




Research Article

Assessment of Stigma, Violence and Coping Mechanisms Among HIV Infected People Who Inject Drugs in Akwa-Ibom State, Nigeria

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Abstract

People who inject drugs (PWIDs) living with HIV face high levels of stigma, violence, and rape due to their risky lifestyles, potentially facilitating the spread of HIV. This study assessed the level and type of stigma and violence among PWIDs attending Heartland Alliance in Akwa Ibom State and their coping mechanisms. This descriptive cross-sectional study of 442 PWIDs receiving care at four one-stop shops in the state was conducted using mixed methods. Quantitative data were collected through pretested structured questionnaires and an adopted stigma scale, administered by trained research assistants using Computer Assisted Personal Interviewer (CAPI). For qualitative data, one focus group discussion (FGD) was held at each site with 8-10 purposively selected PWIDs, and transcripts were analyzed thematically. The study findings reveals that most respondents were male (78%) with a mean age of 32.7 ± 7 years. Pentazocine use was common (52%), and 18% shared needles, with 15% sharing blood after injections among friends. More than half (58%) missed more than one dose of ARVs in the past week. Perceived stigma (59%) was more common than internal stigma (18%), with predictors being student status, non-disclosure of HIV status, and non-adherence to treatment. PWIDs Physical violence (47.5%) and verbal abuse (37.1%) were prevalent among PWIDs. Female PWIDs had a ninefold higher risk of rape. Coping mechanisms included isolation, increased substance use, battle readiness, and positive reframing. *Conclusion:* PWIDs face significant levels of stigma, violence, and non-adherence, jeopardizing treatment outcomes and perpetuating STI, HIV, and blood-borne infection transmission. Establishing harm-reduction programs is essential to address these vulnerabilities and the consequences associated with drug use.

Keywords

People Who Inject Drugs, Stigma, Violence, Coping Mechanism

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1. Introduction

People who inject drugs (PWID) are vulnerable to HIV infection, which is 22 times higher than the general population. [1] Approximately 13.1% of the estimated 11.8 million people who indulge in an injection of drugs worldwide are infected with HIV. [2] Each year, people who inject drugs account for 10% of new HIV infections, even though they constitute a marginal proportion of the global population. [3] Although members of this population have an elevated mortality risk compared to people who do not inject drugs, the risk of death among PWID in low and middle-income countries (LMIC) is disproportionately higher than in high-income countries. [4]

Nigeria, the most populous country in Africa, accounts for the highest number of people who inject drugs in the West African region. [5] Approximately 80,000 of the estimated 376,000 high-risk drug users had injected drugs within the preceding year, and up to 9% of all PWID are infected with HIV, indicating an increase from the 3.4% reported in 2014. [6] A mixed HIV epidemic is experienced in Nigeria, evidenced by the relatively high prevalence of HIV in both the general population and sub-populations, such as key populations. [7] Recent data showed that the HIV epidemic among PWID is alarming, with a prevalence as high as 11% compared to 3.4% of the general population. [8] Female IDUs had about seven times higher HIV prevalence than their male counterparts. [9]

Stigma is an essential social determinant of health that drives morbidity, mortality, and health disparities. [10] Aside from their potential vulnerability, people who inject drugs suffer social exclusion, prejudice, stigma and discrimination, even when the negative consequences of drug use are not visible. [11] Stigma entails labelling, stereotyping and perceiving an individual's characteristic as inconsistent with the social norm and expectations of the majority. [12] Whether enacted (external) or internalized (self-stigma), stigma is described as a negative process of demeaning an individual in the eye of others [13] or being held in contempt, shunned or rendered socially invisible because of a socially disapproved status. [11] The endpoint of these unfair and unjust actions toward an individual or group is regarded as discrimination. [14]

The stigmatization of PWIDs is rapidly gaining recognition as a serious public health concern. PWID infected with HIV suffer high levels of stigma in various forms, such as delay or denial of access to HIV preventive and treatment services, [15] judgmental comments blaming patients for their status or making assumptions about their HIV status based on high-risk behaviours associated with HIV; [12] segregation in healthcare settings, use of unnecessary precautions by providers, and unauthorized disclosure of HIV status. [16] Studies have shown that stigma is a major driver (potentiate) of the HIV epidemic. It can serve as a significant barrier to access and uptake of HIV treatment or other interventions. [17-20] Discrimination, and institutional stigma have been reported in healthcare settings, making it difficult for PWID to demand

and access required support from health facilities. [14] People who inject drugs encounter varying degrees of stigma in health facilities, including rejection, negative stereotypes and poor attitude from healthcare providers; [21] delayed and sub-standard medical care for drug overdose; [22] physical abuse, inadequate time spent on their needs, and being left in extreme pain for a prolonged time. [12] The People Living with HIV Stigma Index for Nigeria reported that 20% have been denied access to health services, 26% have lost a job or source of income due to their HIV status, 19% have experienced a violation of their rights, and more than one in five reported breaches in confidentiality of their HIV status by health professionals. [23] Studies suggest that stigma related to injection drug use negatively affects the uptake of harm reduction and health-related services. [22, 24-27]

HIV-positive People Who Inject Drugs (PWID) represent a highly vulnerable subgroup within the PWID community. Their elevated risk of violence is compounded by a reluctance to access services due to the fear of encountering double stigma and discrimination. [28] Violence constitutes a violation of human rights, heightening the risk of HIV and reducing service uptake among PWID. [28] There is also evidence indicating that the criminalization of drug use escalates both violence against People Who Inject Drugs (PWID) and their HIV incidence. [28] International guidelines emphasize the importance of incorporating measures to address violence within HIV programs for People Who Inject Drugs (PWID). [29] PWID employ various coping strategies to tackle stigma and violence, and these strategies range from exploring their creativity and finding strength in their community. [30] Despite the HIV epidemic being propagated by drug use in Nigeria, few studies have examined stigma related to HIV and PWID, violence experienced and coping mechanisms. This study, therefore, seeks to bridge the knowledge gap and serve as a basis for effective HIV programming for this key population in Akwa Ibom State. The study aims to assess the level and type of stigma and violence experienced and assess the coping mechanism employed by HIV-positive PWIDs in Akwa Ibom state.

2. Methodology

2.1. Study Area

Akwa Ibom state, located in southern Nigeria, covers an area of 7,249 square kilometres and has about 13.4% of Nigeria's Atlantic Ocean coastline. It comprises 31 Local Government Areas, with Uyo as the capital and other major towns like Eket, Ikot Ekpene, and Oron. The state is the highest oil and gas-producing state in Nigeria. The population, estimated at 5.67 million in 2017, is culturally homogenous, primarily consisting of Ibibio, Annang, and Oron tribes, with English as the official language for government and commerce. Eco-

conomic activities include farming, fishing, trading, blue-collar services, and a robust public sector employing a significant portion of the state's labour force. The annual population growth rate is projected at 3.4%. [31-33]

