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## RESEARCH ARTICLE

# PREVALENCE OF SEXUALLY TRANSMITTED INFECTIONS AND REGULAR CONDOM USE AMONG FEMALE SEX WORKERS IN AMRITSAR (PUNJAB, INDIA): A CROSS-SECTIONAL STUDY

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### ABSTRACT

**Objectives:** To determine the prevalence of sexually transmitted infections and regular condom use among female sex workers in Amritsar, Punjab, India. **Methods:** The study, conducted from 1<sup>st</sup> January 2020 to 31<sup>st</sup> March 2021, included 180 female sex workers from 4 hotspots under targeted intervention site in Amritsar city (Punjab, India), The data was collected using one-to-one interview on structured questionnaire. The data was compiled and analyzed using Microsoft Excel and EpiInfo07 by calculating proportions and inferential statistics. **Results:** 72% of female sex workers were regular condom users. Regular condom use with clients was 33% among those engaged for > 5 years. 19% had reported at least one episode of sexually transmitted infection of which 89% were irregular condom users. None of those in the profession for 1-3 years suffered from STIs as compared to 73% of those who were in the profession for more than 5 years. **Conclusion:** The prevalence of sexually transmitted infections was significantly higher among irregular condom users. Duration of profession had significant association with sexually transmitted infection and regular condom use.

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## INTRODUCTION

"It is impossible to think about the welfare of the world unless the condition of women is improved. It is impossible for a bird to fly on only one wing." — Swami Vivekananda<sup>1</sup>

Prostitution is one of the oldest professions. It has been documented in most societies throughout history, from brothels in Greece in the fourth century BC to narratives of Ishtar, the Mesopotamian goddess of fertility, who was associated with prostitution<sup>2</sup>. In the modern society, sex industry has become more organized and has grown to a great extent where there are an estimated 42 million prostitutes around the world.<sup>3</sup>In 2007, the Ministry of Women and Child Development reported the presence of over 3 million female sex workers in India, with 35.47 percent of them entering the trade before the age of 18 years.<sup>4</sup>United Nations Programme on HIV and AIDS (UNAIDS) estimated that there were 657,829 prostitutes in the country (2016).<sup>5</sup> Repeated sexual exposures make sex workers unambiguously vulnerable to various health problems such as sexually transmitted infections, HIV/AIDS, unintended pregnancy, teenage pregnancy and increased abortion rates despite contraceptive use. Analysis of data from 2007 to 2012 from Designated Sexually Transmitted Infection/Reproductive Tract Infection Clinics and Sexually Transmitted Infection (STI) clinics in Targeted Intervention sites shows that 34.9 million episodes of sexually transmitted infection/reproductive tract infections were treated (7-9 million per year).<sup>6</sup>

As per the Integrated Biological Behavioral Surveillance conducted in 2014-15, HIV prevalence among female sex workers (FSWs) found to be 2.2%, which is eight times more than among pregnant women attending antenatal clinics (0.29%) as per HIV Sentinel Surveillance (HSS) 2014-15.<sup>7</sup>Discrimination and occupational stigma plays a major role in out-casting the commercial sex workers at social, mental and physical level which further makes them suffer from deprivation of health facilities and access to health services. As of now, no specific health related program has been launched for sex workers in India although a major role is being played by National AIDS Control Organization where National AIDS Control Programme evolve and revolve around its twin objective of bringing about HIV prevention and providing treatment to people living with HIV including high risk groups such as female sex workers.<sup>8</sup>National AIDS Control Programme is a 100% centrally sponsored project, which through the State AIDS Prevention and Control Societies and various non-government organizations guides prevention programme at state, district and village level.<sup>8</sup> Under Punjab State AIDS Prevention and Control Society, there are 59 targeted intervention sites/project in Punjab. They are catering to the needs of various high risk groupssuch as female sex workers, intravenous drug users, truckers and migrants. Out of these, 32 are solely working for female sex workers of which 3 are located in Amritsar city of state Punjab.<sup>9</sup> Apart from prevention of HIV infection, TIs facilitate prevention and treatment of sexually transmitted infections, counselling services to female sex workers, contraception provision, regular health check-ups, provision of legal support, Information Education and Communication and Behavior Change Communication activities and awareness on various health

related issues are also linked to care, support and treatment services for HIV infected.<sup>9</sup> All these services especially counselling and health related are provided through peer educators which are selected from within the high risk groups for every hotspot.<sup>9</sup>

