



Assessment of the Awareness, Attitude, and Practice of Prisoners in Enugu to Acquired Immune Deficiency Syndrome (AIDS) and Voluntary Counselling and Testing (VCT)

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ABSTRACT

Background: HIV/AIDS was described by WHO as a global health emergency as it is the single leading cause of death in adults. VCT combines counseling and testing into one service. It is an important strategy in the prevention and treatment of HIV/AIDSs.

Design and Methods: A descriptive cross-sectional study was conducted among all consenting prisoners in the dormitories selected by cluster random sampling of the dormitories in Enugu prison, Nigeria. Data on socio-demographic characteristics, awareness of HIV/AIDS, VCT and attitude to HIV/AIDS were obtained using a self-administered questionnaire. Data was analyzed using Epi Info version 6.04.

Results: One hundred and thirty-five inmates participated in the study. The mean age of participants was 33.4 ±11.7 years. Only 48.6% of the tertiary educated respondents had gone for HIV test. All but one respondent had heard about HIV/AIDS 134 (99.3%) while 63.4% had heard about VCT. Average awareness score for HIV/AIDS is 75.0%, while awareness score for VCT is 38.0%. Family and friends were the highest sources of information on HIV/AIDS (34.6%) while mass media was the highest on VCT. If tested positive for HIV, 52.2% of the respondents would disclose their HIV status while 17.9% would like to spread the infection to others. Avoidance of extra-marital sex to prevent being infected was agreed on by 45%, while 5% had not made any behavioral change since hearing about HIV.

Conclusion: Prisoners, though incarcerated, are part of the society. There is a need for prevention programs in such corrective institutions as the risk of infection is high in such places.

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1. Introduction:

HIV continues to be a major global public health issue, having claimed more than 35 million lives so far. In 2015, 1.1 (940 000–1.3 million) million people died from HIV-related causes globally (World Health Organization [WHO], 2016). Globally, there were approximately 36.7 (34.0–39.8) million people living with HIV at the end of 2015 with 2.1 (1.8–2.4) million people becoming newly infected with HIV in 2015 (WHO, 2016).

Sub-Saharan Africa is the most affected region, with 25.6 (23.1–28.5) million people living with HIV in 2015

(WHO, 2016). Also, sub-Saharan Africa accounts for two-thirds of the global total of new HIV infections. Voluntary counseling and testing (VCT) for HIV is an essential and critical way for prevention, care, and treatment of HIV (Abdu et al., 2017). It allows early detection of illness, reducing transmission, morbidity, and mortality from it. It has potential preventive effects on HIV transmission and serves as a gateway to other services. It includes both testings for HIV status and counseling on different issues. Counseling should guarantee confidentiality and include



information about HIV transmission and personal discussion about an individual's risk (Abdu et al., 2017). This enables people to make informed decisions about their lifestyles.

VCT combines two activities - counseling and testing into one service. As an approach, it is useful in all settings both resource-rich and poor, urban and rural settings. It is also adaptable to clients' needs and as such can be done for individuals and couples, for people of all ages and all backgrounds including prisoners. Prisons in an environment that is a risk for human immunodeficiency virus (HIV) transmission because of the behavioral practices such as the injection of illicit drugs through sharing of needles, risky sexual behavior, and tattooing (Gberindyer, Agbecha, Shindi & Useh, 2017). Although rape in prisons is rarely reported, WHO estimates a prevalence of up to 16% in some prison environments (Gberindyer, Agbecha, Shindi & Useh, 2017).

Infection with the virus could lead to acquired immunodeficiency syndrome (AIDS). Nigeria has made some progress in efforts to tackle the problem of HIV/AIDS. Massive sensitization programs have indeed increased the level of awareness for HIV/AIDS, but this is yet to translate to significant changes in risky behaviors (Sabit, Iliyasu & Joshua, 2009). This is due mainly to the inadequate access to HIV counseling and testing services. HIV/AIDS control and support services require huge capital and human resources that are far beyond the normal state budget (Oruonye, Abubakar, Ahmed & Dan, 2017). VCT is an important strategy in the prevention and treatment of HIV/AIDS and serves as a veritable entry point to behavioral change. This is because to facilitate behavioral change an individual should be offered an opportunity to know his/her HIV status. It focuses on the emotional, behavioral and social issues related to real or possible infection with HIV.