2.2. Study Setting

The study was conducted within Heartland Alliance Limited by Guarantee (HALG) Nigeria One-Stop-Shop (OSS) in Akwa-Ibom. HALG is a nonprofit, nonpartisan, nonsectarian organization that is service-based. The organization is committed to protecting and promoting the rights of extremely vulnerable populations through an inclusive approach to comprehensive health, social, and economic justice. In Nigeria, HALG is one of the largest USAID-funded HIV programs for key populations currently implementing the Key Populations Community HIV/AIDS Action and Response (KP-CARE 1) project (2019 to 2024) across six states (Akwa-Ibom, Cross River, Lagos, Bayelsa, Niger, and Jigawa), with a Regional Office in Akwa-Ibom. One primary objective of the KP-CARE 1 project is to reduce HIV incidence, morbidity, and mortality among KPs as well as their sexual partners and children by increasing their access to and success in HIV prevention, diagnosis, and treatment by addressing the biological, social, and structural drivers of the epidemic using human rights principles and sustainable, peer-led approaches. About 70% of HALG's services are provided to KPs through virtual Focal Service Providers (FSPs), Community ART (cART) teams and outreach workers. In contrast, the remaining 30% is offered within physical One-Stop-Shops (OSS). In Akwa-Ibom, HALG has 4 OSS in Uyo, Ikot Ekpene, Oron and Eket, and several Local Governments (LGs) clustered around each OSS. The OSS offers comprehensive healthcare services, which include HIV/AIDS/PEP/PrEP, Tuberculosis, Cervical cancer, Viral hepatitis, Gender/post-GBV care, Mental Health and Harm Reduction services, Sexual and Reproductive health and rights, Human rights interventions, Advocacy and Capacity building.

2.3. Sampling and Recruitment

2.3.1. Study Design

This study was a descriptive cross-sectional study of all persons who inject drugs (PWID) living with HIV and are receiving care in HALG OSS in the state, using a concurrent mixed data collection method. Non-consenting PWIDs and those too sick to participate in the study were excluded.

2.3.2. Sample Size Determination

A single proportion formula for sample size determination was used with a standard normal deviation of 1.96 and a 5% margin of error. A proportion of 50% was adopted to obtain a maximum sample size of 384. With a non-response rate of

10%, the adjusted sample size was rounded up to 430.

2.3.3. Sample Technique

This number was recruited across four HALG OSS. The estimated sample size was proportionally allocated to each of the four clusters. Thirty percent (30%) of the allocation was recruited consecutively at the OSS among PWIDs coming to the facility, and the remaining 70% were recruited in the hotspot areas consecutively along with the LG FSPs as they provide services to the clients within the cluster.

2.3.4. Instrument

A structured questionnaire was designed by the researcher specifically for PWIDS, and a tool was adapted from research instruments used by Zeng in 2018 to assess stigma (The perceived and internalized stigma scale). [34] This was grouped into five sections: (1) Background information, (2) Sexual history (number and types of partners, casual and transactional sex and use of condom), (3) HIV stigma and discrimination (perceived and internalized stigma scale), (4) Violence in all forms including rape, and (5) STI and treatment seeking behaviour.

2.3.5. Measures

The quantitative analysis of this survey encompasses measures about incidents of sexual assault or rape ranging from one month to over a year, along with related factors such as the identities of the perpetrators. Concurrently, a similar assessment was conducted for instances of physical assault within the same timeframe. The response to the perceived and internal stigma scale is 1-4, where 1=strongly disagree, 2=disagree 3=agree and 4= strongly agree. The total score ranges from 14-56; the higher the score, the more the stigma. Perceived stigma subscale ranges from 6 to 24, with 15 as the cut-off, and the internalized stigma subscale ranges from 8 to 32, with 20 as the cut-off. The median score (35) was a cut-off for low- and high-level stigma.

2.4. Data Collection Procedure

Trained research assistants were used to administer the questionnaire to the respondents using Computer Aided Personal Interview (CAPI). The training was intensive and addressed computer-aided personal Interviews, interviewing the respondents using the respective tools, and ethical issues. The data collection lasted for about two weeks.

2.5. Data Analysis

Data were cleaned, transferred into a spreadsheet, and analyzed using IBM-SPSS version 27. The categorical variables were expressed in frequencies and proportions, and

continuous variables were summarised using averages and the appropriate measures of dispersion. Relationships with the level of stigma and vulnerability status were determined using chi-square, and multivariate analysis was used to eliminate confounders for variables with a P-value of less than 0.1 at the bivariate level. The level of significance was set at 5%. Results were presented in tables and charts.

2.6. Qualitative Study Framework

2.6.1. Sample Size

In Each OSS, 10% (10-12) PWID respondents were purposively selected for the qualitative survey. These persons were not further recruited for the quantitative survey. One FGD was conducted per OSS location.

2.6.2. FGD Sessions

Each FGD session consisted of 8-10 homogenous cohorts of PWIDs. The FGD was conducted within the premises of the OSS in a round table-sitting arrangement and lasted between 60 and 90 minutes. The language of communication was *pidgin* English. Trained health workers were used to moderate the FGD sessions (a moderator, note taker and timekeeper). A three-item guide that was used to explore stigma or discrimination experienced as a PWID, the coping strategies with sigma and vulnerabilities to violence.

2.6.3. FGDs Analysis

Transcripts from the FGDs were analyzed using content analysis and presented along the themes *experienced and perceived stigma, different ways of coping with stigma, and vulnerability to violence*.

3. Quantitative Findings

The study comprised 442 PWIDs with a mean age of 32.7 ± 7.0 years. Table 1 presents the demographic and HIV-related information for PWIDs attending HALG in Akwa Ibom State. Most participants were between ages 30-39 (43.9%), followed by those aged 20-29 (37.6%). The respondents were predominantly male (74.7%); the largest group has completed secondary education (46.2%), followed by those who have completed tertiary education (21.9%). Most participants were single (66.3%), with a smaller percentage being married (21.5%). The largest group was unemployed (37.8%), followed by artisans (30.5%). Most participants missed more than one dose of ARV medication in the past week (58.4%), while 34.4% did not miss any doses. A small percentage missed one dose (7.2% and 81.9% have not disclosed their status. Among those who have disclosed, 61.3% disclosed to their partners, followed by parents or family members (30%).

Table 1. Socio-demographic characteristics, treatment adherence and HIV status disclosure of the PWIDs attending HALG, Akwa Ibom State.

Variables	Frequency (n=442)	Percentages
Age (years)	20-29	166
	30-39	194
	40 and above	82
Sex	Male	330
	Female	112
Level of education	No formal education	52
	Primary completed	89
	Secondary completed	204
	Tertiary completed	97
Marital status	Single	293
	Married	95
	Separated/divorced	43
	Widow/widower	11
Occupation	Artisan	135
	Civil servants	39
	Professional	32

Variables		Frequency (n=442)	Percentages
Number of ARV doses missed in the last 7 days	Students	52	11.8
	Unemployed	167	37.8
	Others	17	3.9
	None	152	34.4
	One	32	7.2
	More than one	258	58.4
Have disclosed status	Yes	80	18.1
	No	362	81.9
Person disclosed status to (n=80)	Partner	49	61.3
	Parents/family members	24	30
	Friend	5	6.2
	Others	2	2.5

Table 2 provides information on substance use among PWIDs attending HALG in Akwa Ibom State. Most participants use injectable drugs (97.5%); the most commonly used drug was Pentazocine (53.6%), Heroin (46.2%), Morphine (26.2%), and Amphetamine (14.9%). The primary reason for taking injections is to feel high (47.0%), followed by coping with a hard job (21.3%), feeling a sense of belonging among friends (16.5%), and enhancing sexual performance (12.8%). Regarding frequency, the majority did not respond (53.6%). Among those who did respond, 27.4% inject not every day, 16.5% inject once a day, and a small percentage inject at least

twice a day (2.6%). A minority of the participants share needles (18.3%) or engage in blood sharing, also known as “flashing” (15.0%). Among those who flash, the majority do so out of curiosity to know how it feels (58.5%), while others do it due to lack of money (41.5%). A significant majority of the participants consume alcohol (86.4%). Among these, 45.8% always consume alcohol, 22.5% often do, 25.7% rarely do, and a small percentage sometimes do (6.0%). In terms of other substances used, the most common is cigarettes (71.9%), followed by Tramadol (26.9%), Codeine (26.2%), Cocaine (15.4%), and a small percentage use other substance (1.4%).