## METHODS

The present study was conducted in Amritsar (Punjab, India), under guidance of the Department of Community Medicine, Government Medical College, Amritsar. In Amritsar city, there are total 5 Targeted Intervention (TI) sites / projects under Punjab State AIDS Control Society, out of which 3 serve female commercial sex workers. Out of the 3, one TI Site i.e. All India Women Conference was randomly selected by lottery method. The study population was selected from 4 out of the 10 hotspots under All India Women Conference. 45 female commercial sex workers from each of the 4 selected hotspots were selected making a total sample size of 180. The study was planned to be conducted over a period of one year i.e. from 1<sup>st</sup> January 2020 to 31<sup>st</sup> December 2020 but due to COVID-19 pandemic and associated lockdown, the period of data collection was extended by 3 months (till 31<sup>st</sup> March, 2021). Following inclusion and exclusion criteria were applied for the selection of study population:

- **Inclusion criteria**

**The sex workers who:**

- Gave a written informed consent.
- Were aged  $\geq 18$  years.
- Were registered with any of the three TI sites in District Amritsar.

- **Exclusion criteria**

**The sex workers who were**

- Not available on third repeated visit.
- Deaf and/or dumb and/or suffered from any mental illness.
- Non-cooperative or not willing to participate in the study.

Prior to commencement of the study, approval from Institutional Ethical Committee and Punjab State AIDS Control Society was taken. A written informed consent was obtained prior to commencement of the interview. The interview of each respondent was held in a completely confidential environment with a one-to-one approach i.e. presence of only the interviewer and one study participant. No personal identifiers such as name and address were recorded, to maintain confidentiality. No invasive intervention was performed. For this study, a semi-structured questionnaire was developed keeping the aims and objectives of the study in mind.

**The questionnaire consisted of following sections**

- **Section-I-** socio-demographic profile of FSWs.
- **Section-II-** general health assessment including reproductive health.
- **Section-III-** occupational profile and occupational health of FSWs.
- **Section-IV -** personal and social history of FSWs.
- **Section-V -** mental health and occupational stigma of FSWs.

Data was compiled and analyzed using MS Excel and Epi info. For nominal, categorical and ordinal data, frequencies / proportions were calculated. For establishing association, chi-square test was used, where p-value of  $< 0.05$  (on both sides) was considered to be statistically significant.

## RESULTS

Out of 180 FSWs, majority i.e. 117 (65%) were aged between 26-35 years whereas somewhat similar number were aged between 18-25

years (31; 17%) and 36-45 years (32; 18%), respectively. Almost equal number of FSWs followed Sikhism and Hinduism religion (87; 48% vs 84; 47%). Majority i.e. 132 FSWs (73%) lived in nuclear families and 143 (79%) in their own residences. Only 8% of the FSWs were illiterate and 82% (147) had attained education up to middle class and above.

