

Anal sex and associated HIV-related sexual risk factors among female sex workers in Andhra Pradesh, India

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Abstract. *Background:* This study aims to understand the correlates of anal sex practices among female sex workers (FSWs) and examine the association of anal sex with HIV-related sexual risk factors in Andhra Pradesh, India. *Methods:* A cross-sectional behavioural survey was conducted in 2011 among 795 FSWs aged 18 years or older. Probability-based cluster sampling was used to select respondents from sex work hotspots. *Results:* One-quarter (23%) of FSWs had practiced anal sex in the last year. The odds of practicing anal sex were higher among FSWs aged 35 years or more than in those aged less than 25 years (adjusted odds ratio (AOR): 2.05, $P < 0.05$), in those formerly married compared to those currently married (AOR: 1.88, $P < 0.01$), in those having an income only from sex work compared to those having additional sources of income (AOR: 1.54, $P < 0.05$), those reporting heavy alcohol consumption compared to those who did not (AOR: 2.80, $P < 0.01$) and those who experienced violence compared to those who had not (AOR: 2.80, $P < 0.01$). FSWs practicing anal sex were more likely to experience sexually transmissible infection (STI) related symptoms than those practicing only vaginal sex. There was no association between anal sex practice and condom use. *Conclusions:* Anal sex is associated with STI symptoms, a factor for HIV risk. HIV intervention programmes need to educate FSWs about the risks associated with anal sex.

Additional keywords: prostitution, sexual practices, sexually transmissible infections.

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Introduction

Studies across the globe examining HIV risk transmission dynamics among female sex workers (FSWs) have primarily focussed on risk from peno–vaginal intercourse in the past, paying limited attention to the significance of penile–anal intercourse.^{1,2} Since the early 1990s, researchers have suggested that anal sex can also increase the risk of HIV and other sexually transmissible infections (STI).^{1,3–9} Empirical researches have subsequently demonstrated that anal intercourse carries a higher risk burden than vaginal intercourse even when practiced with a condom.^{5,10–13} Since condoms are generally manufactured for use in vaginal intercourse, the chances of condom breakage are higher if used in anal sex, thus resulting in an increased risk of exposure to HIV and other STIs.^{13,14} Furthermore, a growing body of research also suggests that the high rates of anal cancer could be attributable to the practice of anal intercourse.^{15–17} However, researchers often neglect the importance of anal sex as a determinant of STIs or as one of the outcomes in HIV prevention interventions.¹⁸

Surveys have documented widely varying estimates of anal sex prevalence among sex workers. One study conducted in

Rwanda and Kenya showed that ~5% of FSWs reported ever practicing anal sex,² but many other studies in Kenya indicate higher prevalence levels of anal sex among FSWs ranging between 14% and 40%.^{19–23} A study conducted in South Africa suggests that more than 40% of the FSWs soliciting at truck stops had engaged in anal sex.²⁴ Other research in South Africa suggests that FSWs, on average, engage in five anal sex acts per week.²⁵ These wide variations in the prevalence estimates of anal sex may be due to differences in study inclusion criteria, the recruitment strategy or the reference period for occurrence of the event.

Parallel to global estimates, varying estimates of anal sex prevalence have been reported in studies conducted among FSWs in India. One study conducted in Karnataka, India, estimated that 13% of the FSWs had engaged in anal sex,²⁶ and another small-scale study in a similar setting estimated it to be at 27%.²⁷ In contrast, focus group discussions conducted among 50 sex workers in Andhra Pradesh, India, suggests that ~80% of the FSWs practiced anal sex regularly.²⁸ Empirical research suggests that the practice of anal sex among FSWs is independently associated with age, duration of sex work, number of sexual partners and alcohol use.²

