

## Sexual Practices and HIV Risk Profile of Female Sex Workers During COVID-19 Pandemic in Uyo, Nigeria

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### Abstract

Female sex workers (FSW) are among the Human Immunodeficiency Virus (HIV) most-at-risk sub-populations worldwide. During COVID-19 pandemic, movement of people including FSWs was restricted in many parts of Nigeria. This paper reports on a study conducted to determine sexual practices and risk profile among FSWs during the COVID-19 pandemic in Uyo, Nigeria. This study was a cross-sectional study among FSWs at Uyo One-stop-shop for Key Populations from June 2020–August 2020 using a structured questionnaire. Participants were selected using systematic random sampling. Responses to consistent condom use and sexual practices with different categories of clients, prophylaxis use, and adherence were collected. Bivariate analyses were done using the Chi-square test as well as Fisher's exact test while multivariate analysis was with logistic regression analysis and P-value of <0.05 considered statistically significant. 357 FSWs interviewed, but only 344(96.4%) had complete response. 37.2% of the respondents were within the 25-29 years age range and mean (standard deviation-SD) age of 29.06(5.20). 72.4% of the respondents reported they consistently use condoms with first-time clients and 65.7% with repeat clients. 88.7% of the respondents were unmarried and 74.4% have been FSW for  $\leq 5$  years with a mean (SD) duration of 4.95(4.02) years. 47.4% of respondents had unprotected sex when incentivized by clients. Cases of HIV exposure among respondents without prophylaxis were reported by 34.9% and 38.1% of the respondents, respectively. Overall adherence to PEP was 30.9%. A high proportion of FSWs engage in high-risk behaviors. FSWs should be advised on their role in HIV prevention through consistent condom use.

**Keywords:** COVID-19, Female Sex Workers, Pre- and Post-Exposure Prophylaxis, Sexual Behaviours, Sexual Practices.

## **Introduction**

About 80% of Human Immunodeficiency Virus (HIV) incidence in Nigeria result from unprotected heterosexual sex, with most of this occurring in key affected populations such as Female Sex Workers (FSWs) (NACA, 2019). FSWs are attributed Nigeria's about 20% of HIV incidence with only about 23% consistent condom use while plying their trade [1].

FSWs are part of HIV most-at-risk with their prevalence rate higher than what was reported for general population in low- and middle-income countries by 12 times [2]. This risk may have likely increased during the COVID-19 pandemic in view of the economic hardship due to poor patronage and the inability to bargain for safer sex. Speculated drivers of the epidemic among female sex workers are multi-factorial in nature. They include sex with multiple partners, sex without use of protective devices, and untreated co-infection with other sexually transmitted infections (STI) because of their economic vulnerability, which affect their ability negotiate consistent protective sex, and exposure to violence, criminalization by law enforcement agents, and marginalization [3, 4]. In addition to engaging in unsafe sex, data evidence indicated that many reported condom breakages with clients with unknown HIV status. HIV infection prevention interventions among key populations will also benefit the general population by extension, as it reduces the chance of them being infected by their sexual partner(s).

HIV infection is most effectively prevented by methods that reduce exposure to HIV such as consistent and appropriate use of condoms during sex, integrating reduction in high-risk sexual behaviours, and better access to STI treatment [5-8]. Consistent and appropriate use of condoms has been shown to reduce HIV transmission in heterosexual encounters by more than 70% [9]. The combination of HIV pre- and post-exposure prophylaxis (PrEP and PEP) and condom use in an HIV-uninfected FSW doubles the reduction of the risk of acquisition of the disease. As part of efforts to achieve HIV

prevention packages for key populations (FSWs), Transgender (TG), People Who Inject Drugs (PWID), men who have sex with men (MSM) and people in confinement (PIC)) in Nigeria, One Stop-Shops (OSS) were set up to provide specialized services to them across HIV prevention, diagnosis, care and-treatment cascade. OSS distributes condom (for male and female), condom-based lubricants and HIV prophylaxis and treatment of STIs as part of the HIV prevention package [10]. However, sometimes condoms may not be used for several reasons, such as financial inducement from clients, personal choice, or condom breakage [11-13].