2. Significance for Public Health:

Prisons concentrate a great number of HIV-infected and at-risk population, while prisoners comprise one of the least represented populations in national HIV strategies. Prison inmates are at risk of contracting HIV because they engage in high-risk behaviors such as homosexuality, unprotected sexual intercourse, use of non-sterile contaminated injection equipment and tattooing (Gberindyer, Agbecha, Shindi & Useh, 2017).

This risk is aggravated by the prison conditions characterized by overcrowding, boredom and inadequate access to health services (Tarkang et al., 2016). This phenomenon poses significant public health concerns with regards to the control of infectious diseases and HIV prevention and care (Tarkang et al., 2016). There is a general lack of data on HIV/AIDS in prisons to provide a real picture of the current situation in Nigeria. However, despite the high knowledge of HIV/AIDS among prisoners, there is a need to know their attitude to VCT which is a key

element to identifying HIV infected persons who could benefit from therapeutic intervention. This study sets out to identify some of these.

3. Methodology:

3.1. Study area

The study was conducted in a prison located in Enugu, the capital of Enugu state in Southeast Nigeria in 2015. Its inhabitants are mainly of Igbo ethnicity and most of them are civil servants with a significant number of people engaged in business. The prison is situated opposite the city's old park, at the junction between Okpara avenue and Kingsway road. The prison has a total of twenty-eight dormitories; twenty-four for males, two for females and two asylums. Its total capacity is about one thousand for both sexes. It currently has 1754 inmates, much more than the 1000 capacity it was built for (Osagbemi, 2013).

The prison has an observation unit which also serves as a health center and its staff composition includes a doctor, matron, and several auxiliaries. They provide both curative and preventive services and this includes VCT for HIV/AIDS. Recreational facilities in the prison include football, draught, ludo. It has a secondary school with ten teachers. Religious activities also take place with the Moslems and Christians conducting services. There are also electrical, carpentry and metal workshops in the prison.

3.2. Study population and design:

The study population comprised all consenting prisoners in the dormitories selected by cluster random sampling of the dormitories. A cross-sectional descriptive design was used.

3.3. Sampling and sample size determination:

The sample size was determined using sample size formula for proportion. The sample size was calculated using an estimate of reported HIV seroprevalence among prisoners (Gberindyer, Agbecha, Shindi & Useh, 2017). To assess the awareness and attitude to AIDS and VCT at 95% confidence limit and 0.05 degree of tolerable error, the minimum number of prisoners required for the study was calculated to be 126 and bearing in mind an anticipated non-response of 10%, a sample size of 140 was chosen.

The sampling method adopted was the cluster method using the sampling frame of the prison dormitories. Every prisoner in the selected dormitory/cluster was studied. The male dormitories were numbered 1 to 24 using the basket method, 3 dormitories were selected. There were 4 female dormitories and 1 was chosen. There are 35 inmates in each dormitory.

3.4. Data collection methods:

Data collection tool was standardized semi-structured questionnaires which were pre-tested prior to use. The interviewer-administered method was used. The



questionnaire was written in English and comprised of questions on socio-demographic characteristics, awareness of HIV/AIDS, counseling and VCT and also an attitude to HIV/AIDS and VCT.

3.5. Ethical Consideration:

Ethical approval for the study was obtained from the ethical committee of the University of Nigeria Teaching Hospital, Ituku, Ozalla. Verbal informed consent was obtained from the medical and welfare departments in Enugu prison and from each respondent.

3.6. Data Analysis:

This was done with the aid of EPI info statistical software version 6.04. Tabulations, non-parametric tests were used to compare variables, while the Chi-square test was used to determine the statistically significant differences between variables. Statistical significance was tested at the 0.95 confidence interval. Results were considered to be significant when the two-sided value was < 0.05.

3. Results:

One hundred and thirty-five inmates participated in the study. The mean age of the respondents was 33.4±11.7 years. Age group 21- 30 years had the highest respondents of 54 (40%), which comprises of 33% male respondents and 62.5% of female respondents. Many of the respondents were of Southeast origin 83 (61.5%), Enugu being in Southeast Nigeria. 56.3% of the respondents were single. There were more Christians (87.4%) while 48.9% had secondary school as the highest level of education attained.