Extensive research on predictors of heterosexual anal sex in the general population is available outside India in other cultural and geographical settings, but it is limited in the context of sex work. In India, although substantial research has focussed on understanding how vaginal sex practices relate to HIV risk, the relationship between anal sex and HIV-related sexual risk factors has not been researched extensively. Also, the Indian studies examining anal sex practices among FSWs are constrained by several limitations,^{27,28} including the failure to identify subgroups of sex workers who were more likely to practice anal sex. The study by Mondal and colleagues²⁷ was limited to examining the prevalence of anal sex among sex workers in Karnataka and lacked advanced analyses to draw statistical inferences on the predictors of anal intercourse. The limitation in analysis could be due to the data collection approach used (the Polling Booth Survey method was used, where responses are collected from a group of individuals and hence cannot be analysed at an individual level). The second study, conducted in Andhra Pradesh by Matheou,²⁸ used the focus group discussion approach with a small sample size of 50 FSWs, which limited the scope for any scientific analysis. As anal sex has been recognised as a marker to vulnerability towards HIV and associated risk factors, it is important to examine the subgroups of sex workers engaging in anal sex and determine whether such practices influence their HIV-related sexual risk behaviours. Therefore, this study has two objectives: (i) to examine the correlates of anal sex practice among FSWs in India and (ii) examine the relationship between practice of anal sex and HIV-related sexual risk factors.

Methods

Study context

This study was based in Krishna and Vizianagaram, two coastal districts of Andhra Pradesh, which is identified as one of the high HIV epidemic states in India²⁹ and where previous studies have reported a high prevalence of anal sex among sex workers.²⁸ The study districts were intentionally selected to include areas where the HIV prevention programmes funded by Avahan, the India AIDS initiative,³⁰ were implemented.

According to census of India, in 2011, Krishna District had a population of 4 529 009, 68% of which is rural.³¹ The population density is 519 individuals per square kilometre and the literacy rate is 74%.³¹ Developmental indicators suggest that 95% of the households in the district have access to electricity, 93% have access to drinking water, 60% have toilet facilities, 46% live in a pucca (concrete) house, 21% of girls wed before the age of 18 years and 77% households have a below poverty line (BPL) card.³² Mapping estimates suggest that in 2009, the district had ~8000 FSWs accounting for 7% of the total sex worker population in the state.³³ The HIV sentinel survey in 2008 estimated an HIV prevalence of 0.7% among women attending antenatal care clinics.³³

The district of Vizianagaram had a population of 2 342 868, 82% of which is rural.³⁴ It has a population density of 358 individuals per square kilometre and literacy rate of 59%.³⁴ Developmental indicators suggest that 79% households have access to electricity, 84% have access to drinking water, 19% have toilet facilities, 34% live in a pucca (concrete) house, 29%

of girls wed before the age of 18 years and 87% had a BPL card at the time of the survey.³² In 2009, 1038 sex workers were mapped in the district, comprising nearly 1% of the state's FSW population.³⁵ In 2008, the HIV prevalence among antenatal clinic attendees was 0.9% and ~12% among walk-in females at Integrated Counselling and Testing Centres.³⁵

Study design

This study utilises data from the Behavioural Tracking Survey (BTS), a cross-sectional behavioural survey conducted among FSWs in 2011 to monitor the key components of the HIV prevention programme: safer sex behaviour, STI treatment-seeking behaviours and community mobilisation. In the BTS, FSWs were defined as females aged 18 years or more who had engaged in sex in exchange for cash in the month before the survey. A sample size of 400 FSWs was estimated for each district, allowing for detection of an absolute difference of 15% or more from the assumed value of 50% for consistent condom use with all clients, with 95% confidence, 90% power and a design effect of 1.7.

