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# Socioeconomic and cultural factors driving Human Immunodeficiency Virus epidemic among female sex workers in Akwa-Ibom (South-south) and Benue (North-central) States of Nigeria

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**ABSTRACT:** This study was aimed at finding out the socioeconomic and cultural factors driving Human Immunodeficiency Virus infection (HIV) epidemics among Female Sex Workers (FSW) in South-south (Akwa-Ibom) and North-central (Benue) States where the infection prevalence is high in Nigeria. A standardized survey instrument was used in multistage cluster sampling approach in Benue and Akwa-Ibom States using sample size of 415 FSW. The study was done on the classified age brackets between 15 and 49 years with Akwa-Ibom having more participants at 20 to 24 years (32.8%) and Benue at 25 to 29 years (33%). Medical Laboratory Scientists equally carried out three (3) stage HIV testing Algorithm among the FSWs under the study. FSWs were subtyped into Brothel-based Female Sex Workers (BBFSW) and Non-Brothel based Female Sex Workers (NBBFSW). Human Immunodeficiency Virus prevalence in Nigeria from the study is 15.5% with Akwa-Ibom having 11.4% while Benue has 20.2% of their population among Female Sex Workers key population typology respectively. Significant differences exist between the two states in the various socioeconomic factors driving the epidemics among Female Sex Workers. For instance, knowledge of HIV status, knowledge of source of HIV Testing Services (HTS) or medication for Acquired Immunodeficiency Syndrome (AIDS), referrals, knowledge of HIV indicators, their risk perception, knowledge and use of Post-Exposure Prophylaxis (PEP) and Pre-Exposure Prophylaxis (PrEP), stigma and discrimination and age at sexual debut, stigmatization, knowledge, use of PEP and PrEP, inconsistent use of condom, less risk perception and use of alcohol are some of the key factors driving the increased prevalence of HIV among FSW in Akwa-Ibom and Benue States in Nigeria.

**Keywords:** Akwa-Ibom, Benue, Brothel-Based Female Sex Workers, cultural factors, Female Sex Workers, HIV Testing Services, Human Immunodeficiency Virus, Prevalence, Nigeria, Non Brothel Based Female Sex Workers , socioeconomic.

## INTRODUCTION

Human Immunodeficiency Virus infection has continued to be a major Global Public Health challenge issue, having

claimed 36 million (27.2 -47.8 million) lives so far. Since the beginning of the epidemic, 79.3 million (55.9 to110 million) people have been infected with the HIV virus. Globally, 37.7 million (30.2 to 45.1 million) people were living with HIV at the end of 2020. An estimated 0.7% (0.6 to 0.9%) of adults aged 15 to 49 years worldwide are living with HIV, though the epidemics' burden continues to vary considerably between countries and regions (Romana et al., 2020).

The WHO African regions remains most severely affected, nearly 1 in every 25 adults (3.6%) living with HIV and accounting for more than two-thirds of the people living with HIV worldwide. The vast majority of people living with HIV are in low and middle income countries. In 2020, there were 20.6 million people living with HIV (55%) in Eastern and Southern Africa, 5.7 million (15%) in Asia and other pacific, 4.7 million (13%) in western and central Africa and 2.2 million (6%) in Western and central Europe and North America (Global HIV and AIDs statistics- Fact Sheet, 2021).

Nigeria has not less than 200 million people as the population size. Nigeria has a fast-growing HIV epidemic. UNAIDS estimated that around two-third of the new infection in West and Central Africa in 2017 occurs in Nigeria. This occurrence has placed the country as the second largest HIV epidemic in the world. It is suggested by United Nations program on HIV/AIDS (UNAIDS) that 50% of all new infection worldwide occur in people from key population sub-group (UNAIDS, 2019; NACA, 2015).

In 2016, it was estimated that 14.4% of FSW were living with HIV in Nigeria. In another survey conducted in 2010, it was estimated that 24.3% of FSW were living with HIV. HIV prevalence among sex workers is still eight times higher than the general population. There are a number of factors that make sex workers more vulnerable to HIV. In 2010, HIV prevalence was higher among female sex workers at 24.3% compared to male (NACA, 2017; FMOH, 2014).