Table (1): Age group of respondents according to sex.

Sex	Male	Female	Total
	Frequency (%)	Frequency (%)	Frequency (%)
11 - 20	9 (8.7)	4 (12.5)	13 (9.6)
21 - 30	34 (33.0)	20 (62.5)	54 (40.0)
31 - 40	33 (32.0)	7 (21.9)	40 (29.6)
41 - 50	18 (17.5)	1 (3.1)	19 (14.1)
51 - 60	4 (3.9)	0 (0)	4 (3.0)
61 - 70	5 (4.9)	0 (0)	5 (3.7)
Total	103 (100)	32(100)	135 (100)

The proportion of respondents that have gone for HIV test: Sixteen (34.8%) of the married respondents, 23(30.7%) of single, 38(3.7%) of Christians and 4(23.5%) of Moslem respondents have gone for HIV test. While 48.6% of respondents with tertiary education have also gone for an HIV screening test.

Table 2: Demographic characteristics of respondents with the proportion that have gone for HIV test

Respondent's characteristics	Frequency (%)	Gone for HIV test (%)
Marital status		
Single	76 (56.3)	23 (30.7)
Married	46 (34.1)	16 (34.8)
Devoiced	12 (8.9)	2 (16.7)
Widowed	1 (0.7)	1 (8.3)
Religion		
Christianity	118 (87.4)	38 (3.7)
Islam	17 (12.6)	4 (23.5)
Highest Level of Education		
None	3 (2.2)	0 (0)
Primary	14 (10.4)	4 (44.4)
Secondary	66 (48.9)	21 (46.7)
Tertiary	52 (38.5)	17 (48.6)

Awareness of HIV/AIDS and VCT according to the highest level of education: All the respondent had heard about HIV/AIDS 135 (100%). 85(62.9%) had heard about VCT.

Table 3: Awareness of HIV/AIDS and VCT according to the highest level of education

Highest Level of Education	Heard About HIV/AIDS (%) n=135	Heard about VCT (%) n=135
None	3 (100.0)	1 (33.3)
Primary	14 (100.0)	7 (53.8)
Secondary	66 (100.0)	40 (60.6)
Tertiary	52 (100.0)	37 (71.2)
Total	135 (100.0)	85 (62.9)

HIV/AIDS awareness: About 118 (87.4%) of the respondents agree that the highest mode of transmission of HIV in Nigeria is through unprotected sex while 46 (34.1%) agree that there is a cure for HIV/AIDS. Analysis of the response on HIV/AIDS awareness gave an average awareness score of 75%.

Table 4: HIV/AIDS Awareness.

HIV/AIDS can be transmitted under normal circumstances:	Agree (n=135) (%)	Disagree (n=135) (%)	Don't know: (n=135) (%)
Unprotected sexual intercourse	127 (94.07)	4 (2.96)	3 (2.22)
Hugging	8 (5.93)	120 (88.89)	6 (4.44)
Mosquito bite	13 (9.63)	102 (75.56)	19 (14.07)
Blood transfusion	119 (88.15)	6 (4.44)	9 (6.67)
Blood transfusion	119 (88.15)	7 (5.19)	8 (5.93)



Sharing razor blades and other sharp objects	18 (13.33)	100 (74.07)	16 (11.85)
HIV/AIDS can be prevented:			
Immunization	13 (9.63)	91 (67.90)	30 (22.22)
Abstinence from sex	114 (84.44)	17 (12.59)	3 (2.22)
Use of condom	75 (55.56)	40 (29.90)	19 (14.07)
Taking antibiotics before and after sex	22 (16.30)	86 (64.20)	26 (19.26)
Being faithful to a partner	104 (77.04)	11 (8.15)	19 (14.20)
The largest mode of transmission of HIV/AIDS in Nigeria is through unprotected sex	118 (87.41)	9 (6.67)	7 (5.19)
There is a cure for HIV/AIDS	46 (34.07)	52 (38.52)	36 (26.67)

VCT awareness: Of all the respondents, 85(63%) had heard about VCT and 70 (82.4%) of those that have heard, agree that VCT is an HIV prevention approach. Average VCT awareness score among respondents that had heard about VCT was 61% while overall awareness score for all respondents was 38%.