Hotspots where FSWs congregate to solicit clients such as brothels, streets, parks, cinema halls and homes were designated to be the primary sampling units (PSUs) in the BTS. A list of hotspots that served as a sampling frame of PSUs was produced by a rapid mapping exercise conducted using key informant interviews with community members and key local stakeholders such as the police and social workers. Each hotspot was mapped to validate the existing list of hotspots developed by nongovernmental organisations (NGOs) for implementing the programme, which helped in validating FSW size estimates and identifying active hotspots with the data provided by NGOs implementing the programme. For each hotspot, data were gathered on the number of FSWs present, segregated by the time slot when sex work was undertaken (e.g. 0900–1500 hours, 1500–1900 hours, etc.) and by type of sex work. The data collected in the mapping exercise were consolidated and finalised after discussions with the NGOs, thus ensuring all the sex work sites in the districts were covered by the mapping team.

Hotspots located in the area covered by an NGO outreach worker for programme implementation were grouped to form a stratum of 200–250 FSWs. The number of interviews to be conducted in each stratum was allocated proportionately according to its size and was further disaggregated within each stratum by type of sex work. In each stratum, FSWs were recruited through a two-stage sampling procedure. In the first stage, a fixed number of PSUs were selected within each stratum using the proportion to population size procedure. The number of interviews to be conducted in each PSU was allocated proportionally. For FSWs based in nonpublic places (brothels, hotels, lodges, roadside eating establishments and homes), the conventional cluster sampling approach was used by selecting hotspots. For FSWs based in public places (streets, market areas, highways and cinema halls), time–location cluster sampling was used, where a hotspot was replicated multiple times to form a cluster for each time slot when FSWs congregate at the hotspot.³⁶ In the second stage, respondents were selected within each selected hotspot.

A total of 1062 FSWs were approached, of which 267 refused participation, resulting in a total analytical sample of 795 FSWs with a response rate of 75%. Sample weights were calculated to account for the unequal selection probability of respondents and nonresponse rates within each PSU. The survey instrument was developed in English and translated into Telugu, the local language of Andhra Pradesh. The translated forms were reviewed by study investigators fluent in both English and Telugu. Trained investigators with verbal and written skills in Telugu conducted interviews.

Ethical considerations

The BTS procedures was reviewed and approved by the institutional review boards of Family Health International and Karnataka Health Promotion Trust. A comprehensive informed consent process was followed, and no names or identifying information were recorded. Interviews took place in locations where women were comfortable and their privacy was assured.

Measures

Sociodemographic and sex work related variables

Single item questions were used to collect sociodemographic and sex work related information. They included age (grouped into three categories: <25 years, 25–34 years and 35+ years), education (recoded into two categories: no formal education and formal education), marital status (recoded into three categories: currently married, formerly married and never married), place where sex work is practiced (rural or urban), source of income being primarily from sex work (recoded into two categories: no and yes), number of working days in a month (recoded into two groups: <15 days and 15+ days), client volume per week (grouped into two categories: <10 v. 10+); place of entertaining clients (grouped into public place-based, home-based and brothel-based); travel outside for sex work (no or yes), heavy alcohol use (consumption of four or more drinks on a single occasion at least once) in past 30 days (no or yes) and experience of physical violence from someone including clients, regular partners and *goondas* (abusive men) in past 12 months (no or yes) were considered. These variables were used as independent variables when examining the associations with anal sex practices.

Anal sex in the last 12 months

All respondents were asked a single item question on whether they had practiced anal sex with any sexual partner in last 12 months, with response categories of 'no' and 'yes'. This variable was used as a dependent variable in the first multivariate model where we explored the correlates of anal sex practice, and as a key independent variable in the series of multivariate models when examining its association with HIV-related sexual risk factors.

HIV risk behaviours

HIV risk was assessed in terms of inconsistent condom use in vaginal sex. Inconsistent condom use in vaginal sex was measured for each of the following three types of sex partners: occasional clients, regular clients, and nonpaying partners. FSWs were asked about the frequency of condom use for

each type of partners with response options of 'always', 'sometimes' or 'never'. FSWs who reported having always used a condom were considered as consistent condom users; others were categorised as inconsistent condom users.