**Table 1. Distribution of female sex workers according to their occupational profile (N = 180)**

Variable	Number	Percentage
<b>Age of entry in the profession (in years)</b>		
18-25	147	82
26-35	31	17
36-45	2	01
<b>Primary reason to enter the profession (multiple responses)</b>		
Need for money	179	99
Could not get another job	75	42
Good and easy money	89	50
Self-adventure /pleasure	7	04
<b>Years in profession</b>		
1 - < 3 years	16	09
3 - 5 years	131	73
> 5 years	33	18
<b>Type of engagement</b>		
Part time	111	62
Full time	69	38
<b>Types of services (multiple responses)</b>		
Vaginal sex	180	100
Oral sex	180	100
<b>Marital status at entry</b>		
Unmarried	40	22
Married	140	78

Table 1 shows that majority i.e. (147; 82%) of FSWs entered the profession between the age of 18-25 years. The various reasons cited by them for entering the profession were need for money (99%), no other job option (42%), good and easy money (50%) and self-adventure (4%). Most of them (91%), had been in the profession for more than 3 years. Majority (111; 62%) worked part-time in this profession whereas 38% (69) worked full-time. All 180 FSWs (100%) provided both oral and vaginal sex services. Majority i.e. 140 (78%) were married at the time of entry in the profession. Among all the study participants, 19% gave a history of STI. All of them took treatment for the infection. Majority i.e. 175 (97%) got tested for HIV and all of them (100%) knew their HIV status. None was positive for the infection. The HIV test was conducted every 6 months irrespective of their HIV status at Integrated Counselling and Testing Center in co-ordination with Targeted Intervention site.

Figure 1 shows the distribution of female sex workers according to their contraceptive practice where 93% used contraception with regular partner (husband, boyfriend, live-in partner) and 7% used with clients. 28% reported 1-2 condom-free sexual encounters in a week.



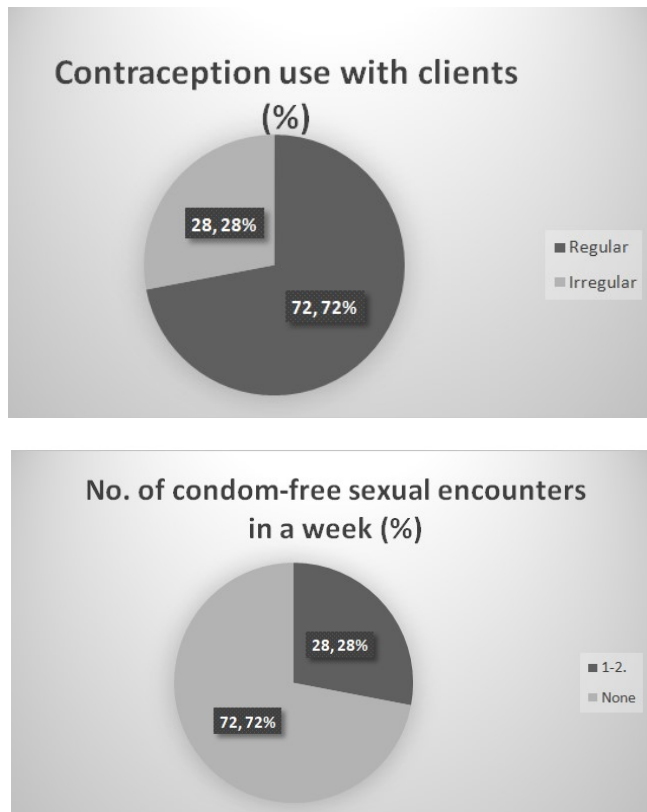


Figure 1. Distribution of female sex workers according to their contraceptive practice

Table 2: Association of STI episode with age group, condom use and years in profession among female sex workers (N = 180)

Variable	FSWs with at least one STI episode		Chi Square** (p-value)*
	Yes (n=35)	No (n=145)	
<b>Age-group (in years) (row %)</b>			
18-25	01 (3%)	30 (97%)	30.18 ( $<0.001$ )
26-35	17 (14%)	100 (86%)	
36-45	17 (53%)	15 (47%)	
<b>Condom use (column%)</b>			
Regular	04 (11%)	125 (86%)	77.64 ( $<0.001$ )
Irregular	31 (89%)	20 (14%)	
<b>Years in profession (row %)</b>			
1 – 3	00 (0)	16 (100%)	---
3 – 5	11 (8%)	120 (92%)	
> 5	24 (73%)	09 (27%)	

