

The Perception of People Living with Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome toward Human Immunodeficiency Virus Infection: A Single-Center Experience

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Abstract

Background: The prevention and control of human immunodeficiency virus (HIV) infection depend on the prevention of new infections as well as treating currently infected individuals. Adequate knowledge of HIV infection among person living with HIV/acquired immunodeficiency syndrome (AIDS) (PLWHA) may be an important tool in reducing spread of the virus. **Objective:** The objective of the study was to evaluate knowledge and attitude of PLWHA on HIV infection. **Methodology:** This was a cross-sectional study conducted at the Chukwuemeka Odumegwu Ojukwu Teaching Hospital. Knowledge of infection, spread, control, and effect was sought from HIV-positive respondents using a structured questionnaire. Information about their attitude and beliefs was also obtained. Collected data were analyzed using the Statistical Package for Social Sciences for Windows, Version 21.0. **Results:** A total of 70 HIV-positive patients, including 23 (32.9%) males and 47 (67.1%) females with a mean age of 37.7 years were participated. The overall knowledge on HIV transmission, clinical effects, complications, and controls was good in 15.7%, average in 72.9%, and poor in 11.4%. Knowledge of means of transmission was appropriate in majority of them. Majority of 66 (94.3%) patients showed a positive attitude to life. **Conclusion:** Most of the HIV-positive patients had average knowledge on HIV, and majority had a positive attitude to life.

Keywords: Human immunodeficiency virus infection, human immunodeficiency virus transmission, knowledge of human immunodeficiency virus

INTRODUCTION

Recently, the United Nations Programme on human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) reported that approximately 36.7 million people are living with HIV/AIDS worldwide with over 25 million of them in sub-Saharan Africa.¹ This shows that sub-Saharan Africa bears the greatest burden of HIV/AIDS accounting for over 68% of the global burden, and thus, making control of HIV in sub-Saharan Africa a global concern. Worldwide, there remains a trend toward increased prevalence of HIV due to improved care and decrease in HIV-related deaths, and therefore, HIV can be described as a chronic disease.² In addition to this, Nigeria ranks third among the sub-Saharan African countries with the largest number of new infections.³

Often times, new HIV infections occur through sexual contact, and this transmission occurs mostly from persons unaware of their HIV-positive status, because PLWHA who are mindful of their HIV status are more likely to embrace behavioral changes, and hence, practice safe sex to reduce the odds of transmission of HIV.⁴ Because self-knowledge of HIV has been shown to reduce the high-risk sexual behavior, and

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ultimately, the transmission of HIV⁵ to curb the trend toward the increasing incidence of HIV, interventions that promote adequate knowledge of HIV/AIDS, and its spread including mode of transmission and knowledge of vulnerable group is necessary.⁶ Other factors that can help to reduce the risk and incidence, which include practice of safe sex, decreasing levels of sexually transmitted diseases, and stigma and discrimination against persons living with HIV/AIDS (PLWHA).^{4,5}

Given the high prevalence of HIV in Nigeria, measures that can prevent the spread such as preventive campaigns should be strengthened or reinforced. More research on the knowledge and attitude of PLWHA to HIV as a useful tool in preventive campaigns may be useful to inform planning of effective patient-centered HIV prevention programs. Therefore, we sought to determine the level of knowledge of HIV and its mode of spread among PLWHA in addition to their attitudes and beliefs.

METHODOLOGY

Study design and area

This was a hospital-based cross-sectional study, carried out at the Antiretroviral Therapy (ART) Clinic of Chukwuemeka Odumegwu Ojukwu University Teaching Hospital (COOUTH) (formerly, Anambra State University Teaching Hospital), Awka, Southeast Nigeria. COOUTH is a tertiary health institution owned by the Anambra State Government. The ART clinic is one of the specialist clinics in COOUTH and it provides care to HIV-positive patients. Whereas the management of HIV/AIDS is multidisciplinary, the ART clinic is domicile in the Community Medicine Department of COOUTH. The clinic is open to clients 3 days in a week and offers the full range of ART services including (but not limited to) counseling, laboratory tests, nursing care, pharmaceutical services (including free antiretroviral drugs), and specialist doctors' consultation.

Study population

The study population was HIV-positive clients who access care at the COOUTH ART clinic. The clinic receives about three new HIV-positive clients in a week.

Inclusion criteria

All HIV-positive clients accessing care at the clinic who were 18 years and above, ambulant and gave their consent.

Exclusion criteria

All HIV-positive clients who were very sick/bedridden or refused to give consent.

Study design

This was a cross-sectional descriptive study.