Table 2. Use of Substances among PWIDs attending HALG, Akwa Ibom State.

Variable		Frequency (n=442)	Percentage
Drug taken	Type of drugs		
	Injectable	432	97.5
	Non-injectable only	10	2.5
Injectable taken (n=432)	Pentazocine	231	53.6
	Heroin	199	46.2
	Morphine	113	26.2
	Amphetamine	64	14.9
Reasons for taking injections (n=432)	To feel high	203	47.0
	Because of my hard job	92	21.3
	To feel belong among friends	71	16.5
	For sexual performance	55	12.8
	Others	11	2.5

Variable		Frequency (n=442)	Percentage
Frequency of self-injection (n=432)	Once a day	71	16.5
	At least 2ice a day	11	2.6
	Not everyday	118	27.4
	No response	231	53.6
Share needle (n=432)	Yes	79	18.3
Share blood with friends (flash) (n=432)	Yes	65	15.0
	I do not have money	27	41.5
Reason for sharing blood (flash)	I want to know how it feels	38	58.5
Take alcohol	Yes	382	86.4
	Always	175	45.8
	Often	86	22.5
Frequency of alcohol intake	Sometimes	23	6.0
	Rarely	98	25.7
	Cigarette	318	71.9
Substance take	Codeine	116	26.2
	Cocaine	68	15.4
	Tramadol	119	26.9
	Others	6	1.4

Table 3 provides information on the sexual activity and orientations of PWIDs attending HALG in Akwa Ibom State over the past three months. The majority of participants were not sexually active (52.3%). Among those active, 22.4% had two partners, 14.7% had one partner, 9.0% had three partners, and a small percentage had four or more partners (1.6%). Among the sexually active participants, the use of condoms varied; some used condoms sometimes (39.8%), others always (19.4%) or often (16.1%). A smaller percentage rarely used condoms (16.6%), and a small group never used them (8.1%). All sexually active participants engaged in vaginal sex (100%), with a smaller percentage also engaging in oral sex (22.8%) and a very small percentage in anal sex (6.2%). A minority of participants reported having been raped (13.6%). Among those, most were raped by an unknown person or stranger (36.7%), followed by a partner (31.7%). Smaller percentages were raped by other PWIDs (13.3%), a neighbour

(10.0%), the police (6.7%), or relatives (3.3%).

Most of those who were raped could not remember when it last happened (50.0%). Others reported it happened over a year ago (33.3%), 1 to 6 months ago (10.0%), or 7 to 12 months ago (5.0%). A small percentage reported it happened within the last month (1.7%). Nearly half of the participants reported having symptoms of a sexually transmitted infection (STI) (48.6%). Among those, the most common symptom was itching around the private part (38.1%), followed by abnormal discharge (20.9%), ulcers (20.5%), and other symptoms (20.5%). Among those with STI symptoms, most were treated at HALG (68.8%). In comparison, a smaller percentage were treated at a government health facility (7.4%) or by other means, such as patent medicine or a traditional healer (7.0%). A significant percentage were not treated (16.7%).

Table 3. Sexual activity and sexual orientations of PWIDs attending HALG, Akwa Ibom State, in the last three months.

Variables		Frequency	Percentage
Number of sexual partners in the last 3 months	1	65	14.7
	2	99	22.4

Variables		Frequency	Percentage
Frequency of Condom use (n=211)	3	40	9.0
	4 and above	7	1.6
	Not Active	231	52.3
	Always	41	19.4
	Often	34	16.1
	Sometimes	84	39.8
	Rarely	35	16.6
	Never	17	8.1
Type of sexual activity (n=211)	Oral	48	22.8
	Vaginal	211	100
	Anal sex	13	6.2
Have been raped	Yes	60	13.6
	Partner	19	31.7
	PWIDS	8	13.3
The person responsible for the rape	Neighbour	6	10.0
	Police	4	6.7
	Relatives	2	3.3
	Unknown person (stranger)	22	36.7
	Within a month	1	1.7
Last time of rape (n=60)	1 to 6 months	6	10.0
	7-12 months	3	5.0
	Above 1 year	20	33.3
	Cannot remember	30	50.0
	Yes	215	48.6
Had any symptoms of STI	No	227	51.4
	Itching around the private part	82	38.1
Symptoms (n=215)	Abnormal discharge	45	20.9
	Ulcer	44	20.5
	Others	44	20.5
	Government Health facility	16	7.4
Was treated (n=215)	HALG	148	68.8
	Others (patent medicine /traditional healer)	15	7.0
	Not treated	36	16.7

Table 4 provides information on experiences of physical assault, police arrest, and other forms of violence among PWIDs attending HALG in Akwa Ibom State. A minority of participants reported being arrested by the police due to drug-related issues (19.5%). Almost half of the participants

reported being physically assaulted, such as slapped or punched, because of drugs (47.5%). Among those who experienced physical assault (210 individuals), the most common perpetrators were partners (27.3%) and the police (26.8%). Other perpetrators included relatives (16.8%), neighbours

(11.0%), other PWIDs (10.5%), unknown persons (13.9%), and others such as landlords or friends (1.9%). A significant percentage of participants reported being verbally assaulted (31.7%). Among those who experienced verbal assault (140 individuals), the most recent incidents occurred within 7 to 12

months (35.7%), followed by 1 to 6 months ago (30.7%), over a year ago (23.6%), and within the last month (10%). A small percentage of participants reported being denied treatment (0.9%), and none reported being denied service by HALG (0.0%).

Table 4. Physical assault police arrest and other violence experienced by PWIDs attending HALG, Akwa Ibom State.

Variables		Frequency (n=432)	Percentage
Have been arrested by police on account of drug	Yes	86	19.5
Have been slapped/punched because of drugs	Yes	210	47.5
The person responsible for physical assault (n=210)	Partner	57	27.3
	Police	56	26.8
	Relation	35	16.8
	PWID	22	10.5
	Neighbour	23	11.0
	Unknown person	29	13.9
	Others (landlord, friend)	4	1.9
Have been verbally assaulted	Yes	140	31.7
The person responsible for verbal assault (n=140)	When last did this happen?		
	Within a month	14	10
	1 to 6 months	43	30.7
	7-12 months	50	35.7
	Above 1 year	33	23.6
Have been denied treatment	Yes	4	0.9
Have been denied service by HALG	Yes	0	0.0%

Table 5 presents the relationship between socio-demographic characteristics, alcohol use, disclosure of HIV status, and experiences of sexual assault among PWIDs attending HALG in Akwa Ibom State. The highest percentage of rape victims was in the 20-29 age group (16.8%), followed by the 30-39 (13.0%), and the lowest percentage was within age 40 and above (8.5%). However, the difference across age groups was statistically insignificant ($P=0.198$). Sex was significantly associated with rape, with a higher percentage of females (35.7%) experiencing rape compared to males (6.1%) ($P<0.0001$). Marital status and level of education were not significantly associated with rape ($P=0.519$; $P=0.234$). The

highest percentage of rape victims among marital status categories were widowed (27.3%), and among education levels, those with no formal education had the highest percentage of rape (17.3%). Occupation was also not significantly associated with rape ($P=0.226$).

