missing and deleted from the list. Once the peer introduced us to the FSWs, we informed her about the study.

Study was approved by the Ethical Review Board of the King George's Medical University prior to the study. Permission to conduct the study was taken from UPSACS and the Project Director of CREATE. Written informed consent was obtained from each respondent before the initiation of interview and examination. Privacy and confidentiality of the respondent was maintained throughout the study and thereafter.

Descriptive statistics, frequency percentage for categorical variables were determined. Multivariate analysis was done on factors causing STI. The level of significance was set at 0.05. Statistical Package for the Social Sciences (SPSS) version 17 was for analysis.

Results

All the 634 FSWs registered with TI-NGO CREATE were included in the study. During this period, a total 366 FSWs were approached out of which 13.6% were found missing, 7.7% were non-responsive/non-cooperative/not given consent/seriously ill and 288 were interviewed after taking written informed consent. Out of these 288 FSWs, 83 were street-based (Group I) and 205 were home-based (Group II)

The average age of FSWs was 31 years (range from 15-58 yrs). The two groups were comparable with respect to age groups. Majority of FSWs belonged to 30-40 years age-group and was similar in both the groups.

In Group I 7.2% were Muslim, whereas they were 22.0% in Group II. Majority of street-based (48.2%) were currently single after marriage (due to divorce or separation or death of spouse). Among home-based majority of them were married (68.3%).

Majority (55.4% Group I and 53.7% Group II) of FSWs belonged to nuclear family. Problem family is one where the FSW is living with her kids and spouse has either died or left. Roughly 6% FSWs in both groups were living in a problem family. Maximum percentage (73.5% in Group I and 52.2% in Group II) of FSWs were illiterate in both groups [Table 1].

The overall prevalence of STI as per Syndromic diagnosis was found to be 35.8%. However, the percentage of

FSWs with STI was higher in group I (50.6%) compared to group II (29.8%) and this difference was statistically significant (*P*-value 0.001) [Figure 1].

Most common type of Syndrome was vaginal/cervical discharge (overall 23.3%, 30.1% in street-based and 20.5% home-based). Next common diagnosis is GUD-Herpetic type [Table 2].

Majority (42.7%) of sex workers with STI had non-regular partners only while majority (52.4%) of sex workers without any STI had only regular partners. The relation between type of partner and STI was statistically significant [Figure 2].

When the types of partners were evaluated some of the street-based as well as some of the home-based FSWs had both regular and non regular partners resulting in overlap of cases. Condom usage with regular partners was poor. Out of street-based FSWs 64.7% and 45.3% of home-based FSWs never used condom with their regular partners. However, with the non-regular partners the condom usage was better, 67.9% of street-based and 70.3% of home-based FSWs always used condom with their non-regular partners [Table 3] were found to be significant in causing STIs.

On multivariate analysis being single, having sex work as a sole means of earning, duration of sex work > 2 years, having pallor, and giving in to client's demand for unsafe sex (by either charging extra amount or failing to persuade or not doing anything) [Table 4] were found to be significant predictors of STIs among FSWs.

Discussion

The average age of FSWs was 31 years (range from 15-58 years) with 42.7% belonging to 30-40 years age-group and was similar to the Behavioural Surveillance Survey (BSS) 2006 data.⁽³⁾ In a study conducted in Andhra Pradesh,⁽⁴⁾ 86% of all the FSWs were between 15-34 years of age. In another study conducted in Karnataka,⁽⁵⁾ the

median age was 30 years (range 18-45 years). Data from UP as covered in BSS 2006⁽³⁾ by National AIDS Control Organisation (NACO) shows that median age of FSWs was 30 years with 43.8% belonging to 30-39 years age.

Table 1: Bio-Social characteristics of the Female Sex Workers (FSW)

Characteristics	Female sex workers					
	Group I (Street based) n = 83		Group II (Home based) n = 205		Total n = 288	
	No.	%	No.	%	No.	%
Age Group (years)						
< 20	2	2.4	17	8.3	19	6.6
20-30	31	37.4	63	30.8	94	32.6
30-40	34	41.0	89	43.4	123	42.7
> 40	16	19.3	36	17.6	52	18.1
Religion						
Hindu	77	92.8	157	76.6	234	81.3
Muslim	6	7.2	45	22.0	51	17.7
Christian	0	0	3	1.5	3	1
Caste						
SC/ST	19	22.9	62	30.2	81	28.2
OBC	22	26.5	57	27.8	79	27.4
General	42	50.6	86	42.0	128	44.4
Marital Status						
Unmarried	4	4.8	15	7.3	19	6.6
Married	39	47.0	140	68.3	179	62.2
Currently Single*	40	48.2	50	24.4	90	31.2
Living arrangement						
Joint family	6	7.2	60	29.3	66	22.9
Nuclear family	46	55.4	110	53.7	156	54.3
Problem family	5	6.0	13	6.3	18	6.2
Alone	17	20.5	11	5.4	28	9.7
Others †	9	10.8	11	5.4	20	6.9
Educational profile						
Illiterate	61	73.5	107	52.2	168	58.3
Primary	8	9.6	30	14.6	38	13.2
Middle	5	6.0	27	13.2	32	11.2
High school	3	3.6	19	9.3	22	7.6
Intermediate and higher	6	7.2	22	10.7	28	9.7

