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## **Sexual Risk Behaviour and Knowledge of HIV/AIDS among Male Prison Inmates in Kaduna State, North Western Nigeria**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Authors OA and KS designed the study and wrote the protocol. Author OA managed the literature searches with authors ERA and OPE also analyse the data with author AUA. Author SJO wrote the first draft of the manuscript with authors AUA, OA and OPE. He also managed the literature searches. Author AUA performed the statistical analysis and managed the analyses of the study with OA and OPE. Author KS designed the study and wrote the protocol and also managed the literature searches. Author ERA managed the literature searches with authors OA, OPE, KS and SJO. Author OPE managed the literature searches and analyses of data. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Background:** The average numbers of Nigerians who have been incarcerated over the past three decades when HIV/AIDS was discovered have been increasing and the seroprevalence of HIV/AIDS amongst the prison inmates remained higher than the national average due to the occurrence of risky sexual practices among inmates and inadequate HIV prevention, care and support services. This study assessed the sexual

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risk behaviour and knowledge of HIV/AIDS among inmates in Kaduna State, north western Nigeria.

**Methodology:** A descriptive cross sectional study with qualitative method of data collection (focus group discussion) was conducted on 107 inmates aged 20 to 55 years in Kaduna State Prisons Command between September 8<sup>th</sup> and October 2<sup>nd</sup> 2010. Information elicited were transcribed and translated where appropriate and presented as tables and in narrative forms with relevant quotations.

**Results:** The mean average age of the respondents was 34( $\pm$ 8.62) years. The general awareness and knowledge of causative agent of HIV infection was high (96.3% and 67.3% respectively). However, some have misconceptions of witchcraft (9.3%), enemies (11.2%), bacteria (12.1%) and mosquitoes' bite (15.9%) as the causative agent/ mode of transmission of HIV infection. 99.5% acknowledged that HIV/AIDS and risky sexual practices occurred in prison but denied taking part. Sex in prison was often associated with homosexual behavior among the males but participants were pessimistic about condom distribution due to fear of promotion of homosexuality (65.4%) and non compliance with religion (34.6%).

**Conclusion:** Despite high level of awareness of HIV/AIDS among inmates, there are still misconceptions. Homosexual practices associated with HIV/AIDS transmission is practiced among the male inmates; however, the use of condom which is one of the evidence based strategies for the prevention of sexual transmission of HIV/AIDS is met with a high degree of resistance by inmates. Therefore, there is need for implementation of HIV/AIDS interpersonal communication and counseling programmes for the inmates in Nigeria prisons.

*Keywords: Sexual risk behavior; knowledge; HIV/AIDS; inmates.*

## 1. INTRODUCTION

In Nigeria, just like many other parts of the world, one of the most extensively discussed issues on the public agenda today is the increase in crime rate and increase in prison population [1-4]. The first official Nigerian human immunodeficiency virus (HIV) case was reported in 1986, and since then, the seroprevalence and severity of this disease in prison population remained considerably higher than the national average [5-10]. This has been attributed to numerous factors associated with crime offenders and custodial institutions. A high proportion of the estimated 45000 prison inmates at risk of HIV/AIDS are young people between the ages of 25 to 29 years [5] and are largely from the most marginalized groups in the society where problems of unemployment, overcrowding, poor nutrition, ignorance, inaccurate message about HIV, presence of untreated sexually transmitted diseases, poor access to health facilities and absence of screening are common [11-12].