Olaleye et al. (2020) is relating risky sexual behavior of young people such as sex workers with several socioeconomic and cultural factors including personal reasons. Awofala and Ogundele (2018) described female sex workers (FSW) as the high risk of individuals in the spread of HIV in Nigeria based on their risky behaviors. Udeh et al. (2016) did not mince words when stating that "HIV is a sociocultural and socioeconomic disease in Nigeria, and the paradigm of its infection and spread particularly within the local communities is a reflection of the sociocultural and socioeconomic profile of the people". Akoku et al. (2018) in Cameroun emphasized that socio-economic vulnerabilities on the part of transactional sex among females drives the HIV infection.

Thus, the main aim of the study was to obtain serological and critical behavioral information based on socioeconomic and cultural practices within the HIV epidemic among the key population, the Female Sex Workers (FSW) using Integrated Biological and Behavioral Sentinel Survey (IBBSS).

## METHODOLOGY

### Ethical approval

National Health Research & Ethic Committee (NHREC) in Nigeria and the University of Manitoba Ethical Review Board (ERB) in Canada gave the ethical approval. Informed consent were equally gotten from the participants. The NHREC protocol number is NHREC/01/01/2007-18/08/2020 while the NHREC Approval Number – 01/01/2007-25/08/2020.

### Study area

Akwa-Ibom and Benue States where female sex workers (FSW) are found in line with the typology mapping.

### Inclusion and exclusion criteria

Any woman (female sex at birth) of age 15 years and above, who received money or gifts in exchange for sexual services, either regularly or occasionally in the 12 months preceding this study shall be included. Also, the Brothel based FSW (FSW who work in and through brothels) and non-brothel based FSW (FSW who do not work in brothels but congregate at bars, streets, hotels, massage parlors and other defined spot typologies) was included. Other Female Sex Workers outside this definition were excluded in the study.

### Sample size

The following formula was used to determine the sample size for FSWs:

$$n = \frac{[\sqrt{2P(1-P)Z_{1-\alpha}} + \sqrt{P_1(1-P_1) + P_2(1-P_2)Z_{1-\beta}]^2}}{\Delta^2}$$

D = design effect, P1 = estimated prevalence at baseline (varied for different groups), P2 = expected prevalence in future (detect a change of 15%), P = (P1 + P2)/2, $\Delta$2 = (P2 – P1)2, Z (1-$\alpha$) = 95% level of significance, Z (1-$\beta$) = Power of the study set at 80%.

Table 1 provides the crude and final sample sizes for FSWs for an expected change of 15% from the baseline as used with a higher design effect of 3. Finally, 411 and 415 FSWs were the sample sizes in Akwa-Ibom and Benue respectively as presented in Table 2.

### Behavioural data collection

The well-trained state field team members for the 2020 IBBSS survey used a structured questionnaire adapted from IBBSS 2014 and improved upon using the Global Bio-

**Table 1.** Samples sizes for FSW.

| KP | Behavioral risk factor | Estimated prevalence (%) | Design effect | Crude sample | Sample adjusted by 10% |
|---|---|---|---|---|---|
| FSW | consistent condom use | 68% | 3 | 378 | 415 |
| | condom use at last sex | 92% | 3 | 273 | 301 |

KP – Key population, FSW – Female sex workers.

**Table 2.** Minimum detectable size of samples.

| KP | Sample size | HIV prevalence (baseline) | Minimum Detectable Size (+/- HIV prevalence in %) | | |
|---|---|---|---|---|---|
| | | | State | Pooled (region) | National |
| FSW | 415 | 14.0* | 3.9 | 2.8 | 1.1 |

*Average HIV prevalence of brothel and non-brothel-based FSWs.