Sources of Information on HIV/AIDS and VCT: Mass media was the highest source of information for both HIV/AIDS and VCT.

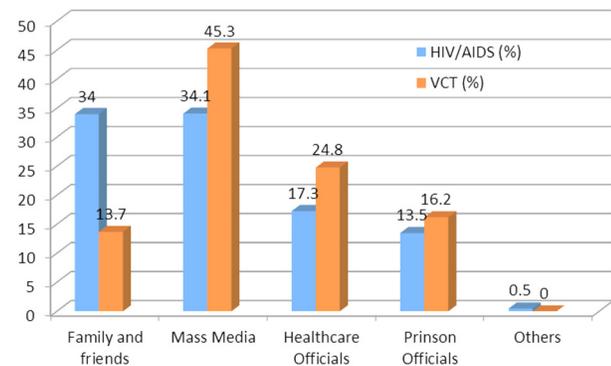


Figure 1. Source of Information on HIV/AIDS and VCT.

The attitude of Respondents if tested positive for HIV: If tested positive for HIV, 53.2% of the respondents would disclose their HIV status while 17.9% would like to spread the infection to others.

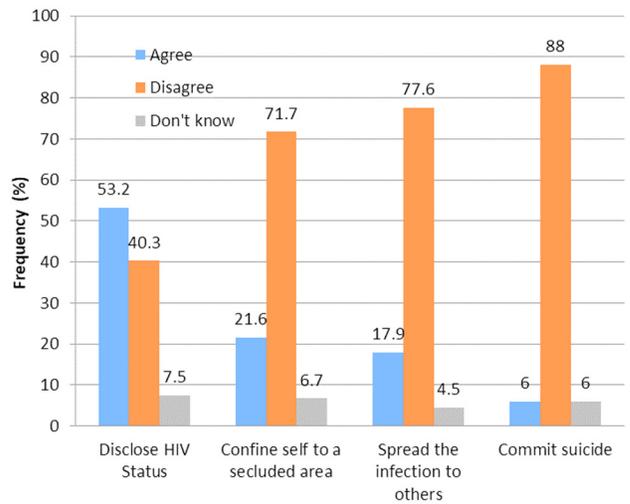


Figure 2. The attitude of respondents if tested positive for HIV.

Attitude towards people with HIV/AIDS: Of the respondents, 95 (70.4%) would not want HIV positive persons to be separated from others, while 8 (6%) were of the opinion that they should be killed to prevent the spread of the disease.

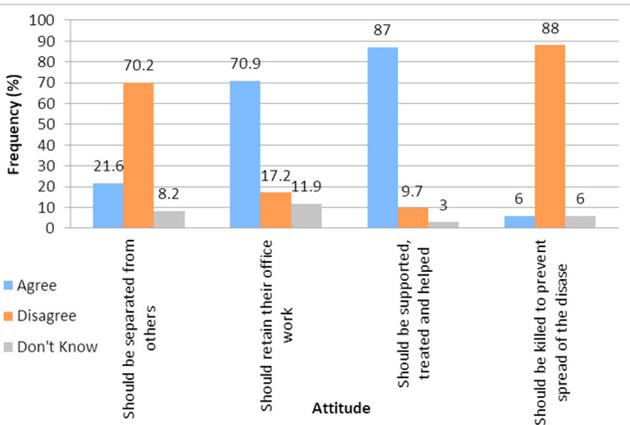


Figure 3. Attitude towards people with HIV/AIDS.

Behavioral changes to avoid getting infected with HIV or to prevent spread of disease: Of all the respondents, 61(45%) agreed on avoidance of extra-marital sex to avoid being infected, 14% agreed on ascertaining that medical instruments are sterilized, 18% indicated using condoms, while 7(3%) had not made any behavioral change since they heard about HIV.

Factors that facilitate or limit the use of VCT by prisoners: VCT being free of charge had the most facilitating effect on its use by prisoners while not being readily accessible had the most limiting effect on its use by prisoners.