Disclosure of HIV status and alcohol use were not significantly associated with rape ($P=0.681$). Among those who disclosed their HIV status, 15.0% had experienced rape, compared to 13.3% among those who did not disclose. Among those who used alcohol, 14.1% had experienced rape, compared to 12.0% among those who did not use alcohol.

Table 5. The relationship between socio-demographic characteristics, use of alcohol, disclosure and sexual assault among the respondents.

Variables	Sexual assault/Rape n (%)		X ² (P-value)
	Rape (n=60)	No rape (n=382)	
Age (years)			
20-29	28 (16.8)	139 (83.2)	3.288 (0.198)
30-39	25 (13.0)	168 (87.0)	
40 and above	7 (8.5)	75 (91.5)	
Sex			
Male	20 (6.1)	310 (93.9)	62.675 (<0.0001*)
Female	40 (35.7)	72 (64.3)	
Marital status			
Single	41 (14.0)	252 (86.0)	2.264 (0.519)
Married/cohabiting	11 (11.6)	84 (88.4)	
Divorced/separated	5 (11.6)	38 (88.4)	
Widowed	3 (27.3)	8 (72.7)	
Level of education			
No formal education	9 (17.3)	43 (82.7)	4.272 (0.234)
Primary	8 (9.0)	81 (91.0)	
Secondary	33 (16.2)	171 (83.2)	
Tertiary	10 (10.3)	87 (89.7)	
Occupation			
Artisan	14 (10.4)	121 (89.6)	7.175 (0.226)
Civil servants	3 (7.7)	36 (92.3)	
Professional	3 (9.4)	29 (90.6)	
Students	6 (11.5)	46 (88.5)	
Unemployed	30 (18.0)	137 (82.0)	
Others	4 (23.5)	13 (76.5)	
Disclosure			
Yes	12 (15.0)	68 (85.0)	0.169 (0.681)
No	48 (13.3)	314 (86.7)	
Alcohol			
No	6 (12.0)	44 (88.0)	0.169 (0.681)
Yes	54 (14.1)	328 (85.9)	

* significant at P<0.05 two levels

3.1. Stigma

As shown in [Figure 1](#), 36.2% of the PWIDs have experienced stigma, with 59.3% experiencing perceived stigma and 17.9% internal stigma. While 36.2% experience both types of stigma.

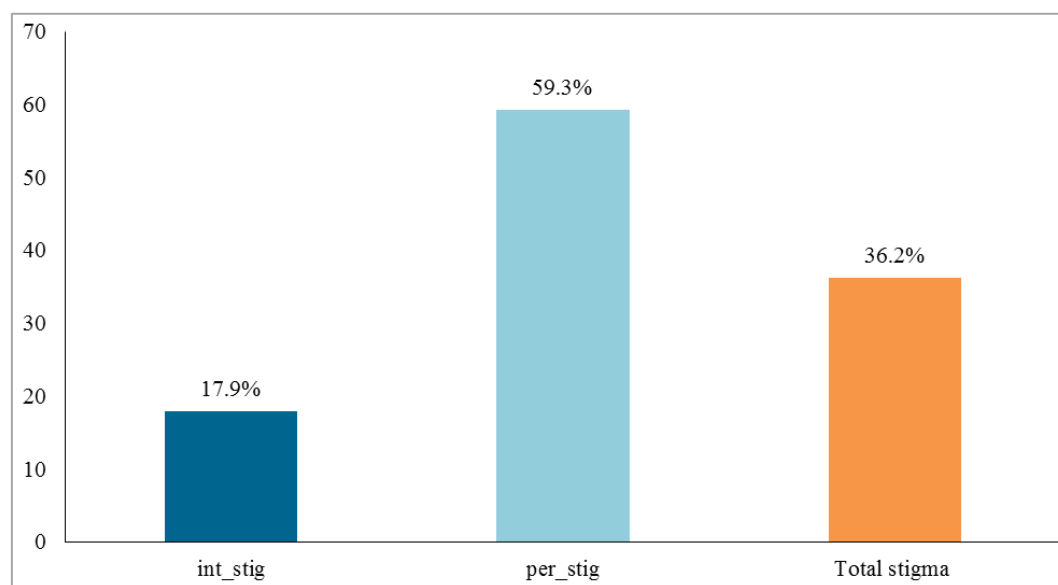


Figure 1. The proportion of PWIDs with high internal stigma, perceived stigma and Total stigma.

As shown in Table 6, the highest proportion of high stigma was experienced by the 40 and above age group (43.9%), followed by the 20-29 age group (37.1%) and the 30-39 age group (32.1%). However, the difference across age groups was insignificant ($P=0.169$). Sex was not significantly associated with stigma, with a slightly higher percentage of males (37.9%) experiencing high stigma compared to females (31.2%) ($P=0.207$). Marital status and level of education were not significantly associated with stigma ($P=0.176$ and $P=0.830$, respectively). The highest percentage of high stigma among marital status categories were single individuals (39.2%), and among education levels, those who completed

secondary education had the highest percentage of high stigma (38.2%). The occupation was significantly associated with stigma ($P=0.008$). The highest stigma was found among students (51.9%), followed by the unemployed (40.7%). Disclosure of HIV status was significantly associated with stigma ($P=0.005$). Among those who disclosed their HIV status, 22.5% experienced high stigma, compared to 39.2% among those who did not disclose.

Alcohol use was not significantly associated with stigma ($P=0.778$). Among those who used alcohol, 36.0% experienced high stigma, compared to 38.0% among those who did not use alcohol.

Table 6. The relationship of social demographic characteristics, disclosure of HIV status and level of stigma among PWIDs attending HALG, Akwa Ibom State.

Variables	Level of stigma n (%)		X ² (P-value)
	High stigma (n=160)	Low stigma (n=282)	
Age (years)			
20-29	62 (37.1)	105 (62.90)	3.5565 (0.169)
30-39	62 (32.1)	131 (67.9)	
40 and above	36 (43.9)	46 (56.1)	
Sex			
Male	125 (37.9)	205 (62.1)	3.5565 (0.207)
Female	35 (31.2)	77 (68.8)	
Marital status			
Single	115 (39.2)	178 (60.8)	4.938 (0.176)
Married/cohabiting	26 (27.4)	69 (72.6)	

Variables	Level of stigma n (%)		X ² (P-value)
	High stigma (n=160)	Low stigma (n=282)	
Divorced/separated	15 (34.9)	20 (65.1)	0.8828 (0.830)
Widowed	4 (36.4)	7 (63.6)	
Level of education			
No formal education	17 (32.7)	35 (67.3)	
Primary	30 (33.7)	59 (66.3)	11.8543 (0.008*)
Secondary	78 (38.2)	126 (61.8)	
Tertiary	35 (36.1)	62 (63.9)	
Occupation			
Artisan	39 (28.9)	96 (71.1)	0.8828 (0.005*)
Civil servants	26 (29.6)	62 (70.4)	
Students	27 (51.9)	25 (48.1)	
Unemployed	68 (40.7)	99 (59.3)	
Disclosure			0.0792 (0.778)
Yes	18 (22.5)	62 (77.5)	
No	142 (39.2)	220 (60.8)	0.8828 (0.005*)
Alcohol			
No	19 (38.0)	31 (62.0)	
Yes	141 (36.0)	251 (64.0)	

* Significant at P<0.05 two levels

As Shown in Table 7, students were significantly more likely to experience stigma than artisans (OR=2.22, P=0.022). Civil servants/professionals and the unemployed did not show a significant difference in stigma compared to artisans

(P=0.878 and P=0.153, respectively). Also, those who adhered to their treatment were significantly more likely to experience stigma than those who did not (OR=2.21, P=0.001).