\*p-value  $<0.05$  was considered to be significant

\*\*The cells with value  $<5$ , Yates correction was applied

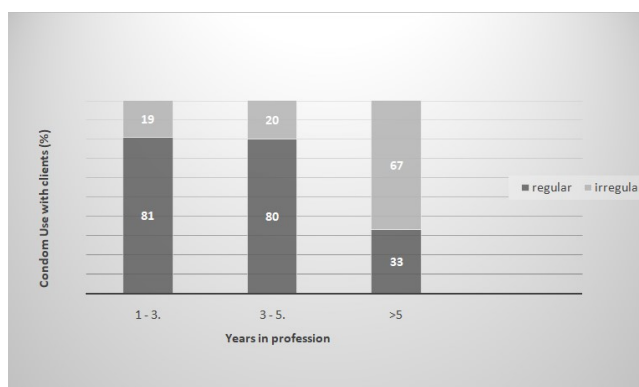


Figure 2. Association of years in profession with condom use with clients (N = 180)(p value  $<0.001$ )

The type of contraception used by all sex workers in the study was male condom which was procured from targeted intervention site.

STI episodes were reported most from female sex workers in the age group of 36-45 years and least from 18-25 years. History of STI was significantly higher among irregular condom users (89%) in comparison with regular condom users (11%). None of the FSWs who had been in the profession for 1-3 years suffered from STIs as compared to 73% of those who were in the profession for more than 5 years (Table 2). Figure 2 shows that regular condom use with clients was found to be 81% among those engaged in the profession for 1-3 years and merely 33% among those who were engaged in the profession for  $> 5$  years.

## DISCUSSION

In the present study, majority i.e. 65% of the FSWs were in the age group ranging from 26-35 years whereas the remaining 17% and 18% were in the age group 18-25 years and 36-45 years, respectively. Majority of the FSWs falling in this age range i.e. 26 – 35 years, could be due to the fact that most women attain peak of their sexual activity in this age group. It is also a professionally profitable age as FSWs of this age group are more in demand due to their young looks. Similar results have been reported by a multi centric study conducted in 22 districts from four high HIV prevalence states in India (Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu) which also revealed that majority of FSWs were in the middle age group and 25% were in the age group of 18-25 years.<sup>10</sup> It was observed that majority (82%) of the female sex workers entered the profession in the age group 18-25 years (Table 1). A study by LA Kramer in Arizona showed the mean age of entry of FSWs in the profession to be 23.<sup>11</sup> This could be due to the fact that it is an age in which girls easily fall prey in the hands of commercial sex work due to reasons such as want of easy and good money, bad company, self-adventure and pleasure etc. 78% were married at the time of entry in the profession. Majority (73%) were in the profession for 3-5 years and 62% worked part-time. All i.e. 100% of the FSWs worked in the day time and none reported to be working in the night hours. The reasons cited by them for the same were the society norms still prevailing in small cities like Amritsar where women stay indoors after day-light and any women who is going out for work in the dark is not a principled and respectable women. They would easily go out for work in the day time giving various excuses such as going to work at the factory, as a domestic help, as a laborer or worker at the field. In the present study, regular condom use with clients was seen to be 72% (Figure 1). Similar result have been observed in various studies regarding consistent condom use.