**Table 3.** Percentage distribution of FSW respondents by states and by age group.

| States | 15-19 | 20-24 | 25-29 | 30-34 | 35-49 | 50+ | No. studied |
|---|---|---|---|---|---|---|---|
| Akwa Ibom | 10.7 | 32.8 | 25.5 | 18.2 | 12.7 | 0 | 411 |
| Benue | 6.3 | 30.4 | 33 | 17.3 | 13 | 0 | 415 |

**Table 4.** HIV Knowledge indicators by states (%).

| Parameters | States | |
|---|---|---|
| | Akwa Ibom | Benue |
| Healthy looking person can have HIV | 96.8 | 99.3 |
| HIV transmitted by used needle | 96.1 | 96.1 |
| Consistent condom use | 96.8 | 75.7 |
| Transmission from mother to child | 93.9 | 98.3 |
| Sexual abstinence to prevent HIV | 95.1 | 71.1 |

behavioral Survey Guideline “Bluebook” (2017) to collect the required data from FSWs in the study states.

### Biological data collection (HIV Testing)

Blood samples for HIV antibody testing were collected and approved algorithm used in the testing, i.e. the National HIV testing Algorithm, with three (3) stages algorithm using Determine, Uni-gold and Start-park. Also, pre-test counselling, post-test counselling and debriefing session were actually done on the subjects.

### Data analysis

The data from the tests and questionnaire were analyzed in percentages and presented in Tables 1 to 14.

## RESULTS AND DISCUSSION

The result are presented in Tables 3 to 14 based on various key population indicators tested. Socioeconomic and cultural factors drive infections and HIV among FSWs in Akwa-Ibom and Benue States. In consideration to the risk perceptions of Benue (58.6%) and Akwa Ibom (35.0%), it could be substantiated. In Tehran, Iran, Shushtari et al. (2019) reported 77% risk perception which is higher than Benue and Akwa Ibom. Also, Ankomah et al. (2011) reported high risk perception among Nigerian FSWs.

Oyefara (2007) established that hunger and need for money have been attributed for the reasons given by FSWs leading to the high risk behaviours. The level of high risk perception might have contributed to the level of STIs reported in Benue (58.6%) and Akwa Ibom (48.7%) and agrees with Ankomah et al. (2011) and Shushtari et al. (2019).

Though their knowledge base about female condom was high, Akwa Ibom (92.9%) and Benue (86.8%), their respective use of condom is still very low (35.5% and 28.8%) in addition to levels of inconsistence in the use of condom with clients.

In consideration of the age of FSWs participant in the

**Table 5.** Self-reported STI symptoms in the last 12 months by States (%).

| Parameters | States | |
|---|---|---|
| | Akwa_Ibom | Benue |
| Genital discharge | 28.0 | 44.3 |
| Burning pain on urination | 6.8 | 30.8 |
| Genital ulcers/sores/rash | 5.1 | 1.4 |
| Swellings in groin area | 1.5 | 1.0 |
| Itching of the genitals | 29.7 | 49.9 |
| Swelling around the anus/anal warts | 1.2 | 0.5 |
| At least one STI symptom | 48.7 | 58.6 |

**Table 6.** Source of STI treatment by States.

| Parameters | States | |
|---|---|---|
| | **Akwa Ibom** | **Benue** |
| Friend/family member | 1.2 | 0.4 |
| NGO | 1.2 | 15.3 |
| No response | 0.0 | 0.0 |
| Others | 0.0 | 0.0 |
| Pharmacy /chemist | 55.9 | 28.8 |
| Private hospital | 27.1 | 17.0 |
| Public hospital | 13.5 | 37.6 |
| Traditional healer | 1.2 | 0.9 |
| Total | 170 | 229 |

**Table 7.** Risk Perception.

| States | Risk perception (%) |
|---|---|
| Akwa Ibom | 35.0 |
| Benue | 54.2 |

**Table 8.** Female condom use by States.

| States | % Ever heard of female condom use | % Ever used female condom |
|---|---|---|
| Akwa Ibom | 92.9 | 33.5 |
| Benue | 86.8 | 28.1 |

**Table 9.** Types of information or HIV/AIDS services received from an outreach worker/peer educator in the past 12 months by states.

| Parameters | States | |
|---|---|---|
| | **Akwa Ibom** | **Benue** |
| Free condoms | 72.8 | 83.2 |
| Education on safe sex | 86.0 | 77.9 |
| Education on safe injection | 2.6 | 1.3 |
| Needle/syringe | 6.1 | 1.3 |
| Referral for STI services | 2.6 | 65.0 |
| Referral for HTS services | 3.5 | 54.0 |

study, the percentage of ages from 15 to 29 years is very high. This sends a strong signal that control of HIV may still take a very long time because the ages belong to the younger generation of females. This also links to the age of sexual debut (Benue-53.5% and Akwa Ibom-48%) for ages less than 17 years and invariable indicate the ages