*Divorced, Separated, Widowed, †with partner or friends

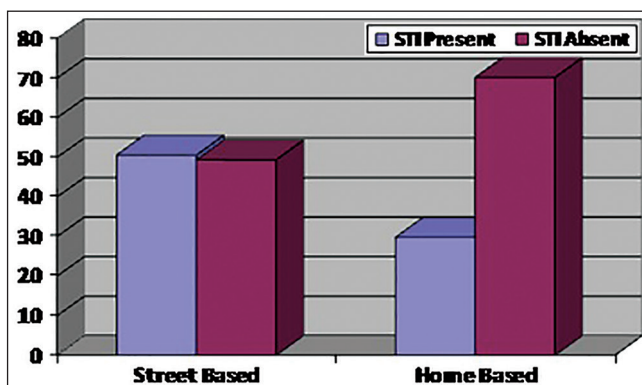


Figure 1: Distribution of FSWs on the basis of presence of STI

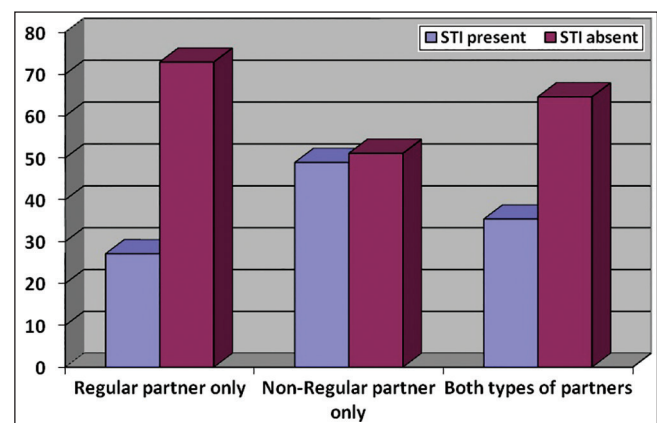


Figure 2: Presence of STI among FSWs with different types of partners

Furthermore, the average age of FSW among street-based and home-based was also comparable. As per literature, the home-based FSWs tend to be younger as compared

Table 2: Distribution of FSWs on the basis of different types of STI syndromes

Syndromic diagnosis	Female sex workers					
	Street based		Home based		Total	
	n = 83		n = 205		n = 288	
	No.	%	No.	%	No.	%
Vaginal/Cervical Discharge	25	30.1	42	20.5	67	23.3
GUD non-Herpetic	2	2.4	3	1.5	5	1.7
GUD Herpetic	9	10.8	3	1.5	12	4.2
Lower Abdominal Pain	5	6.0	4	2.0	9	3.1
Inguinal Bubos	1	1.2	2	1.0	3	1.0
Anorectal Discharge	0	0.0	3	1.5	3	1.0
Genital Scabies	0	0.0	4	2.0	4	1.4
No STI	41	49.4	144	70.2	185	64.2

Table 3: Distribution of FSWs on the basis of condom usage with their partners

Condom usage with their partners	Female sex workers					
	Street based		Home based		Total	
	No.	%	No.	%	No.	%
Regular partner	n = 17*		n = 181*		n = 198*	
Always	4	23.5	81	44.8	85	42.9
Infrequent	2	11.8	18	9.9	20	10.1
Never	11	64.7	82	45.3	93	47.0
Non-regular	n = 81*		n = 74*		n = 155*	
Always	55	67.9	52	70.3	107	69.0
Infrequently	24	29.6	16	21.6	40	25.8
Never	2	2.5	6	8.1	8	5.2

*overlapping of cases

Table 4: Multivariate analysis for predictors of sexually transmitted infection

Characteristics	β Co-efficient	Odds Ratio	P value	95% C.L.	
Type of FSW	Home based	reference category			
	Street based	0.125	1.13	0.777	0.47-2.69
Marital status	Married	reference category			
	Single	0.650	1.91	0.038	1.03-3.53
Occupation other than sex work	Any other occupation	reference category			
	Only sex work	0.768	2.15	0.018	1.14-4.07
	≤ 2		reference category		
Duration of sex work (years)	2-5	2.537	12.64	0.004	2.21-72.29
	5-10	3.016	20.40	0.001	3.53-117.72
	10-20	1.801	6.05	0.038	1.10-33.11
	≥ 20	2.808	16.57	0.001	3.03-90.48
Partner type	Only regular partner		Reference category		
	Only non-regular partners	0.036	1.03	0.938	0.41-2.60
	Both types of partners	-0.567	0.56	0.184	0.24-1.30
Presence of anaemia	No		Reference category		
	Yes	0.960	2.61	0.001	1.44-4.70
Response of FSWs to client's demand for unsafe sex	Persuaded successfully or refused to have sex (had only safe sex)		Reference category		
	Charged extra amount	2.179	8.83	0.002	2.26-34.51
	Failed to persuade	1.050	2.85	0.038	1.05-7.72
	Did not do anything	0.844	2.32	0.015	1.18-4.58

to the street-based FSWs.⁽⁴⁾ However, no such difference was found in the present study.