The high proportion (20%) of new HIV infections among FSWs could be due to a high-risk sexual exposure without Pre- or Post-Exposure Prophylaxis (PrEP or PEP) use. However, there is a paucity of data and information on the drivers of HIV infection among FSWs in this study area despite their significant contribution to the HIV incidence in Nigeria. To prevent new HIV incidences, there arises a need to study the sexual practices and HIV risk profile of this subpopulation.

The objective of this study was to determine the sexual practices and HIV risk profile of FSWs during the COVID-19 pandemic, to provide information required for the strengthening of HIV prevention interventions for FSWs in Nigeria.

## **Materials and Methods**

### **Study Design, Study Site, and Study Populations**

A cross-sectional study was carried out at One Stop Shop (OSS) located at Uyo, the capital of Akwa Ibom state, South-South of Nigeria. The OSS provides comprehensive HIV and TB prevention, diagnosis, care, and treatment packages for key populations of FSWs, MSM, TG, PWID, and PIC.

Study participants were recruited between June 2020 and August 2020 involving a mixture of brothels and street based FSWs. A sample size

of 357 was used for this study with the deployment of 357 questionnaires, but only 344 of them were suitable for inclusion in the analysis following data cleaning and removal of those without completed responses for key study variables. All respondents were HIV-negative, used the services of the Uyo OSS, and provided written consent to participate in this study. The selection of the study sample was done through systematic random sampling procedure, involving the assignment of sampling units to the target with an equal and known non-zero probability of selection.

### Inclusion and Exclusion Criteria

#### Inclusion Criteria

1. An FSW who uses the services of the Uyo OSS and voluntarily consents to participate in this study.
2. Any FSW who uses the services of the Uyo OSS and was HIV negative at the time of recruitment in this study.

#### Exclusion Criteria

1. An FSW who was already HIV-positive at the time of recruitment in this study.
2. An FSW who was not willing to participate in this study.

Determination of the sample size for this study was by using [14] formula.

Specifically, the formula is:

$$n = \frac{z^2 * pq}{d^2}$$

n= desired sample size.

Z = the value of the normal deviate corresponding to the 95% confidence interval (1.96).

P = the proportion of the target population estimated to have characteristics that were measured; we adopted 72% knowledge.

D = Error margin tolerated at 95% degree of confidence =0.05.

This means:

$$n = \frac{(1.96)^2(0.72)(0.28)}{(0.05)^2}$$

$$n = 3,8416 \times 0.2016 = 0.0025$$

$$n = 0.769$$

$$n = 310$$

The desired minimum study sample size was 310. However, it was adjusted for an estimated 15% number of participants to account for the attrition rate; considering the challenges of discrimination and police harassment of the population studied that makes them scared always and highly mobile. n=357

### Ethical Approval and Written Consent

Akwa Ibom State Ministry of Health Research Ethics Committee reviewed the study proposal and granted ethical approval (approval number AKHREC/19/7/21/034) for the research. All respondents gave their written consent before being recruited for the research. The purpose of the study was highlighted to participants and any potential/perceived impact of participation in the study was explained to the study participants in either English language or local dialect before they participated in the study. Respondents were also given the opportunity to ask questions, seek further clarification concerning the study and voice any perceived concerns about the study. There was a statement on the informed consent form that all data collected will be treated confidentially as only the researchers will have access to data. The study respondents were informed that they could withdraw from the study at any stage and participation in this research study was voluntary and that there will be no physical threats or benefits associated with this study, but there was a probability of discomfort due to the nature of some questions on their occupation. As such, the respondents were free to refrain from answering questions that they were not comfortable with. Those who declined participation after being provided with information about the study were excluded from the study.

Those who met the study inclusion criteria and gave consent by signing the consent forms

to participate were interviewed with the study data collection tool.

### **Data Collection tool**

The instrument used for this research was a structured interviewer administered questionnaire that collected quantitative information on socio-demographic information of the respondents such as marital status, gender, age, highest educational level, type of sexual practices (such as penile-vaginal, oral-genital and anal sexual intercourse) with boyfriends and different categories of clients, HIV high-risk prevention sexual behavior (consistent and appropriate use of condom for sex with clients and boyfriends) and use of prophylaxis (PrEP and PEP). Participants were asked if they used condoms always, sometimes, or never when they had sexual intercourse.