Prior to incarceration most prison inmates engaged in risky sexual practices such as unprotected sex with multiple partners, homosexuality, commercial sex work, transactional sex, sexual violence, drug abuse, sex in exchange for drugs and impaired judgment from drug intoxication. Incarceration on the other hand, put them at extra disadvantage and risk of HIV/AIDS infection. Review of available data on gender composition of the incarcerated persons worldwide indicates that prison institution in terms of the prisoners and staff population are predominantly male dominant [13-16]. It is apparent that in such gender exclusive environment, homosexual activity which are culturally, religiously, and politically unacceptable by most societies are widely spread behind the wall and Nigerian prisoners are not exception. However, majority of these inmates who engaged in homosexual activities in

the prisons are actually circumstantial homosexuals who would not have become involved in the practice if they were not confined [8,9,10,17,18]. Some inmates are lured by other inmates to having conceptual anal intercourse in exchange for food and toiletries probably due to lack of basic sanitary materials and adequate nutrition in prison. Overcrowding and congestion in prison cell and inadequate prison staff also promotes these illicit sexual behaviours among inmates; and very often it takes place without the knowledge of the prison authority and inmates may not be able to report fellow inmates for fear of punishment [6,17,18].

Investigations revealed that the prison services have been neglected more than any other criminal justice agency in Nigeria and most of the prisons were built during the colonial era for the purpose of accommodating little number of inmates [3,4,11,18]. All these made the accommodating cells overcrowded, with prisons becoming breeding grounds for HIV/AIDS and other diseases such as Hepatitis B Virus (HBV) and Tuberculosis [2-4]. Intervention programmes for HIV/AIDS response in the prison population are not new. Life Link Organization (LLO) in 1999 organized a national conference on HIV/AIDS in Nigerian prisons in response to the observed risky practices and low level of awareness of HIV/AIDS among Nigerian prison inmates and that led to the decision to have HIV/AIDS policy in Nigerian prisons. The recommendations made has not been implemented in most prisons, therefore most prison inmates do not have access to the HIV/AIDS prevention campaigns [17,18]. There is scanty literature on qualitative research on assessment of sexual behaviour in Nigerian prisons. The aim of this study is to assess the sexual risk behaviours and knowledge of HIV/AIDS among inmates in Kaduna State, north western Nigeria.

## **2. METHODOLOGY**

### **2.1 Background Information**

Nigeria prison system is a Federal government owned organization with staff strength of 27,000 taking lawful custody of about 45,000 inmates nationwide out of which about 36,000 (80.0%) are those awaiting trial [4]. Kaduna State command has 15 main prisons, 10 satellite prisons and one farm centre. The largest of the prison is Kaduna convict prison; established in 1915 to accommodate 550 inmates and Zaria prison established in 1948 to accommodate 400 inmates. The total inmates incarcerated in all the prisons at the time of the study was 1838, and all the prisons accommodate male inmates with the exception of Kaduna and Zaria prison which accommodates female inmates as well. Each of the prisons has a medical unit which provides preventive and minor curative services to inmates and staff and refers serious medical or surgical cases to the nearest secondary or tertiary health facility. There are periodic health talks and HIV screening but no pre-admission counseling and screening of inmates for HIV in any of the prisons.

### **2.2 Study Design and Data Collection**

A cross sectional descriptive study was employed for the study using focus group discussion guide. The study included all inmates who had stayed up to one and half year in the selected prisons in Kaduna State, north western, Nigeria. A sample size of 96 was obtained using the formula  $n = Z^2 pq/d^2$  [20] with assumption of 50% inmates knowledgeable of risky sexual behaviours in prison and 10% degree of precision at 95% confidence interval. Considering attrition rate of 10% the calculated sample size was adjusted to 107.

A pre-test of the instruments was carried out with 11 inmates (10% of the calculated sample size) in Kuje convict prison, Abuja. The instrument included information on socio-demographic variables, circumstances surrounding imprisonment, knowledge about HIV/AIDS and practice of risky sexual behaviours. An average of seven to eight inmates were selected purposively from the 15 main prisons in the State and a total of 15 focus group discussion sections lasting for a maximum of one and half hour were conducted at different days between September 8<sup>th</sup> and October 2<sup>nd</sup> 2010. Respondents who declined to participate were replaced to get the desired sample size. The discussion was carried out by the principal researcher and a note taker using focus group discussion guide in local languages (Hausa), English or vernacular English. Tape recordings were done with the consent of the respondents and the prison authority.