Table 7. Multivariate analysis in response to stigma among the respondents.

Variables	Odd ratio (95% CI)	P value
Disclosure		
Yes	Ref	
No	3.38 (1.81-6.31)	<0.0001*
Occupation		
Artisan	Ref	
Civil servant/professional	1.05 (0.57-1.92)	0.878
Students	2.22 (1.12-4.41)	0.022*
Unemployed	1.45 (0.87-2.40)	0.153
Adherence		

Variables	Odd ratio (95% CI)	P value
Non-adherence	Ref	
Adherence	2.21 (1.40-3.48)	0.001*

* Significant at $P < 0.05$ two levels

Table 8 presents a statistical analysis of the relationship between socio-demographic characteristics, disclosure of HIV status, and experiences of physical abuse among PWIDs attending HALG in Akwa Ibom State. Age was significantly associated with physical abuse ($P=0.026$), with the highest percentage of abuse victims within age 30-39 (51.3%), followed by the 20-29 age group (49.7%), and the lowest percentage in the 40 and above age group (34.1%).

Sex ($P=0.863$) and marital status ($P=0.121$) were not significantly associated with physical abuse, but the highest percentage of abused victims were widowed individuals (63.6%). Level of education was significantly related to physical abuse ($P < 0.0001$). The highest percentage of abuse victims had no formal education (75.0%), followed by those who completed secondary education (54.4%). Occupation

was also significantly associated with physical abuse ($P < 0.0001$). The highest percentage of abuse victims were unemployed (60.5%). Similarly, disclosure of HIV status was significantly associated with physical abuse ($P < 0.0001$). Among those who disclosed their HIV status, 66.2% experienced physical abuse, compared to 43.4% among those who did not disclose.

Treatment adherence was significantly associated with physical abuse ($P < 0.0001$). Among those who adhered to their treatment, 59.2% experienced physical abuse, compared to 39.2% among those who did not adhere. On the other hand, alcohol use was not significantly associated with physical abuse ($P=0.084$). Among those who used alcohol, 36.0% experienced physical abuse, compared to 49.0% of those who did not use alcohol.

Table 8. The relationship between Socio-demographic characteristics, disclosure of HIV status and physical abuse among PWIDs attending HALG, Akwa Ibom State.

Variables	Physical abuse n (%)		X ² (P-value)
	Yes (n=210)	No (n=232)	
Age (years)			
20-29	83 (49.7)	84 (50.3)	7.3025 (0.026*)
30-39	99 (51.3)	94 (48.7)	
40 and above	28 (34.1)	54 (65.9)	
Sex			
Male	156 (47.3)	174 (52.7)	0.0297 (0.863)
Female	54 (48.2)	58 (51.8)	
Marital status			
Single	129 (44.0)	164 (56.0)	5.813 (0.121)
Married/cohabiting	48 (50.5)	47 (49.5)	
Divorced/separated	26 (60.5)	17 (39.5)	
Widowed	7 (63.6)	4 (36.4)	
Level of education			
No formal education	39 (75.0)	13 (25.0)	38.9206 (<0.0001*)
Primary	24 (27.0)	65 (73.0)	
Secondary	111 (54.4)	93 (45.6)	
Tertiary	36 (37.1)	61 (62.9)	

Variables	Physical abuse n (%)		X ² (P-value)
	Yes (n=210)	No (n=232)	
Occupation			
Artisan	51 (37.8)	84 (62.2)	20.9989 (<0.0001*)
Civil servants/professional	41 (46.6)	47 (53.4)	
Students	17 (32.7)	35 (67.3)	
Unemployed	101 (60.5)	66 (39.5)	
Disclosure			
Yes	53 (66.2)	27 (33.8)	13.7537 (<0.0001*)
No	157 (43.4)	205 (56.6)	
Adherence			
Yes	109 (59.2)	75 (40.8)	17.8857 (<0.0001*)
No	101 (39.2)	157 (60.8)	
Alcohol			
Yes	18 (36.0)	32 (64.0)	2.989 (0.084)
No	192 (49.0)	200 (51.0)	

* Significant at P<0.05 two levels

Table 9 presents a multivariate analysis examining the relationship between these variables and physical abuse. PWIDs in the 40 and above category were significantly less likely to experience physical abuse than those in the 20-29 age group (OR=0.51, P=0.037). Those who completed primary or tertiary education were significantly less likely to experience physical abuse (OR=0.18, P<0.0001 and

OR=0.28, P=0.002). Those who did not disclose their status were significantly less likely to experience physical abuse than those who did disclose (OR=0.55, P=0.046). Compared to artisans, the unemployed were significantly more likely to experience physical abuse (OR=1.91, P=0.018). There were no significant associations with physical abuse (P=0.083 and P=0.089).

Table 9. Multivariate analysis in response to physical violence among the respondents.

Variables	Odd ratio (95% CI)	P value
Age category		
20-29	Ref.	
30-39	1.05 (0.64-1.70)	0.854
40 and above	0.51 (0.27-0.96)	0.037*
Level of education		
No formal education	Ref.	
Primary	0.18 (0.08-0.41)	<0.0001*
Secondary	0.49 (0.23-1.02)	0.055
Tertiary	0.28 (0.12-0.63)	0.002*
Disclosure		
Yes	Ref.	

Variables	Odd ratio (95% CI)	P value
No	0.55 (0.30-0.99)	0.046*
Occupation		
Artisan	Ref.	
Civil Servant/professional	1.49 (0.08-2.77)	0.206
Students	0.75 (0.32-1.76)	0.513
Unemployed	1.91 (1.12-0.63)	0.018*
Adherence		
Adherence	Ref.	
Non-adherence	0.88 (0.42-1.06)	0.083
Use of Alcohol		
Yes	Ref.	
No	1.78 (0.92-3.48)	0.089

* Significant at P<0.05 two levels

3.2. Qualitative (FGD) Results

This study explored the stigma experienced by PWIDs who are HIV-positive and the violence that they experience. Coping mechanisms for stigma and violence were also explored for this group.

Socio-Demographic Characteristics of Respondents

Four (4) Focused group discussions were conducted in four urban areas in Akwa Ibom. These were Ikot Ekpene, Eket, Uyo and Oron. A total of 40 participants participated in the discussion. The mean age of the participants was 29.1 ± 3.6 years, ranging from 35 to 21 years.

3.3. Stigma

3.3.1. Perceived Stigma

Participants discussed their experiences of stigma in the workplace, community, among family members and in the health facility where they get treatment. There was a fair understanding of what stigma meant as participants described their experiences. Only a few participants understood what stigma meant. Most of the participants were, however, only able to relate their experiences of stigma rather than provide a clear definition of the term.