Self-reported STI

Participants were asked if they experienced any genital ulcers or sores or vaginal discharge during the year before the survey. Those who answered affirmatively to any of these symptoms were considered to have suffered from some STI in the year preceding the survey.

Statistical analyses

Univariate, bivariate and multivariate analyses were performed. Multivariate logistic regression analyses were done in two stages: the first was to identify the correlates of anal sex, with the practice of anal sex in last 12 months as the dependent variable; the second was to examine the association of anal sex with HIV-related sexual risk factors, where anal sex has been considered as the key independent variable. We fitted independent logistic regression models for different measures of HIV-related sexual risk factors to predict the effect of anal sex on these risk behaviours. Each multivariate model was controlled for age, education, marital status, source of income being primarily from sex work, number of working days in a month, client volume per week, place of entertaining clients, heavy alcohol use in the past 30 days, experience of physical violence in the past 12 months and travel outside for sex work. The results from logistic regression were presented in the form of odds ratios and their corresponding 95% confidence intervals (CI). All the analyses were performed using STATA ver. 11.1 (StataCorp., College Station, TX, USA).

Results

Sample characteristics

The majority of the survey participants were young women, with a mean age of 29 years (s.d. = 6.2) and had been practicing sex work for 4.5 years on average (s.d. = 3.3). About one-fifth (21%) of FSWs were 35 years or older, and more than half (51%) were currently married. Two-thirds (67%) reported sex work as the only source of income and three-quarters (74%) had been practicing sex work for more than 15 days a month. Three-fifths (60%) were engaged in sex work in urban areas. About 23% of FSWs had travelled outside the district for sex work and 60% reported sex with clients in home-based settings (Table 1).

Anal sex practices

Nearly four-fifths (79%) of FSWs reported that their clients had demanded anal sex, with the average number of clients being 3 of their last 10 clients. One-quarter (23%) of FSWs reported that they had anal sex in the last year. Only 4% of FSWs who had anal sex in last 12 months reported not having used a condom at the last instance of anal sex. The majority of FSWs reported the reason for engaging in anal sex to be for more money (94%), followed by risk of losing clients (22%) and the perception that men finish more quickly (19%) (Table 2).

Bivariate analysis suggests that anal sex in the last 12 months was higher among older FSWs (35+ years) than in younger

Table 1. Correlates of anal sex among female sex workers (FSWs) in the last 12 months in two coastal districts of Andhra Pradesh, 2011
All other variables in the multivariate models were adjusted. District (Krishna or Vizianagaram) was included as a fixed effect in the logistic model. OR, odds ratio; CI, confidence interval

Characteristics	Number of FSWs (<i>n</i> = 795)	% of those who had anal sex	Crude ORs (95% CI)	Adjusted ORs (95% CI)
Current age (years)				
<25	200	12.0	Referent	Referent
25–34	421	24.7	2.40 (1.49–3.88)	1.94 (1.05–3.58)
35+	174	31.4	3.36 (1.97–5.72)	2.05 (1.01–4.16)
Education				
No formal education	470	26.7	Referent	Referent
Formal education	325	17.7	0.59 (0.42–0.84)	0.73 (0.48–1.11)
Marital status				
Currently married	408	15.5	Referent	Referent
Formerly married	331	33.2	2.71 (1.91–3.86)	1.88 (1.25–2.82)
Never married	56	17.7	1.18 (0.56–2.46)	2.49 (1.00–6.16)
Source of income being primarily from sex work				
No	265	20.0	Referent	Referent
Yes	530	29.0	1.64 (1.16–2.30)	1.54 (1.04–2.30)
Number of working days a month				
<15	210	16.7	Referent	Referent
15+	585	25.3	1.68 (1.12–2.53)	1.62 (0.95–2.78)
Client volume per week				
<10	416	19.6	Referent	Referent
10+	379	26.7	1.49 (1.07–2.08)	1.36 (0.93–2.01)
Place where sex work is practiced				
Rural	318	18.9	Referent	Referent
Urban	477	25.8	1.49 (1.05–2.11)	0.80 (0.42–1.52)
Travel outside for sex work				
No	609	21.9	Referent	Referent
Yes	186	26.6	1.29 (0.89–1.89)	0.86 (0.55–1.33)
Place of entertaining clients				
Public places	189	20.8	Referent	Referent
Home	473	22.1	1.08 (0.71–1.63)	1.13 (0.72–1.77)
Brothel	132	29.4	1.59 (0.95–2.65)	1.39 (0.78–2.47)
Heavy alcohol use in past 30 days				
No	588	15.9	Referent	Referent
Yes	207	43.1	3.99 (2.8–5.67)	2.80 (1.87–4.20)
Experienced physical violence in past 12 months				
No	700	19.8	Referent	Referent
Yes	95	46.8	3.56 (2.29–5.56)	2.80 (1.71–4.58)