### **2.3 Ethical Consideration**

Ethical approval for the study was obtained from the ethical committee of the Nigerian prisons service authority review board before the study was conducted. An informed verbal consent was obtained from each of the participants before carrying out the study, agreeing that inmate's confidentiality must be maintained.

### **2.4 Data Analysis**

The information collected were transcribed and translated where appropriate; coded and then presented as simple percentages using Statistical Package for Social Sciences (SPSS) version 17.0, while some were presented in narrative forms with relevant quotations.

## **3. RESULTS**

### **3.1 Socio-demographic Characteristics**

The mean age of the inmates was 34 years, age range 20–55 years and Standard Deviation (SD) of 8.62 years. All the respondents were educated at least to the primary school level. Twelve (11.2%) of them had attained tertiary education from university and polytechnics. Twenty (18.7%) completed their secondary education, while fifty five (51.4%) were secondary school drop outs. Majority of the respondents (27.1%) were unemployed before imprisonment. Seventeen (15.9%) were farmers, fourteen (13.1%) were drivers, ten (9.3%) were civil servants, nine (8.4%) were commercial motorcycle riders, seven (6.5%) were mechanics, four (3.7%) were carpenters and traders respectively. The inmates were predominantly of Hausa ethnicity and majority of them were Muslim. Other tribes were Idoma, Ibirra, Bajju, Igala and Jaba. Eighty eight (82.2%) of the respondents were not married before incarceration, ten (9.3%) were married, while nine (8.4%) were divorced (Table 1).

Majority of the respondents were in custody for theft (30.8%). Other crimes resulting to imprisonment were illegal possession of fire arms (18.7%), fraud (18.7%), rape, domestic violence, or combined (14.0%); while ten (9.3%) were imprisoned for murder and culpable homicide (Fig. 1). Majority (67.3%) of them were still awaiting trial, while less than half (32.7%) were already convicted. Amongst those convicted 1.9% was sentenced as condemned inmates, (Fig. 2), 2.8% were sentenced for life, while 15% and 13.1% have sentenced of 1- 4 years and 5-10 respectively. The calculated mean duration of years spent by all the respondents was three years six months.

### 3.2 Knowledge of HIV/AIDS

A hundred and three (96.3%) of the respondents were aware of HIV/AIDS, but only 67.3% were able to describe the acronyms HIV and AIDS correctly. One of the respondents was quoted as saying “ *What I know is, HIV is high immune virus and is very –very dangerous to human system*” Another respondent said “*AIDS is Advance immune deadly disease, that once is contracted, it takes the person some few days or months and then the person gives up; there is no cure for It*”.

**Table 1. Socio-demographic characteristics of respondents (n=107)**

<b>Characteristics</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age group (years)</b>		
Mean age	34 ( $\pm$ 8.62)	
20-24	9	8.4
25-29	35	32.7
30-34	18	16.8
35-39	16	15.0
40-44	13	12.1
45-49	10	9.8
50-55	6	5.6
<b>Ethnicity</b>		
Hausa	44	41.1
Ibo	20	18.7
Yoruba	18	16.8
Others	25	23.4
<b>Religion</b>		
Muslim	56	52.3
Christianity	48	44.8
Others	3	2.8
<b>Marital status before incarceration</b>		
Single	88	82.2
Married	10	9.3
Divorced	9	8.4
<b>Highest level of education</b>		
Primary	20	18.7
Complete secondary	20	18.7
Secondary drop out	55	51.4
Post secondary	12	11.2
<b>Occupation before incarceration</b>		
Farming	17	15.9
Driving	14	13.1
Schooling	13	12.1
Civil servant	10	9.3
Motorcycle rider (Okada)	9	8.4
Trading	4	3.7
Motor Mechanics	7	6.5
Building/carpentry	4	3.7