“...Ideally, Stigma is a kind of a situation whereby some other people reject somebody else due to one or two circumstances...” CA. 33yrs.

Many respondents said people around them naturally avoid them, especially when they have taken illicit drugs. Participants said they are discriminated against wherever they go, mainly because of their drug addiction and use. Perpetrators

of stigma came from family members, community members, religious groups, etc. *“...there was a period I went to the church; they preached, and the pastor did alter call; When I stepped out, people were just looking at me, and I was so ashamed. So, I went back to my seat because I was so upset. So, the usher came to me and was like, please come out. I told her I was not coming out again. I carried my bag and left. That was what happened. I never went back to that place again.”* GSM, 35yrs.

Participants said they knew they were stigmatized because they have constantly been avoided by persons who come close to them. Participants agreed that they never experienced stigma when receiving care in the healthcare facility.

3.3.2. Internalized Stigma

Participants discussed their experience of internalized stigma within the context of the guilt they experienced because of their status. A good number of the respondents experienced guilt, but sometimes for very different reasons. While some respondents said they felt initially saddened they had contracted HIV, some respondents attributed their guilt to some other issues such as the poor utilization of salaries, etc.”...*The only time I normally feel guilty is because where am working whenever I get my salary, I don't normally use my salary for anything important...I spend it on drugs.*” DE, 28yrs. Some of the respondents had experienced suicidal ideation due to their status. Most respondents said that receiving antiretroviral drugs had significantly reduced the burden of guilt associated with the disease.

3.4. Experience of Violence

The participants discussed their experience of violence.

Most respondents said they had not encountered violence directly from anyone because people could not withstand the consequences of bringing such violence to them. Most encounters of violence narrated were not directly related to the participants. Participants said those who tried to bring them violence were in danger of receiving more violence. *"... I don't trouble other people in my place of work, so I don't see why anyone will come and look for my trouble. If you look for my trouble, I'm going to give you double because I am not the violent type. So no one will look for my trouble. So, I don't experience violence."* DO, 32yrs.

Occasionally, participants appeared animated, tipsy and distanced from the conversation and had to be frequently reintegrated into the discussion. "Violence" as a way of showing disapproval was sometimes displayed by close relatives (Fiancée, parents, etc) of some of the participants. *"... Sometimes when because she (fiancée) might come to my house unexpectedly without calling me and me here I am doing my normal injection, injecting myself. She starts opening the door because of that thing; this will result in some moves and some beating. I will just dey observe..."* MO, 33yrs.

3.5. Coping with Stigma and Violence

Participants discussed coping with stigma and violence in the environment and community. Many participants resort to long periods of loneliness and indulgent drug addiction. They said they did this to avoid conflicts with relatives, neighbours and sometimes their parents. *"...I wanted to leave the church, but since my dad was the pastor, things got so rough then I decided to leave. So, I didn't want to talk back; I cannot talk back at a pastor, even if I want to explain myself, but what the people don't know is that the more you stigmatize them, the more you make them keep doing what they are doing. When you want to give them trouble, they double it."* JI, 35 yrs.

Rather than ostracising the public, a few respondents responded to health facility advice. *"...Initially I, any time I was with my peers, my friends, I always feel maybe this kind of, these people sitting around me, if they know my status, I always feel like that was the initial stage. But ever since I was enrolled here and my case manager gave me the orientation and told me to live my normal life as far as I'm taking drugs, you are very free in the society to do whatever you need to do as far as you are on these drugs, as long as you wish to live, as long as you take the drugs, ever since that time that man gave me the orientation, I live and don't care what anybody is talking or thinking."*

4. Discussion

This study shows that about 81% of PWIDs living with HIV are below 40 years old, with a mean age of 32.7 ± 7 years; these are the young, active group supposed to drive the society's economy. About 25% of them are females; this is higher

than the 17 % reported by the National Institute of Drug Abuse in 202 [35]; one may imply that more women are getting involved in drug use; a study in Kenya shows median age of 30.6 years, and the female constituted 54% of PWID living with HIV [36], the sex difference may be as a result of snowball sampling techniques used in that study, and this could also be as a result of the fact that the female drug users have a higher risk of acquiring HIV compare to their male counterparts [36]. They are more likely to come out for HIV screening. A low level of education has been reported to be associated with injection drug use, but this study shows that 68% of the participants have at least completed secondary school [36, 37]. Most PWIDs are singles, including those previously married; literature has shown that marriage is protective against drug use [38].

Only 2.5% of the respondents claimed to take non-injectable drugs; Pentazocine was the most abused drug in about 54% of cases, followed by Heroin in 46%; NIDA reported that 85% of the PWIDs abused pentazocine [35]. Another risky behaviour seen in this study was the sharing of needles in 18% of cases; this was lower than 39.3 % reported in the previous study, though the study included all PWIDs (irrespective of the HIV status) in Akwa Ibom state among other states [39], flashing was seen in 15% of cases, flashing is sharing the blood of PWIDs immediately after injecting a drug. Blood flashing has been reported in the literature; 16.6% of female IDUs in Tanzania were reported to practice flashing [40]. These risky practices result from insufficient money to buy syringes and injectables, so they share. These practices continue to fuel the transmission of HIV from PWIDs living with HIV to HIV-negative PWIDs and other blood-borne infections.

Non-adherence to ARV has been attributed to poor outcomes among this population; in this study, 58% of the PWIDs were non-adherence in the last seven days; this non-adherence may be due to lack of social support from family and friends as a result of non-disclosure, the non-disclosure rate in this study was 82%. It has been observed that men who disclosed their HIV status were more adherent to treatment than those who were not [41]. The PWIDs likely take more interest in the drugs they inject than the ARVs, and the influence of the drugs may impair their sense of judgment such that they cannot take the ARVs. Another reason for non-adherence is an unfriendly hospital environment. However, this is not the case among the study participants, who stated that they have never been denied service and the environment is so friendly.

Most times, the reason for non-disclosure is to avoid stigma [41, 42]; from the FGD, participants stated that they experienced stigma among family, friends and even church because the people now avoid them. The high level of stigma experienced is double-layered as they are both PWID and persons living with HIV; the study shows that perceived stigma is a major concern in this special population, seen in about 59% of them, compared to internal stigma. It has been

reported that if PWIDs disclose their status to family members, they are likely to get family support [42]; in this study, only 30% of PWIDs disclosed to their family members. The study shows that those who did not disclose had a two-fold likelihood of experiencing stigma compared to those who disclosed. Occupation especially being a student and adherent to ARVs, are other determinants of stigma seen in this study. In a study done in Vietnam, a higher educational level was reportedly associated with low stigma experienced by the PWIDs, especially those with part-time jobs who had a higher stigma [43].

PWIDs are prone to all forms of violence; physical violence occurred in 47% of cases with no gender difference; PWIDs who were 40 years and above had a lower risk of experiencing violence, possibly because they are more mature than the younger ones who are more involved in taking risks that will increase their exposures to violence. Intimate partners perpetrated twenty-seven percent of the physical violence in this study. Since the use of substances is prohibited in the country, the police take advantage of this to assault the PWIDs and even arrest them; one-fifth of the participants reported that police had arrested them for drug-related offences, and this is close to 29% reported in the nation drug use survey among PWIDs. PWIDs with no formal education were more prone to violence, unemployed, and disclosure increased their vulnerability to physical violence.