A respondent is said to use a condom consistently if she uses it for every penetrative sexual intercourse while anything short of that was classified as inconsistent condom use. The study questionnaire was pretested in an OSS in Eket, Akwa Ibom state with 36 FSWs (10% of the study sample) before the study data collection from the study participants to ascertain its homogeneity, clarity of the questions, and data collection procedure. Pre-test data were excluded from the data analysis.

All interviews were done in safe and private spaces that ensured confidentiality by the Research Assistants who were engaged from among the study participants and trained for the study.

### **Data Analysis**

The results of the study were analyzed using the Statistical Package for Social Sciences (SPSS version 20). The relative proportions of

sexual behaviours of the respondents were determined, means and percentages of the sample and the standard deviation from the mean were calculated, and frequency tables were created. Chi-square test was used to compare the means of categorical data using Fisher's exact test and the t-test for continuous variables. The association between sexual practices and high-risk sexual behavior for HIV infection was determined. The corresponding *P*-values for each variable were used to determine the level of statistical significance. The level of statistical significance was determined with a *P*-value of < 0.05.

## **Results**

### **Basic Characteristics of Respondents**

A total of 334 (Three thirty four) questionnaires from respondents were considered suitable for inclusion in the analysis as they were fully completed with responses for key variables from the 357 deployed, giving a completeness rate of 96.4%.

Table 1 shows the distribution of respondents by background characteristics. Most of the respondents were unmarried (88.7%) and have been in sex for about 5 years or less (74.4%) with a mean (SD) duration of sex work of 4.95 (4.02) years. About a third (37.2%) of them were within the age range of 25 - 29 years with a mean (SD) of 29.06 (5.20). There was a comparable number of respondents with Secondary (40.1%) and post-Secondary levels of education (made up of those with College, Polytechnic, and University education) (41.9%). However, 62 (18%) had no secondary education made up of those who had never gone to school (3.8%), dropped out of school (10.5%), or had only primary education (3.8%).

**Table 1.** Basic Characteristics of Respondents (n = 344)

<b>Variables</b>	<b>n= 344</b>	<b>%</b>
<b>Age in Years</b>		
<25	63	18.3
25 - 29	128	37.2
30 - 34	108	31.4
>34	45	13.1
<b>Marital status</b>		
Unmarried	305	88.7
Ever Married	39	11.3
<b>Level of education</b>		
No Secondary Level Education	62	18
At least Secondary Level Education	138	40.1
Post-Secondary Level Education	144	41.9
<b>Duration of Sex Work (Years)</b>		
≤5	256	74.4
>5	88	25.6
Total	344	100.0

More than half (52.3%) of the respondents have an average of between 0 – 11 sexual relationships with their customers weekly, greater than 11 sexual relationships weekly was 47.7%. There were more respondents, 183 (53.2%) who engaged in a sexual relationship with an average of 0 - 7 first-time clients per week than those who did the same with >7 first-time clients per week about half (46.8%). One hundred and eighty-eight of the FSWs (54.7%) responded to having sexual relationships with 0 - 3 regular clients per week when compared to

(45.3%) of respondents who engaged in sexual relationships with >3 of their regular clients per week. Similarly, more respondents had 0 – 1 sexual relationship per week who are their boyfriend clients compared to a quarter (25.3%) who had >1 sexual relationship with their boyfriend clients per week. A probe of their engagement in relationships with boyfriend relationships was probed further, 82.0% (282) of the respondents reported that they were involved in boyfriend relationship in addition to the clients they had commercial sex with. (Table 2).

**Table 2.** Respondents' Weekly Sexual relationship with Customers

<b>Variables</b>	<b>n= 344</b>	<b>%</b>
<b>Weekly Sexual Clients</b>		
0 - 11 Clients	180	52.3
>11 Clients	164	47.7
<b>Number of First-Time Sexual Clients per Week</b>		
0 - 7 Clients	183	53.2
>7 Clients	161	46.8
<b>Number of Regular Sexual Clients per Week</b>		
0 - 3 Clients	188	54.7
>3 Clients	156	45.3
<b>Have a boyfriend?</b>		

Yes	282	82.0
No	62	18.0
<b>Number of Boy Friend Clients per Week</b>		
0 - 1 Client	257	74.7
>1 Client	87	25.3

### Condom Use by Respondents

An analysis of overall condom use showed that 77.0% of the respondents used condoms while having sexual intercourse. Similarly, a high proportion (72.4%) of the respondents reported consistent condom use while having sex with first-time clients. More than half (65.7%) of

the respondents consistently use condoms with repeat clients. Of the 278 respondents who reported having boyfriends, condom use and non-use with a boyfriend were 84.6% and 15.4%, respectively. However, more than a third (36%) of this category of respondents had consistent condom use with their boyfriends (Table 3).