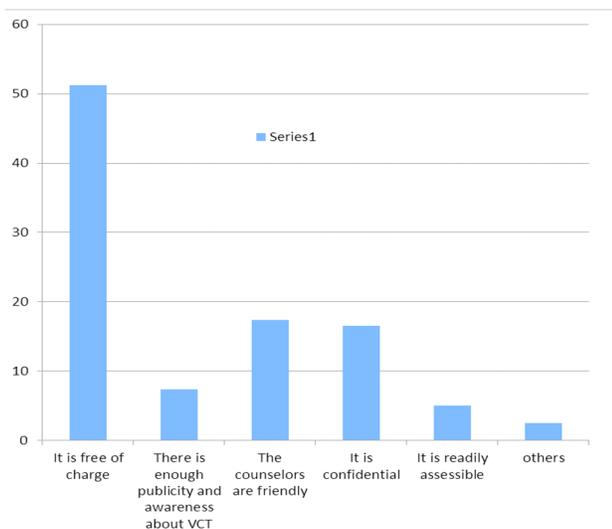


Figure 4. Factors that facilitate the use of VCT by prisoners.

4. Discussion:

The age group 21-30 years had the highest number of respondents in both males and females as they are in the sexually active age group. This finding is similar to that from a study done in a prison in Osun state Nigeria where 43.1% % of the respondents were in the age group 20 -29 years (Osagbemi, 2013). This can be attributed to the increased tendency for crime and high-risk behaviors among this age bracket.

Majority of the prisoners (99.3%) had heard about HIV/AIDS while 34.3% (46) agree that there is a cure for HIV/AIDS. A study was done in Kaduna State, Northern Nigeria conducted on 107 inmates in Kaduna State Prisons Command showed similar results. The general awareness and knowledge of the causative agent of HIV infection were high (96.3% and 67.3%) respectively (Audu, 2013). This conforms with the results of a similar study done at Quthing prison, Lesotho which also revealed that 95.5% had heard about HIV/AIDS and over 70% of the inmates knew how HIV/AIDS could be transmitted or prevented (Akeke et al., 2007). The result of a study done by Saliu and Akintunde, 2014, showed that 99.5% acknowledged that HIV/AIDS and risky sexual practices occurred in prison but denied taking part.

Highest source of information on HIV/AIDS was from family and friends (34.6%), followed by mass media (34.1%) and health care officials (17.3%) and this is similar to the findings of a descriptive cross-sectional study carried out in Osun State, South Western part of Nigeria where 57 respondents were chosen from Ile-Ife prison, while 152 were chosen from Ilesa prison. The highest source of information on HIV/AIDS was from family and friends (34.6%), followed by mass media as most of the respondents were aware of HIV/AIDS through the radio.

Many of them also know the possible routes of transmission of the virus. Some however still erroneously believe that transmission could be through a mosquito bite, sharing of clothes and towels, usage of the same swimming pool with an infected person, witchcraft, and eating from the same plate with an infected person. Less than half of the respondents were aware of antiretroviral therapy, and a quarter of these people said the ART is used to totally cure HIV infection (Osagbemi, 2013). This is also similar to a study carried out in a prison in Jos Nigeria, the highest source of information was also from family and friends (31.5%), health care workers 27% and mass media 26.1% (Taiwo & Bukar, 2006). This confirms the role of the family and immediate society in the awareness of HIV/AIDS.

Knowledge of HIV/AIDS had affected the sexual practices of Enugu prison inmates mainly in the areas of avoidance of extramarital sex (45%), getting a personal clipper (20%) and condom use (18%). In the Jos prison study, knowledge of HIV/AIDS affected the sexual practices of 100 inmates (90.1%) mainly in the areas of mutual fidelity to their partners (45.9%) and condom use (22.5%). In the inmates in the Osun state prisons, while in the prison none of the respondents had sexual intercourse with opposite sexual partner, one percent had sex with a same-sex partner (Osagbemi, 2013). These findings prove that the message of abstinence as a preventive measure to HIV/AIDS can be well accepted and practiced.