Fourteen percent of PWIDs have suffered sexual assault in their lifetime only; 2.3% were raped within the last 12 months; this is lower than 3% of the nation's average of women 15-49 who were raped in the last 12 months [44]. The only risk factor in this study was being a female; 32% of them had been raped; this is not unexpected, as studies have shown that PWIDs females are more prone to being assaulted both physically and sexually [45]. About 32% of the assaults were perpetrated by the partners; sexual intimate partner violence has been reported to be high among the female, most of the perpetrators of rape are unknown to the victims, sexual assault facilitates disease transmission through laceration/injuries, and women are more at risk.

In the last three months, 48% of PWIDs have been sexually active, and about one-third have more than one sexual partner. Of the sexually active PWIDs, 6% of them engaged in both vaginal and anal sex, and the use of condoms among those who were sexually active was very low; this can be linked to impaired judgement due to drug use. These high-risk lifestyles are known to fuel the transmission of HIV and other sexually transmitted infections among PWIDs and their contacts; it is unsurprising that about half of the respondents reported STI-related symptoms within the last 12 months. Exchanging sex for money is another behavioural risk for STI, especially among women, as a source of income for their drug use; this has been reported in the literature [46] but was not captured in this study. The most common symptom reported is itching around the genitalia, which suggests candidiasis followed by abnormal discharge; this is rather

surprising in a male-predominated population; the possible reason is that STIs and HIV are more prevalent among females. A study in the US reported a high prevalence of chlamydial and gonorrhoea among the PWIDs [46]; among the male PWIDs in Lagos, the most common STI was chlamydial 3.7% [47].

Most PWIDs try to cope with violence by withdrawing from themselves and, more often, make them drink more alcohol or use substances; some are battle-ready for anybody who attempts to hurt, while others have an acceptance mechanism with positive reframing.

5. Limitations

This study is cross-sectional, and the findings are not causal; the relationship's direction is unclear. All information was self-reported by the respondents, and there is the possibility of recall bias, and participants are likely to underreport sensitive information (socially desirable reporting).

6. Conclusion

The PWIDs experienced high levels of stigma, most especially perceived stigma. Factors like being a student, non-disclosure of HIV status and medication adherence made them vulnerable to stigma. Age below 40, lack of formal education, and unemployment increased their vulnerability to physical violence. The PWIDs have High, very risky lifestyles such as non-disclosure, poor adherence, sharing of needles, flash, sexual practices involving multiple partners and low condom use; all these will contribute to poor treatment outcomes and sustain the transmission of HIV, STI and other blood-borne infections.

There is a need to intensify adherence counselling among PWIDs by ensuring they have treatment partners and encouraging disclosure, especially to family members. There may be a need to link PWIDs with drug dependence treatment/rehabilitation programmes; methadone therapy has been shown to increase the uptake of ART and adherence among this key population. Skill acquisition for the unemployed PWIDs or income-generating programs to reduce violence and other interventions may reduce violence and drug use among this key population.

Abbreviations

ART: Antiretroviral Drugs
FGD: Focus Group Discussion
HIV: Human Immunodeficiency Virus
IDU: Injecting Drug Users
OR: Odd Ratio
PWID: People Who Inject Drugs
STI: Sexually Transmitted Infection

Ethical Consideration

Ethical approval was obtained from the Ethical Review Committee of the University of Uyo Teaching Hospital with a Ref no. UUTH/AD/S/96/VOL.XXI/499. Written informed consent was obtained from the respondents. Participation in the study was strictly voluntary, and the respondents were free to discontinue at any research stage without any consequences. Strict adherence to confidentiality as the questionnaire was de-identified and data security was assured. No intentional harm was done to the participants.

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Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] UNAIDS. "Miles to go: closing gaps, breaking barriers, fighting injustices." 2018. p. 1–268.
- [2] UNAIDS. Blind Spot: Reaching out to men and boys. 2017; 76.
- [3] Escudero DJ, Lurie MN, Mayer KH, Weinreb C, King M, Galea S, et al. Acute HIV Infection Transmission Among People Who Inject Drugs in a mature Epidemic Setting. *AIDS*. 2016; 30: 2537–44. <https://doi.org/10.1097/QAD.0000000000001218>
- [4] UNAIDS. THE GAP REPORT: People who inject drugs. 2014.
- [5] Onovo A, Kalaiwo AS, Katbi M, Keiser O. Geographical Disparities in HIV Prevalence among Men Who Have Sex with Men and People Who Inject Drugs in Nigeria. *Lancet HIV*. 2020; 1–23. <https://doi.org/10.2196/19587>
- [6] UNODC. Drug use in nigeria. 2018.
- [7] Ezirim IO, Ogungbemi K, Daniel U, Blanchard J, Ezire O. Evidence from epidemic appraisals in Nigeria. *African Eval J*. 2015; 3: 1–8. <http://dx.doi.org/10.4102/aej.v3i2.153>
- [8] Veen S van der, Trout C, Cenival M de, Emmanuel G. Opportunities to address the growing "syndemics" of HIV, sexually transmitted infection, stigma, violence and substance abuse among people who inject drugs in Nigeria. 2017.
- [9] Awofala AA, Ogundele OE. HIV epidemiology in Nigeria. *Saudi J Biol Sci*. 2018; 25: 697–703. <https://doi.org/10.1016/j.sjbs.2016.03.006>
- [10] Kane JC, Elafros MA, Murray SM, Mitchell EMH, Augustinavicius JL, Causevic S, et al. A scoping review of health-related stigma outcomes for high-burden diseases in low- and middle-income countries. *BMC Med*. 2019; 17: 1–40. <https://doi.org/10.1186/s12916-019-1250-8>
- [11] Drug Policy Alliance. Stigma and People Who Use Drugs. 2009. p. 10001.
- [12] ASHM. Stigma and Discrimination around HIV and HCV in Healthcare Settings: Research Report. 2012.
- [13] Wood K, Aggleton P. Stigma, Discrimination and Human Rights. 2003.
- [14] Nyblade L, Stockton MA, Giger K, Bond V, Ekstrand ML, Lean RM, et al. Stigma in health facilities: why it matters and how we can change it. *BMC Med*. 2019; 17: 1–15. <https://doi.org/10.1186/s12916-019-1256-2>
- [15] Myers B, Petersen Z, Pithey A, Pasche S, Dada S. Barriers to antiretroviral therapy use among people who inject drugs: A systematic review. 2012. <https://doi.org/10.1097/COH.0b013e328354bcc8>
- [16] Stringer KL, Mukherjee T, Mccrimmon T, Terlikbayeva A, Primbetovac S, Darisheva M, et al. Attitudes towards people living with HIV and people who inject drugs: A mixed method study of stigmas within harm reduction programs in Kazakhstan. *Int J Drug Policy*. 2019; 68: 27–36. <https://doi.org/10.1016/j.drugpo.2019.02.007>
- [17] Mumtaz GR, Weiss HA, Thomas SL, Riome S, Setayesh H, Riedner G, et al. HIV among People Who Inject Drugs in the Middle East and North Africa: Systematic Review and Data Synthesis. *PLoS Med*. 2014; 11: 1–30. <https://doi.org/10.1371/journal.pmed.1001663>