**Table 3.** Condom Use by Respondents

Variables	n=344	(%)
<b>Condom Use</b>		
Yes	265	77.0
No	79	23.0
<b>Condom use with First Time Client</b>		
Consistent use	249	72.4
Inconsistent use	95	27.6
<b>Condom use with Repeat client</b>		
Consistent use	226	65.7
Inconsistent use	118	34.3
<b>Condom use with Boyfriend (N=278)</b>		
Consistent use	100	36.0
Inconsistent use	178	64.0

This denominator is the number of respondents who responded to the questions.

### Sexual Behaviour of Respondents

Penile-vaginal intercourse was the most common sexual practice by the study respondents with first-time clients (85.9%), followed by oral-genital sex (8.7%) and anal sex (6.9%). Similarly, penile-vaginal intercourse

was the most common sexual practice by respondents with regular/repeat clients (88.0%), followed by oral-genital sex (16.2%) and anal sex (3.1%). Vaginal sex was also the most common sexual practice among Boyfriend clients (81.7%) as shown in Table 4.

**Table 4.** Forms of Sexual Intercourse Practiced by Respondents

Variables	n= 344	%
<b>Vaginal Sex with First-Time Clients (N=341)</b>		
Always	293	85.9
Sometimes	45	13.2
Never	3	0.9
<b>Oral Sex with First-Time Clients (N=334)</b>		

Always	29	8.7
Sometimes	146	43.7
Never	159	47.6
<b>Anal Sex with First-Time Clients (N=331)</b>		
Always	23	6.9
Sometimes	123	37.2
Never	185	55.9
<b>Vaginal Sex with Regular Partner/Repeat clients (N=342)</b>		
Always	301	88.0
Sometimes	37	10.8
Never	4	1.2
<b>Oral Sex with Regular Partner/Repeat clients (N=334)</b>		
Always	54	16.2
Sometimes	176	52.7
Never	104	31.1
<b>Anal Sex with Regular Partner/Repeat clients (N=327)</b>		
Always	10	3.1
Sometimes	101	30.9
Never	216	66.1
<b>Vaginal Sex with Boyfriend (N=278)</b>		
Always	227	81.7
Sometimes	49	17.6
Never	2	0.7
<b>Oral Sex with Boyfriend (N=274)</b>		
Always	89	32.5
Sometimes	142	51.8
Never	43	15.7
<b>Anal Sex with Boyfriend (N=270)</b>		
Always	61	22.6
Sometimes	96	35.5
Never	113	41.9

This denominator is the number of respondents who responded to the questions.

### **Risky Behaviours among Study Respondents**

One hundred and sixty-three (47.4%) of the respondents reported they engaged in unprotected sex when given some incentives by clients during COVID-19. Generally, almost half of the respondents (45.4%) and 68.5% of them indulge in anal sex and oral sex with clients

(new, regular, or boyfriends). About one-third (30.9%) of the respondents that had ever used PEP reported starting PEP without completing 4 weeks of medication. Cases of HIV exposure among respondents without using PEP were reported by 34.9% of the respondents. Similarly, 38.1% of the respondents reported HIV exposure while not on PrEP (Table 5).

**Table 5.** Risky Behaviour of Respondents

<b>Variables</b>	<b>n</b>	<b>(%)</b>
<b>Engagement in unprotected sex when incentivized by clients</b>		
Yes	163	47.4
No	181	52.6
<b>Engagement in Anal sex</b>		
Yes	156	45.4
No	188	54.6
<b>Engagement in Oral-genital sex</b>		
Yes	236	68.5
No	108	31.5
<b>Started PEP without completing the 4 weeks of medications (n=55)</b>		
Yes	17	30.9
No	38	69.1
<b>Sexual Exposure without use of PEP (344)</b>		
Yes	120	34.9
No	224	65.1
<b>Sexual Exposure while not on PrEP?</b>		
Yes	131	38.1
No	212	61.6
N/A	1	0.3

This denominator is the number of respondents who responded to the questions.