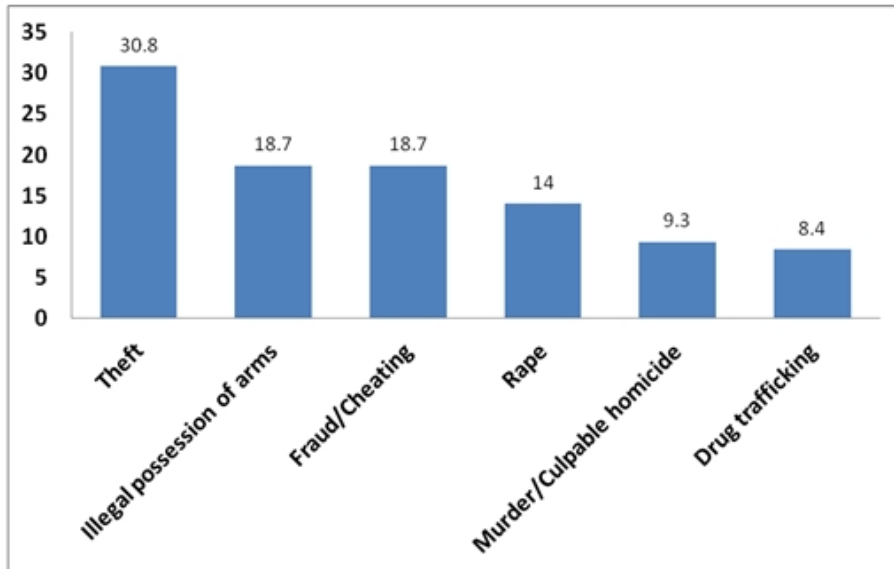


Fig. 1. Reasons for imprisonment of inmates

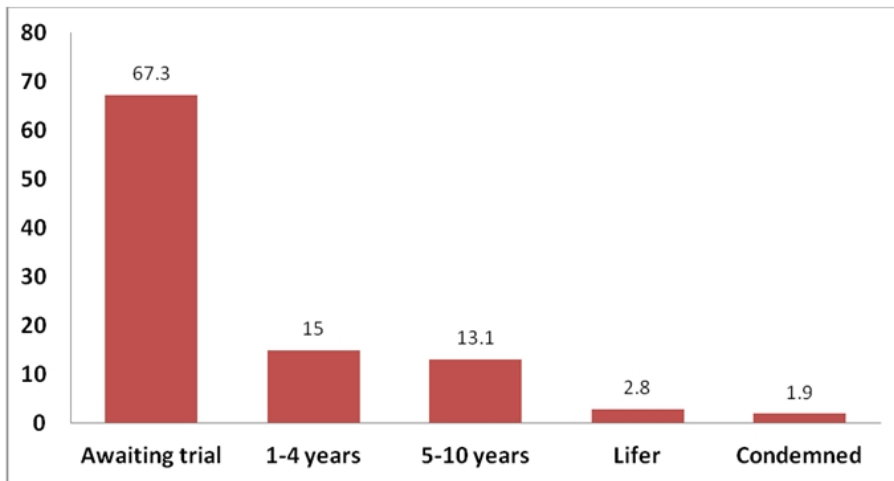


Fig. 2. Nature of sentence of respondents

Majority (65.4%) know that a healthy looking person can still have HIV, while 14.0% were not sure. 67.3% attributed the cause of HIV infection to virus, 12.1% to bacteria and 9.3% to witchcraft and punishment from God, 11.2% attributed it to “enemies” Almost all the respondents were able to mention at least two correct features and mode of transmission of the infection. However, 15.9% had misconceptions of mosquitoes bite as a mode of transmission of HIV/AIDS. Nine (8.4%) and seven (6.5%) had misconceptions of sharing of utensils and hand shake with an infected person respectively. Majority of the respondents mentioned avoidance of indiscriminate sex (95.3%) and use of condoms (80.0%), while ten (9.3%) mentioned taking of antibiotics before and after sex as a method of preventing HIV/AIDS (Table 2).