Table 2. Anal sex and related behaviours among female sex workers in two coastal districts of Andhra Pradesh, 2011

Characteristics	% or mean (s.d.)	<i>N</i>
% clients asking for anal sex	79.2	795
Average number of clients asking for anal sex (of the last 10 clients)	3.1 (2.4)	795
% who had anal sex in last 12 months	23.0	795
% who did not use a condom at last anal sex ^A	4.3	183
% who did not use any lubricant in anal sex ^A	61.4	183
Reasons for practicing anal sex ^A		
More money	94.5	183
Risk of losing clients	22.1	183
Less risk of infection	5.5	183
Men finish more quickly	18.8	183
Enjoy it	2.4	183

^AAmong those who had anal sex in the last 12 months.

FSWs (<25 years) (31% v. 12%, $P < 0.001$), in those with no formal education than in those with some education (27% v. 18%, $P = 0.003$), in those formerly married FSWs than in those

currently married ones (33% v. 16%, $P < 0.001$) and in those with sex work as only source of income than in those who had other sources of income (29% v. 20%, $P = 0.004$). The practice

of anal sex also varied considerably by sex work related characteristics. Anal sex in the last 12 months was higher among FSWs working for 15 days or more in a month than among those working for fewer days (25% v. 17%, $P=0.012$), those with 10 or more clients a week than among those with fewer clients (27% v. 20%, $P=0.018$), those had sex in brothels than among those who had sex in public places (29% v. 21%, $P=0.077$) and in those practicing sex work in urban areas compared to rural areas (26% v. 19%, $P=0.023$). Anal sex was also higher in those FSWs who reported heavy consumption of alcohol in the past 30 days compared to those who did not (43% v. 16%, $P<0.001$) and among those who had experienced violence compared with those who had not (47% v. 20%, $P<0.001$).

The multivariate analysis confirms the findings of the bivariate analysis and suggests that older FSWs were more likely than younger ones to have practiced anal sex (adjusted odds ratio (AOR): 2.05; 95% CI: 1.01–4.16), and formerly married FSWs were more likely to practice anal sex than currently married FSWs (AOR: 1.88; 95% CI: 1.25–2.82). The odds of anal sex practice were also higher among FSWs whose primary source of income was sex work (AOR: 1.54; 95% CI: 1.04–2.30), those who reported heavy alcohol consumption (AOR: 2.80; 95% CI: 1.87–4.20) and those who had experienced violence (AOR: 2.80; 95% CI: 1.71–4.58) than their counterparts.

Association between anal sex and HIV risk behaviours

After adjusting for different demographics and sex work related factors, the data showed that FSWs practicing anal sex were more likely to report experiencing STI-related symptoms in the last 12 months before the survey than those who did not engage in anal sex (27% v. 16%; AOR: 1.85, 95% CI: 1.18–2.88). However, anal sex was not associated with the rate of condom use with different types of sexual partners (Table 3).