## Discussions

This study found that the majority (77%) of the respondents used condoms during sexual intercourse with their clients, while nearly half (47.4%) of this study's respondents reported engagement in sex without protection when incentivized by clients. Nearly half of the respondents (45.4%) and more than half (68.5%) of the respondents reported indulging in anal sex and oral sex with clients (new, regular, or boyfriend).

This study reported that the majority (77%) of the respondents use condoms during sexual intercourse with their clients. This finding is like that in Majenro, Kenya, by [15] which reported 77% but higher than 63% consistent condom use among FSWs reported in Nairobi Kenya [16]. However, a higher proportion (90.2%) using a condom during sexual intercourse was reported in a Madagascar study [17]. 72.4% of the respondents reported consistent condom use

while having sex with first-time clients. This varied with the report of Deering and colleagues [18-19] that indicated that condom use was often lower with new clients but agrees with the report by [20] that 83.6% of FSWs reported use of condom with their recent clients and by [21] of about 66.6% of FSWs reporting consistent condom use with their clients.

Forty-seven-point-four percent (47.4%) of this study respondents reported engagement sex without protection when clients incentivized them. This high proportion of respondents who accepted more money for sex without protection is worrisome, although this is inconsistent with the findings by [20] that reported 62.4% of the respondents reported consistent use of condoms. That evidence clearly showed a higher proportion compared to 30.6% reported by [22] to have accepted money for a condomless sex and 11.5% reported by [23] in Afghanistan. The acceptance of incentives for unprotected sex by FSWs may be because of the prevailing poverty

situation in the country as fear of hunger may make them more willing to have sex without a condom to get more returns when clients exploit their economic vulnerability [24]. It could also be so that they can have a means of supporting their drug use, so they are not shy to carry out their trade which in turn increases their vulnerability and risk-taking. Generally, almost half of the respondents (45.4%) and 68.5% of them indulged in anal sex and oral sex with clients (new, regular, or boyfriends). This is like the report by [16] which found that 62.5% of respondents practiced oral sex but differs significantly from 6.4% that practiced anal sexual intercourse and that by [25] with 3.7% and 19.6% who reported having anal and oral-genital sex with regular clients respectively. Our results show 30.9% incomplete PEP compliance (starting PEP without completing 4 weeks of medication) among the respondents that reported having ever used PEP. Previous studies in many climes found a comparably low PEP compliance of 20%–50% among victims of coerced sex as well as health workers [26-28] and others found higher compliance of up to 95% [29]. A higher proportion (82.9%) of PEP users in our study cited side effects followed by stigma as the main reason for noncompliance with the treatment, which is like was reported in previous studies [30-33]. [34] reported that only 35.7% of their study respondents who accessed PEP completed the full course of medication, with those who did not complete it more likely to report prior unprotected sex with their client. FSWs being a highly mobile, stigmatized, and criminalized sub-population involved an alcohol- and drug-dependent trade may require an additional counseling to address their diminished risk perception over time thereby improving their PEP adherence. In addition, batching of the PEP doses to increase their visit to at least twice during the period of taking them may increase adherence to the medication.

Cases of being exposed and not using PEP or not being on PrEP were reported by 34.9% and 38.1% of the respondents, respectively. Reasons

for this could be due to clinic access, especially during weekends which is the peak time of sex work, and client factors (too busy to go to the clinic). It will be helpful for PEP availability to be expanded beyond the normal clinic working hours to include weekend access.

## **Conclusion**

A high proportion of FSWs engaged in higher-risk behaviors during the COVID-19 pandemic: they practiced unprotected sex and will not use a condom if their partner refuses to use or give them incentives. Current strategies for HIV prevention focusing on the empowerment of females taking a dominant role in sexual decision-making, especially in the negotiation of condom use, do not fully address the complex nature of transactional sex work. FSWs should be encouraged to take greater responsibility for their role in the prevention of HIV by strengthening preferences for condom use to maintain high levels of safer sex.

## **Limitations**

A limitation of this research study is that the data were self-reported by the study participants. This limited the study because participants may or may not have truthfully reported responses to the survey questions and may be biased in the responses they provided. Participants may have provided answers that they believe to be desired by the researcher to the questions and are expected from them.

## **Conflict of Interest Statement**

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report. We certify that the submission is original work and is not under review at any other publication.

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