**Table 2. Knowledge of HIV/AIDS among the respondents (n=107)**

<b>Characteristics</b>	<b>Frequency</b>	<b>Percent</b>
<b>Awareness</b>		
Yes	103	96.3
No	4	3.7
<b>Meaning of acronym HIV/AIDS</b>		
Correct	72	67.3
Incorrect	35	32.7
<b>Cause of illness</b>		
Virus	72	67.3
Bacteria	13	12.1
Enemies	12	11.2
Witchcraft /punishment from God	10	9.3
<b>Healthy person can be HIV positive</b>		
Yes	70	65.4
No	22	20.6
Not sure	15	14.0
<b>Mode of transmission</b>		
Unprotected sexual intercourse	102	95.3
Blood transfusion	100	93.5
Mother to child	98	91.6
Unsterilized materials/instruments	96	89.7
<b>Misconceptions</b>		
Mosquitoes	17	15.9
Sharing of utensils	9	8.4
Hand shake with infected person	7	6.5

### 3.3 HIV and Risky Sexual Behaviour

Concerning the existence of HIV/AIDS and risky sexual behaviour in prison environment, 99.5% believed that HIV existed in prisons. The predominant risky sexual practices mentioned to be responsible for the transmission in prison were “*lesbianism, oral sex, masturbation and homosexuality*” (3.7%, 9.3%, 15.0%, and 82.2% respectively- Table 3). Twenty (18.7%) of the respondents said they know some of the inmates who practice anal sex in prison. None of them admitted to partaking in any of the mentioned risky sexual practices either before imprisonment or while in the prison. *One of the respondents was quoted: “there is one inmate who approached me to have anal sex with me and that he will provide soap and slippers for me if I will accept, but I refused”*. When asked whether any inmate has ever been caught and the authority position on those caught? eighty six (80.4%) of the respondents reported that there is intense societal pressure both from the prison authority and the inmates on those practicing same sexual intercourse because the act of a man having sex with man is regarded as a taboo by the government, prison authority and inmates themselves. All the respondents agreed that in few instances when those practicing the acts are caught, they face severe punishment from the prison authority and the inmates also bring them out and boo them in their respective cells.

### 3.4 Condom Distribution and Prevention of Risky Sexual Behaviours in Prison

On the issue of condom distribution to prison inmates, all the respondents rejected the idea of condom distribution in prison. Seventy (65.4 %) of them stated that condoms access in prison will promote homosexuality, while thirty seven (34.6%) stated that condom use is against their religion (Table 3). One respondent was quoted *“we do not have wife here and we do not want homosexual act, if we have condom are we going to use it for men?”*

**Table 3. Knowledge of risky sexual behaviours and condom acceptance among respondents (n=107)**

Risky sexual practice	Frequency	Percent
Homosexuality	88	82.2
Masturbation	16	15.0
Oral sex	10	9.3
Lesbianism	4	3.7
<b>Condom acceptance</b>		
No	107	100.0
<b>Reasons for rejection condom</b>		
Promiscuity	70	65.4
Religion	37	34.6

Some ways were suggested by the respondents as means of preventing unhealthy sexual relationship in prisons; 104(97.2%) called for government efforts to discharge inmates to their homes, 3.0% calls for improvement in inmates' welfare in terms of feeding and proper medical treatment to avoid issues of exchange of food for sex among inmates. 40.2% suggested that toiletries and clotting should be provided for inmates at regular intervals to avoid having sex with fellow inmates. 29.0% calls for public campaign to encourage relatives to visit their people in the prisons because some inmates who do not have sufficient items may be persuaded to have sex secretly with other prisoners who have enough in exchange for those items they lack. A respondent was quoted: *“we are kept here for long time without trial and even bible say there is time for everything. There is time that you feel like having sex and if you cannot remove your mind from it, if you cannot control yourself, you will start misbehaving and involving yourself in things like homosexuality, masturbation or do one thing or that to remove sperm from your body”* One respondent suggested amnesty discharge for any HIV positive inmate. The respondent was quoted: *“captivity alone makes person think of what brought you to prison and if you are been told that you are HIV positive that will be an added problem to cope with. I think they cannot cope because in the prison, staff and inmates pretend to love those people with HIV and AIDS but in actual sense the moment inmates are diagnosed to have HIV everybody will hate them”*.