In the present study, overall 58.3% of FSWs were illiterate and interestingly 9.7% had an education level of more than high school. The percentage illiteracy was higher among the street-based FSWs as compared to home-based (73.5% vs. 52.2%) which is similar to the other studies^(5,6) where the illiteracy rate was found to be 75% and 80% among street-based FSWs, respectively. As per the data collected in BSS 2006⁽³⁾ overall two-fifths of the FSWs were illiterate and more than half (55%) had studied up to tenth standard. However, in UP 66.8% of FSWs were illiterate and only 0.7% had education level more than high school.

Most of the FSWs were either married or had previously been married but were now separated, divorced, or widowed. In the present study, the overall percentage of married FSW was 62.2%. This can be explained by the fact that traditionally in the Indian society, women after marriage are expected to take care of the household, children, and assist with the work of the men of the household (for example, work in agriculture) but are not encouraged to work outside their household for generating income as that responsibility lies with the men. However, with increasing poverty and decreasing economic opportunities, married women are increasingly seeking work outside their households to generate income. It is likely that the earning potential in sex work for the poor and illiterate women is larger to what they could earn through other types of work. Another

interesting finding in this study was that the percentage of single women (unmarried/divorced/separated/widowed) was higher in the street-based group as compared to the home-based (53% vs. 31.7%). More than two-thirds (69%) of the FSWs covered in BSS 2006⁽³⁾ were ever married.

In consistence with the literature, the condom usage was lacking in both groups with their regular partners (64.7% vs. 45.3%). These results are similar to the BSS 2006⁽³⁾ report wherein nearly three-fourths of the FSWs had used condom every time with all the paying clients during the last 30 days preceding the survey. A higher proportion of home-based FSWs reported consistent condom use (85%) as compared with street-based FSWs (69%). Only 37% of the FSWs reported consistent use of condom with non-paying partner during the last 30 days. In the present study, however, condom usage among home-based FSWs was less than street-based FSW. This was most probably due to the larger number of home-based FSW included in this study who mostly have a larger number of regular partners.

Although condom use with clients seems to have increased, it is a matter of concern that condom use with "regular sexual partners" has not significantly changed; in fact, the proportion of women who reported never using condoms with their regular partners significantly increased over time. Similar observations have been made by others and indicate that regular partners are possibly perceived as "safe" by these FSWs. These observations highlight a need to continue emphasis on awareness about condom use in FSWs and to educate them to use condoms even with their regular partners.^(7,8)

In the present study the diagnosis of STI was made according to the World Health Organization (WHO) syndromic approach.⁽¹⁾ The overall prevalence of STI was found to be 35.8% in this present study which is consistent with most of the literature.⁽¹⁾ The most common Syndromic diagnosis was that of vaginal discharge, followed by herpetic genital ulcer disease. Interestingly there was a higher prevalence of STI among the street-based FSWs as compared to the home-based FSW. This can be explained on the basis that street-based FSW had more number of non-regular multiple partners, lack of family support making them a vulnerable group and poor health seeking behavior. Also the incidence of genital ulcer disease of herpetic variety was more in the street-based FSWs.

There has been no study done on FSWs in UP to identify predictors of STI among them. In this study, on univariate analysis following seven variables was found to be significantly associated with higher risk of STI among FSWs. These were type of FSW, marital status,

occupation other than sex work, duration of being in sex work, type of partner, presence of pallor, and response to refusal for use of condom. However, on multivariate analysis only being unemployed, duration of sex work >2 years, presence of anemia and having sex without condom for extra money, failure to persuade the client, and not doing anything were significantly associated with higher risk of STI among FSW in this study.

Conclusions

Prevalence of STI among the FSWs as per Syndromic diagnosis was found to be 35.8%. Condom usage with regular partners was much poorer than with non-regular partners. Unemployment, anemia, and having sex without condom for extra money, failure to persuade the client and not doing anything were found to be important predictors for presence of STI among FSWs. This is also the first study of this kind done in the state of UP.

Suggestions and recommendations

In spite of all present efforts, the prevalence of STI among FSWs is nearly 35% which is much greater than that in general adult population (6%), thus, indicating more intensive efforts to be taken up in the city to bring down the prevalence. This could be achieved through additional efforts like mobile clinics and health camps in the area of solicitation of the FSWs.

Newer options for job opportunities could be generated suiting the demographic profile of these FSWs since unemployment has come out as an important predictor for STI.

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