Discussion

This cross-sectional study of FSWs in two coastal districts of Andhra Pradesh is one of the first to document the correlates of anal sex practice among sex workers in India and found that a substantial proportion of FSWs practicing anal sex with their clients. The study found that anal sex was more likely to be practiced among FSWs who were more than 25 years old, had been formerly married, gained their income primarily from sex work, had experienced physical violence in last 12 months

and reported heavy alcohol use in last 12 months compared with their counterparts. The research also documented positive associations between anal sex and experiencing STI-related symptoms; however, no statistical association was noted between anal sex practice and inconsistent condom use in vaginal sex.

The study findings on the association between age and anal sex practices corroborates the findings of other studies linking older age to increased anal sex practice.^{1,37} This positive association may be due to fact that old sex workers get fewer clients to entertain than younger sex workers and may fear for their survival in the situation of a reducing number of clients. Hence, such FSWs tend to agree to the demands made by clients, which can range from the type of sex – particularly anal sex – the place of sex or alcohol consumption. This explanation is supported by the findings of the current research with 40% of older sex workers reporting that they had practiced anal sex for fear of losing their clients and that ~75% of the older sex workers reported sex work to be the only source of income. In addition, FSWs who gained income only from sex work were twice as likely to practice anal sex as who had income from other sources as well.

This study's findings of the higher likelihood of anal sex among formerly married FSWs are supported by similar findings from the study by Leynaert *et al.*¹⁰ Though it is not possible to determine whether such FSWs transitioned from currently married to formerly married in last 12 months, it is highly likely that most of these FSWs would have gone through this transition much earlier than 12 months preceding the survey. *Post hoc* analysis suggests that 79% of the formerly married FSWs were either living alone or staying with their children, indicating greater dependence of family members on their income. In such situation, sex workers need to earn more money to contribute to the family income³⁸ either by entertaining more clients or charging more money per client while surrendering to clients' demands. As a large proportion of the formerly married FSWs tend to be in their late 30s, their ability to attract clients may not be that encouraging compared with younger sex workers and hence, these sex workers may agree to clients' demands for anal sex. Further in-depth studies are needed to confirm these assumptions.

The importance of alcohol consumption in the practice of risky sexual behaviour has been well documented by many research studies among sex workers as well as in the general population.^{2,39,40} This study also noted a strong association between heavy consumption of alcohol and anal sex.

Table 3. Associations between practicing anal sex in the last 12 months and HIV risk or vulnerability among female sex workers in two coastal districts of Andhra Pradesh, 2011

Adjusted for respondent's current age, education, marital status, source of income being primarily from sex work, client volume per week, place of entertaining clients, number of working days, travel outside for sex work, heavy alcohol use in past 30 days and experience of physical violence. District (Krishna or Vizianagaram) was included in the model as a fixed effect. OR, odds ratio; CI, confidence interval; STI, sexually transmissible infections

HIV risk or vulnerability	Vaginal sex only	Vaginal sex + anal sex	Crude OR (95% CI)	Adjusted OR (95% CI)
Inconsistent condom use in vaginal sex with occasional clients	24.3	23.6	0.96 (0.65–1.42)	1.09 (0.66–1.78)
Inconsistent condom use in vaginal sex with regular clients	30.2	40.2	1.55 (1.10–2.19)	1.43 (0.94–2.18)
Inconsistent condom use in vaginal sex with nonpaying partner	90.8	91.3	1.06 (0.53–2.13)	0.87 (0.38–1.99)
Experience of STI in the last year	15.8	26.7	1.94 (1.31–2.87)	1.85 (1.18–2.88)

Although information on whether FSWs consumed alcohol before having anal sex was not collected, there is evidence to suggest that they may consume alcohol before sex in general to numb themselves from the pain of anal sex.⁴¹ The research also noted that experience of physical violence was one of the strongest correlates of anal sex, which corroborates the findings of other studies in India and Moscow.^{26,42} Though it is difficult to establish a one-to-one relationship between experiencing violence and anal sex based on a cross-sectional survey, future research should examine the context of this relationship. However, it is clear from the study findings that experiencing violence can create an unsafe environment for a FSW, which can hamper her negotiation power for safer sex; engagement in anal sex may be one of the outcomes of that weak negotiation.