One large study of FSWs in Shenzhen reported consistent condom use to be 80% with clients.<sup>12</sup> The condom use was significantly higher i.e. 93% with regular partner. The regular partners reported were male friend, husband and live-in partner. The reason for use with regular partner was primarily birth control. FSWs felt that any unwanted pregnancy could be unfavorable for their profession as they could lose their livelihood by wasting crucial years of youth. This justifies the observation that majority i.e. 71% of the female sex workers had 2 or less children. 28% of FSWs engaged in inconsistent condom use with their client. A cross-sectional study conducted among 296 brothel based FSWs of Sonagachi, Kolkata, concluded the inconsistent condom use among FSWs to be 37.5%.<sup>13</sup> All those who used condom irregularly mentioned extra money being provided by the client for condom-free sex. It enhanced client's satisfaction i.e. extra sexual pleasure. Sex workers reported that offer of extra money by the client for condom-free sex is a routine story. It is a very common attitude prevailing among the clients. The various client's behavior towards condom use has not been studied in this thesis but in various studies, this aspect has been discussed. In one study by S S Abbas in Pakistan, profile of clients of sex workers was studied in which 52% of clients bought oral or anal sex for extra money.<sup>14</sup> It was observed that 94% of female sex workers were offered extra money by the clients for condom-free sex. Some of them reported falling on to the greed for extra money and underwent encounter without condom. Some reported not being lured by the extra money provided since they felt that unprotected sex could lead to unwanted pregnancy or any

sexually transmitted disease. In the present study, 19% of female sex workers reported history of sexually transmitted infections. This finding is in concordance with other studies on FSWs of India in which the number of FSWs having reported STI episodes was in the similar range. A qualitative study conducted to assess the psychological morbidity among female commercial sex workers at Victoria Hospital, Bangalore, showed 22% of their respondents were suffering from sexually transmitted diseases.<sup>15</sup> Another descriptive cross-sectional study conducted by Pallavi Shukla et al (2015) with the objective of knowing STI prevalence and its determinants among FSWs of Lucknow city registered with UPSACS showed the overall prevalence of STI as per Syndromic diagnosis to be 35%.<sup>16</sup> A statistically significant association was seen between condom use and history of STI episode among FSWs (Table 2). Out of the 19% having STI, 89% were irregular condom users. Out of the 81% reporting no STI episode, majority were regular condom users. This supports the point that consistent condom use significantly protects from acquiring STI. This has been stated by a number of studies as well as literature. A cross-sectional survey among FSW at 24 sites in Andhra Pradesh stated that increased condom use was significantly correlated with lower probability of STI sero-positivity.<sup>17</sup> Irregular condom use is an important factor in causing sexually transmitted infections. It invariably also increases the risk of HIV among female commercial sex workers. A study conducted by Damacena et al on the risk factors associated with HIV prevalence among female sex workers in 10 Brazilian cities showed that longest period of prostitution and waiving the use of condom on client's request were the most important associated risk factors to HIV infection among FSWs.<sup>18</sup> In the present study, 100% of those suffering from sexually transmitted infections were in the profession for more than 3 years coinciding with the study on predictors of Sexually Transmitted Infections among Female Sex Workers in a city of Northern India in which duration of sex work >2 years was found to be significantly associated with STI in FSWs<sup>19</sup>(Table 2). Another finding observed was that condom use was significantly associated with years in profession of FSWs (Figure 2). Regular condom use was significantly higher among workers who were in the profession for 3-5 years (81%) whereas it decreased significantly to 9% among those working for more than 5 years. This could be explained by the fact that in the initial years of engagement, the FSWs have more fear of acquiring various diseases, but over the years, as they are more involved in the profession, with easy and good money flowing in, they tend to adopt a careless and risky attitude towards their sexual health.

**Public health implications:** Sexually transmitted infections and Reproductive tract infections are important public health problems in India. The prevalence of these infections is considerably higher among high risk groups such as female commercial sex workers, ranging from 20-30%.<sup>19</sup> Young age and duration of sex work are also associated with higher exposure risk, due to the probability of having higher number of sexual partners.<sup>20</sup> It invariably also increases the risk of HIV among female commercial sex workers. Condom use plays an integral part in the profession of commercial sex work. It is important to mention here that the overall burden of STI/HIV in the country can be reduced significantly if sex workers use condom regularly. Regular condom use not only protects sex workers but also their clients and regular partners as they are a key population in harboring and transmitting these diseases.

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