**Table 10.** Percent of FSW ever heard of PEP and ever taken PEP by states.

| States | Ever heard of PEP | Number | Ever taken PEP | Number |
|---|---|---|---|---|
| Akwa Ibom | 54.3 | 411 | 2.7 | 223 |
| Benue | 38.8 | 415 | 21.7 | 161 |

**Table 11.** Percent of FSW ever heard of PrEP and ever taken PrEP by state.

| States | Ever heard of PrEP | Number | Ever taken PrEP | Number |
|---|---|---|---|---|
| Akwa Ibom | 27.3 | 411 | 17.0 | 112 |
| Benue | 43.1 | 415 | 22.3 | 179 |

**Table 12.** Stigma and discrimination (FSW) by states.

| Parameters | States | |
|---|---|---|
| | Akwa_Ibom | Benue |
| People sometimes talk badly about PLHIV to others | 78.8 | 61.7 |
| Health workers sometimes talk badly about PLHIV to others | 28 | 29.6 |
| PLHIV lose respect or standing | 75.9 | 38.3 |
| PLHIV are verbally insulted, harassed and/or threatened | 71.8 | 26.3 |
| People sometimes disclose that other people are HIV positive without their permission | 80.8 | 69.4 |
| Health workers sometimes disclose that other people are HIV positive without their permission | 25.3 | 37.8 |
| Will choose not to seek services associated with HIV positive people because of fear of stigma | 28 | 5.3 |
| Total | 411 | 415 |

**Table 13.** Age at sexual debut by states.

| States | <15 | 15-17 | 18-19 | 20+ | Total |
|---|---|---|---|---|---|
| Akwa_Ibom | 7.1 | 40.9 | 21.7 | 30.4 | 411 |
| Benue | 4.1 | 49.4 | 31.1 | 15.4 | 415 |

**Table 14.** Condom use by partner type by states.

| Parameters | States | | Total |
|---|---|---|---|
| | Akwa Ibom | Benue | |
| Regular partners | | | |
| Condom use at last sex | 60.6 | 76.5 | 53.4 |
| Consistent condom use in the last 6 months | 37.0 | 48.2 | 34.1 |
| N | 297 | 307 | 2,717 |
| | | | |
| Casual partners | | | |
| Condom use at last sex | 89.4 | 80.9 | 87.2 |
| Consistent condom use in the last 6 months | 35.8 | 59.2 | 57.9 |
| N | 179 | 152 | 1,578 |
| | | | |
| Client | | | |
| Condom use at last sex | 96.1 | 73.5 | 91.0 |
| Consistent condom use in the last 6 months | 68.4 | 42.2 | 70.1 |
| N | 411 | 415 | 4,974 |

of marriage (early marriage) and involvement with sex works. This agrees with Melesse et al. (2021) in sub Saharan Africa. Early sex debut age associates with HIV and STIs prevalence (Shrestha et al., 2016; Ma et al., 2009), out of school, alcoholism and idleness. These factors including idleness could contribute to the attraction towards hotels, bars and restaurants that exposes the subjects to sexual works and high risk behaviors. It is therefore imperative to put up a very strong effort, strategies and policies to ensure delaying sexual debut as it will ensure risk reduction in Benue and Akwa Ibom states. This is supported by some studies (Onsomu et al., 2013; Oladepo and Fayemi, 2011).

## Conclusion

Some sociocultural factors found in Akwa Ibom and Benue states such as early to sex (sex debut) and as well as early marriages, alcoholism, quest for financial gains and freedom, inconsistency in use of condoms may be contributing to the drive of HIV infections in the states. Policies should be formulated, developed and implemented towards raising the age of sex debut and engaging the adolescents in education and hand work so as to reduce their number in sex works. This invariably shall reduce the prevalence of HIV contributed by FSWs in Akwa Ibom and Benue states.

## COMPETING INTERESTS

The authors declare no competing interest.

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