This study revealed that 95 (70.2%) would not want HIV positive persons to be separated from others while a study conducted in Ogbomosho prison in Oyo state southwest Nigeria in December 2013, only 66 (39.5%) of the respondents will offer support and feel sorry for an HIV infected friend but 115 (68.9%) will avoid an HIV infected friend and about 68.9% believed that people with the disease should be avoided (Saliu & Akintunde, 2014). This significant difference may be due to the high awareness of the mode of transmission of the infection by inmates, which makes contact a rare threat to contracting HIV.

Furthermore, 24 (17.9%) of the respondents would spread the infection to others while 6% would commit suicide if tested positive. This is an evidence of unfavorable attitude towards HIV/AIDS. The tendency to spread the virus if infected could well be the reason for the rising prevalence of the disease as this puts the entire population at greater risk. It also shows that most of them have not received voluntary counseling and testing as this attitude would not have been present if they had.

Only 63.4% of the prisoners had heard about VCT and there is a direct relationship between the educational level and level of awareness of VCT. This shows that education has a role to play in the acquisition of knowledge about VCT. This high level of knowledge is of great advantage as the task of trying to create awareness has already been made easier and those who are aware of the program will help spread the news to those who are not.



Also, they will be more receptive to seeking and prompting to engage in VCT. Their higher educational level makes them more enlightened and thus motivate them to seek a healthy lifestyle.

Our findings reveal an average VCT awareness score among the prisoners that had heard about VCT of 61% while average VCT awareness score among all respondents was 38%. This shows that the awareness about VCT among prisoners is low and maybe because prisoners are not included in the implementation of VCT awareness program. This is further confirmed by the fact that most of the prisoners' information about VCT was through the mass media. This low awareness led to a low uptake of the VCT service which is a key element used to identify HIV infected persons who could benefit early from therapeutic interventions and prevent complications and ignorant transmission of the disease to inmates and others when they are eventually released.

Also, accessing this service helps one to live positively with the disease if present or to refrain from risky sexual behavior if the disease is absent. This will help reduce the incidence and stigma associated with this disease, which is the motivating factor to the Government and donor agencies in their push for VCT. Majority of the prisoners (51.2%) agree that VCT being free would facilitate its use by prisoners while 36.2% agree that VCT is not readily accessible thereby limiting its use by prisoners. This shows that VCT being free and more accessible will facilitate its use among prisoners. It has been known that when vital services are made free, the utilization rate increases as is the case with increased hospital utilization of over five times the usual rate at the introduction of free maternal and child health in Enugu state (Christiandolus, 2012). This was targeted towards the achievement of the 4th and 5th Millennium Development Goals (MDGs) in the state, which is to reduce child mortality and improve maternal health respectively.

5. Conclusion:

Prisoners, though sentenced, are part of the society, there is a need for prevention programs in such corrective institutions because of the increased risk of infection in such places. This will be of help in reducing the spread of the disease. It is commendable that the level of awareness about HIV/AIDS among the prisoners is high (99.3%) despite their confinement and varying duration of imprisonment, which is a credit to the awareness campaigns. However, it is of note that their knowledge about VCT is very low. VCT services should be made available and easily accessible in all prisons and should be free of charge. There is a need to intensify efforts in educating the prisoners on the need to change HIV high-risk behavior.

6. Limitations:

This study was carried out in only one Nigerian prison and may not give a true assessment of the awareness, attitude, and practice to HIV/AIDS and VCT among prisoners in Nigeria. Though the findings will be of help in planning intervention strategies, but in similar studies in a good proportion of the prisons in Nigeria will better reveal the awareness, attitude, and practice of prisoners in Nigeria to HIV/AIDS and VCT.

7. Recommendations:

Every inmate entering the Nigerian prison system must be clearly educated about how to avoid the transmission of HIV and other communicable diseases. VCT should be made a routine part of health services that are accessible to inmates. Educational efforts should be stepped up to create awareness about the availability of these VCT services and sensitize the interest of the prisoners to access the facility so as to increase its utilization and the benefits thereafter. Lastly, Programs intended to improve awareness of HIV/AIDS risk and VCT among inmates need to be designed and implemented.

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Conflicts of Interest:

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