The research findings documented a similar rate of inconsistent condom use among FSWs who reported anal sex versus who did not report anal sex in last 12 months, which is contrary to the other research among sex workers in Rwanda and Kenya.² Furthermore, our study findings suggests that a significantly higher proportion of FSWs engaging in anal sex were more likely to report experiencing STI-related symptoms in the last 12 months. Given no difference in condom use levels, the high rates of STIs may be occurring due to practice of anal sex. Interestingly, majority of FSWs who practiced anal sex reported using a condom at last anal sex. *Post hoc* analysis suggests that ~80% of FSWs practicing anal sex either reported no use of lubricant or used oil-based lubricants like coconut oil or Vaseline in anal sex, which would have increased the likelihood of condom breakage. This is supported by empirical research showing higher chances of condom breakage when a condom is used in anal sex.^{13,14,43} Hence, even though many FSWs used condoms, the protection from STIs may be very minimal and resulting in STIs.

Although the study findings offer important evidences for programme intervention, certain limitations need to be kept in mind while interpreting the results. First, data were collected in a cross-sectional survey and although associations between some of the behavioural measures and anal sex are evident, the cause–effect relationship between them is difficult to establish. Second, previous research suggests that the prevalence of anal sex may be under-reported, as the information was self-reported and the stigma associated with reporting such sensitive experiences is recognised.^{3,44} Third, biological samples were not collected in the survey; instead, self-reported STI symptoms were used as marker for HIV risk. Future research should collect biological samples and attempt to establish the association of anal sex with HIV and other STIs. Next, information on inconsistent condom use in anal sex was not collected in this study; however, it is recommended that future research studies among sex workers in India collect such information to examine the correlates of unprotected anal sex. Further, we suggest that information on risk perception specific to anal sex and anal sex practices by type of partners should be collected to better understand the context of anal sex practices and help programme planners in strategising interventions that are more effective.

The findings of this study have important policy implications. The high rates of STI-related symptoms, particularly anal sores

and ulcers, reported by FSWs engaging in anal sex highlight the need for inclusion of communication messages related to the need for a safer sex environment even during anal sex. The finding that a substantial proportion of FSWs are practicing anal sex in a setting where HIV prevention programmes have been implemented for some time suggests that such interventions have not provided adequate information on the risks of anal sex and the need to abstain from such practices. HIV prevention programmes should educate FSWs on risks associated with anal sex practices in their routine visits to the STI clinics as well as during one-to-one counselling sessions. Special attention is needed in such interventions at clinics to build the skills of FSWs on safer sex negotiation with clients demanding anal sex. From the data, it is evident that FSWs who are in disadvantaged life situations, such as FSWs who are older, formerly married and working in brothels reported anal sex more than their counterparts. In order to make anal sex safer, the peer educators or community collectives needs to work together to educate these disadvantaged sex workers on the HIV risks associated with anal sex and the need for safer sex practices. Furthermore, FSWs who reported anal sex were also the ones reporting heavy alcohol consumption and who had experienced violence, vulnerability factors that need special attention from the programme using structural interventions. Structural interventions such as community collectivisation initiatives need to undertake education campaigns within sex work settings to educate both clients and FSWs on the need for safer sex practice even in anal sex. Further, STI clinics treating both FSWs and their clients could be the place for focussed communication on anal sex and its associated STI risk. In summary, anal sex is practiced by specific subgroups of FSWs, who may be in disadvantaged life situations in India and elsewhere, and may need increased attention from HIV prevention interventions.

Conflicts of interest

None declared.

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