- [18] Kharsany ABM, Karim QA. HIV Infection and AIDS in Sub-Saharan Africa: Current Status, Challenges and Opportunities. *Open AIDS J.* 2016; 10: 34–48.
<https://doi.org/10.2174/1874613601610010034>
- [19] Sabin K, Zhao J, Maria J, Calleja G, Sheng Y, Arias S. Availability and Quality of Size Estimations of Female Sex Workers, Men Who Have Sex with Men, People Who Inject Drugs and Transgender Women in Low- and Middle- Income Countries. *PLoS One.* 2016; 11: 1–11.
<https://doi.org/10.1371/journal.pone.0155150>
- [20] Monjok E, Smesny A, Essien EJ. HIV/AIDS - Related Stigma and Discrimination in Nigeria: Review of Research Studies and future directions for Prevention Strategies. *Afr J Reprod Health.* 2010; 13: 21–35.
- [21] Ibragimov U, Cooper HL, Haardürfer R, Dunkle KL, Zule WA, Wong FY. Stigmatization of people who inject drugs (PWID) by pharmacists in Tajikistan: sociocultural context and implications for a pharmacy-based prevention approach. *Harm Reduct J.* 2017; 1–11.
<https://doi.org/10.1186/s12954-017-0190-x>
- [22] Paquette CE, Syvertsen JL, Pollini RA. Stigma at Every Turn: Health Services Experiences among People Who Inject Drugs. *Int J Drug Policy.* 2018; 57: 104–10.
<https://doi.org/10.1016/j.drugpo.2018.04.004>
- [23] GNP+. The People Living with HIV Stigma Index - Nigeria. 2011.
- [24] Rivera A V., DeCuir J, Crawford ND, Amesty S, Lewis CF. Internalized stigma and sterile syringe use among people who inject drugs in New York City, 2010-2012. *Drug Alcohol Depend.* 2015; 144: 259–64.
<https://doi.org/10.1016/j.drugalcdep.2014.09.778>
- [25] Veen S Van Der, Cenival M De, Trout C. Harm reduction guidelines for needle and syringe programs, opioid substitution therapy, prevention and management of opioid overdose with naloxone. 2018.
- [26] The Global Fund. Harm reduction for people who use drugs. 2020. p. 1–25.
- [27] Harm Reduction International. The Case for a Harm Reduction Decade: Progress, potential and paradigm shifts. 2016.
- [28] FHI 360. The Nexus of Gender and HIV among Transgender People in Kenya. 2016.
- [29] WHO/World Bank. Women who inject drugs and HIV: addressing specific needs. 2014.
- [30] Fischer B. Some notes on the use, concept and socio-political framing of “stigma” focusing on an opioid-related public health crisis. *Subst Abuse Treat Prev Policy.* 2020; 15: 1–7.
<https://doi.org/10.1186/s13011-020-00294-2>
- [31] Israel UE. Urbanization and Conflict: A Study of Uyo, 1900-2015. *African J Hist Archaeol.* 2018; 3: 35–49.
- [32] Government of Akwa Ibom State of Nigeria. Akwa Ibom State History. 2016.
- [33] Jacob A, Akpan P A. Spatial Distribution and Accessibility of Health Facilities in Akwa Ibom State, Nigeria. *Ethiop J Environ Stud Manag.* 2009; 2: 49–57.
<https://doi.org/10.4314/ejesm.v2i2.45919>
- [34] Zeng C, Li L, Hong YA, Zhang H, Babbitt AW, Liu C, et al. A structural equation model of perceived and internalized stigma, depression, and suicidal status among people living with HIV / AIDS. 2018; 1–11.
<https://doi.org/10.1186/s12889-018-5053-1>
- [35] Bawo James, Adeola Adeyelu JRK. Are Persons Who Inject Drugs in Nigeria Accessing Evidence-Based Care? [Internet]. *Natl. Inst. Drug use.* 2021 p. 1. Available from: <https://nida.nih.gov/international/abstracts/are-persons-who-inject-drugs-in-nigeria-accessing-evidence-based-care>
- [36] Budambula V, Matoka C, Ouma J, Ahmed AA, Otieno MF, Were T. Socio-demographic and sexual practices associated with HIV infection in Kenyan injection and non-injection drug users. *BMC Public Health.* 2018; 18.
<https://doi.org/10.1186/s12889-018-5100-y>
- [37] Noroozi M, Nedjat S, Golestan B, Majdzadeh R. What are differences between non-injecting and injecting drug addicts? *Int J Prev Med.* 2012; 3: 414–9.
- [38] Sinha N. Effect on marital status on substance abuse - A review. *Int J Recent Sci Res.* 2018; 9: 27012–5.
- [39] Ochonye B, Folayan MO, Fatusi AO, Emmanuel G, Adepoju O, Ajidagba B, et al. Satisfaction with use of public health and peer-led facilities for HIV prevention services by key populations in Nigeria. *BMC Health Serv Res.* 2019; 19.
<https://doi.org/10.1186/s12913-019-4691-z>
- [40] McCurdy SA, Ross MW, Williams ML, Kilonzo GP, Leshabari MT. Flashblood: Blood sharing among female injecting drug users in Tanzania. *Addiction.* 2010; 105: 1062–70.
<https://doi.org/10.1111/j.1360-0443.2010.02908.x>
- [41] Rudolph AE, Davis WW, Quan VM, Ha T V., Minh NL, Gregowski A, et al. Perceptions of community- and family-level injection drug user (IDU)- and HIV-related stigma, disclosure decisions and experiences with layered stigma among HIV-positive IDUs in Vietnam. *AIDS Care - Psychol Socio-Medical Asp AIDS/HIV.* 2012; 24: 239–44.
<https://doi.org/10.1080/09540121.2011.596517>
- [42] Khuat Thu Hong, Nguyen Thi Van Anh & JO. Understanding HIV and AIDS-related Stigma and Discrimination in Vietnam. 2004.
- [43] Lim T, Zelaya C, Latkin C, Quan VM, Frangakis C, Ha TV, et al. Individual-level socioeconomic status and community-level inequality as determinants of stigma towards persons living with HIV who inject drugs in Thai Nguyen, Vietnam. *J Int AIDS Soc.* 2013; 16.
<https://doi.org/10.7448/IAS.16.3.18637>
- [44] World Bank. Gender-based violence: An analysis of the implications for the Nigeria for women project. *Int Bank Reconstr Dev World Bank* [Internet]. 2019; 1–48. Available from: www.worldbank.org

- [45] Shannon K, Kerr T, Allinott S, Chettiar J, Shoveller J, Tyndall MW. Social and structural violence and power relations in mitigating HIV risk of drug-using women in survival sex work. *Soc Sci Med* [Internet]. 2008; 66: 911–21. <https://doi.org/10.1016/j.socscimed.2007.11.008>
- [46] Olaiya O, Nerlander L, Mattson CL, Beer L. Exchange sex among people receiving medical care for HIV in the United States—medical monitoring project 2009–2013. *AIDS Care - Psychol Socio-Medical Asp AIDS/HIV*. 2018; 30: 1315–21. <https://doi.org/10.1080/09540121.2018.1465174>
- [47] Tun W, Vu L, Adebajo SB, Abiodun L, Sheehy M, Karlyn A, et al. Population-based prevalence of hepatitis B and C virus, HIV, syphilis, gonorrhoea and chlamydia in male injection drug users in Lagos, Nigeria. *Int J STD AIDS*. 2013; 24: 619–25. <https://doi.org/10.1177/0956462413477553>