## 4. DISCUSSION

The socio-demographic characteristic of inmates in Kaduna State, Nigeria shows 51.4% secondary school dropout rates with high level of unemployment before incarceration. These characteristics are comparable to reports in other studies [11-12]. The identified age bracket (25-39 years) in this study is of great concern to transmission of HIV as similar studies reported that they are the most sexually active age group as well as the ones most likely involved in risky sexual and non-sexual practices [9,21]. In this study, 14.0% of the inmates were imprisoned due to either rape or domestic violence, or combined and the



average duration of stay of three years six months in prison is in keeping with 2-7 years reported for all Nigeria prisons [2-4]. These findings may probably be due to hardship in the country which leads to high rate of crime and imprisonment and delayed trial of inmates and poor access to legal aids reported in similar studies [2-4,13-15,22].

This study has found out that that HIV is not a silent issue to Nigerian prison inmates. Majority of the respondents have good understanding of HIV/AIDS even though there were still some misconceptions in the mode of transmission and the correct meaning of the acronym HIV/AIDS. This may affect any effective HIV prevention and control programme in prison setting. The high level of knowledge of HIV/AIDS is probably a reflection of the generally high level of knowledge of HIV/AIDS among the Nigerian population [23]. Elsewhere in Africa and other prisons in the world, there are noticeable misconceptions of various degrees that were also documented [16, 24, 25].

This study has demonstrated that HIV/AIDS existed in prisons and homosexuality in prison is real. Amongst the 99.5% of inmates who believed that HIV existed in Nigeria prison, 82.5% attributed homosexuality to be the sexual risky behaviour associated with HIV/AIDS transmission present in prisons. Other practices were lesbianism, oral sex and masturbation, but none of them admitted to participate in any of the mentioned risky sexual practices in Kaduna prison. This finding on the average is comparable to that reported for Kaduna convict prison by Sabitu et al [9] and is higher than the prevalence of 8.0%-15.0% of homosexuality reported for inmates in selected Nigerian prisons [4,18] and in Kirikiri prison Lagos, where Odujinrin et al reported 42.8% [26]. Homosexuality was common probably due to the male prisoner's gender dominance. Exchange of food for sex due to hunger was stated as one of the driving factors responsible for sexual practice in the study prison and that is not far from reasons giving in some studies conducted elsewhere [6,18,21].

Issues regarding condom use are important areas of interest in HIV prevention strategies in the prison. Despite the benefits of consistent condom use in HIV prevention this study also shows that many inmates frown at the use of condom and will have poor compliance to its use even if distributed. 65.4 % of Kaduna state prison inmates stated that condoms access in prison will promote homosexuality, while 34.6% of them said that condom use is against their religion. The intended non compliance to condom use reported in this study is comparable with the reported opposition of free access to condom among inmates in Zambia prison where majority (68.0%) opinioned that condom distribution among prison male was socially unacceptable as it could lead to high cases of homosexuality [24]. It could also be attributed to religious backgrounds and lack of legal or constitutional back up on gay practice in our society. Similar studies in other prisons provoked controversies and implementation of divergent policies [12,13,27,28].

## **5. CONCLUSION**

The study found that despite high knowledge about HIV/AIDS among inmates in Kaduna State prisons, sexual risk behaviours like homosexuality which is associated with HIV/AIDS transmission still exists among the prison but the authority and inmates themselves frowned at use of condoms which is one of the evidence base strategies for the prevention of sexual transmission of HIV/AIDS. Because of the sensitive nature of this target population, interpersonal communication and counseling will be the main channel of communication on intervention.

## **CONSENT**

All the authors declare that 'verbal informed consent was obtained from all the respondents and the Nigerian prison authority both for conduction of the research and the publication of the research findings in your journal.

## **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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