Determination of sample size

The sample size was calculated using the formula for the sample size for opinion surveys.⁷

$$n = z^2pq/d^2$$

Where,

n = minimum sample size

z = standard normal deviate = 1.96

d = degree of accuracy desired = 0.05

p = prevalence from a previous study. In this case, $P = 0.96$ which is the proportion of respondents that have good knowledge of HIV according to a previous study.⁸

q = 1-p = 0.04

Therefore,

$$n = 1.96^2 \times 0.96 \times 0.04/0.05^2$$

$$n = 58.4$$

Assuming 10% attrition:

$$10/100 \times 58.4 = 5.84$$

58.4 + 5.84 = 64.24 which is approximately 64 for minimum sample size of respondents.

This was made up to 70 such that 70 respondents participated in the study.

Sampling technique

Sampling was done using a systematic random sampling method.

Data collection and interpretation

Data were collected using a semi-structured questionnaire. The questionnaire was self-administered for the educated respondents, but interviewer-administered for the uneducated respondents.

Scoring

The total score was 20 points. Less than 50% of the points indicate poor knowledge, 50%–60% of the score is average knowledge, whereas >60% of the score is good knowledge. In summary, we grouped knowledge below 50% as inappropriate and 50% and above as appropriate.

Data analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS) for Windows, Version 21.0, Chicago, Illinois USA. Frequency tables were used to show the demographic characteristics of the respondents. Chi-square test was used to determine the association between the sociodemographic characteristics and the knowledge of the respondents regarding HIV. The association between their sociodemographic characteristics and their attitude regarding HIV was also determined using Chi-square test. $P \leq 0.05$ was considered statistically significant. Results were presented in tables.

Ethical consideration

Ethical approval was obtained from the Ethical Committee of COOUTH. The objectives and procedure of the study were well explained to the clients. Only clients, who gave their consent after understanding the study protocol, were

participated in the study. The confidentiality of data provided was insured – clients' names were not taken, and other demographic data were de-identified.

RESULTS

A total of 70 HIV-positive patients comprising 23 (32.9%) males and 47 (67.1%) females participated in the study. Their ages range from 19 to 62 years with a mean of 37.7 years. The peak age range of participants was 30–39 years. Majority (91.4%) are Ibos, 65 (92.9%) had at least primary education, as shown in Table 1. Sixteen (22.9%) are singles, 7 (10.0%) are separated or divorced, and 14 (20.0%) are widowed. Forty-one (60.3%) were self-employed, 66 (94.3%) were Christians, and 50 (71.5%) have been diagnosed for over a year.

The overall knowledge on HIV transmission, clinical effects, complications, and controls was good in 11 (15.7%), average in 51 (72.9), and poor in 8 (11.4%). Knowledge of means of transmission including sharing of sharps, unprotected sex, multiple sexual relationships, and blood transfusion was appropriate in 67 (95.7%), 68 (97.1%), 63 (90.0%), and 67 (95.7%), respectively. Forty-five (64.3%) had appropriate knowledge of transmission from mother to fetus, as shown in Table 2. Knowledge about the effect of HIV infection on the immune system, kidney, and the risk of associated secondary cancers was appropriate in 53 (75.7%), 22 (31.4), and 38 (54.3%), respectively. There was no significant association of the level of knowledge of the respondents with age, gender, marital status, level of education, and duration of illness, as shown in Table 3.

Sixty-six (94.3%) showed a positive attitude to life, and 4 (5.7%) had a negative attitude. There was no significant association of attitude with age, gender, marital status, level of education, and duration of illness [Tables 4 and 5].

DISCUSSION

The continuous increase in a number of people living with HIV/AIDS (PLWHA) represents a serious health and economic burden. The control of HIV infection depends on the prevention of new infections as well as treating currently infected individuals. Therefore, adequate knowledge of HIV infection among PLWHA may be an important tool in reducing spread of the virus.

The majority of participants fall within the age range of 30–39 years which appear surprising, because it is expected that the younger age groups should have a higher risk of HIV infection probably due to peer pressure and juvenile delinquency, though not absolute.⁹ A similar age group was found in a study in Northwest Ethiopia.¹⁰ The females were more than the males (61.7%). This is similar to findings made by other groups of researchers in a similar study done in Northern Nigeria and elsewhere.^{1,11} According to the World Health Organization, about 60% of women are infected by HIV in sub-Saharan Africa,¹² supporting a previous report.¹³ Women in sub-Saharan Africa bear a disproportionate burden of HIV

Table 1: Demographics of study participants

Demographics	Total
Age	
<20	1 (1.5)
20-29	15 (22.7)
30-39	23 (34.8)
40-49	15 (22.7)
50-59	11 (16.7)
≥70	1 (1.5)
Sex	
Male	23 (32.9)
Female	47 (67.1)
Tribe	
Ibo	64 (91.4)
Hausa	2 (2.9)
Others	4 (5.7)
Educational status	
No formal	5 (7.1)
Primary	23 (32.9)
Secondary	26 (37.1)
Tertiary	14 (20.0)
Postgraduate	2 (2.9)
Marital status	
Single	16 (22.9)
Married	33 (47.1)
Separated/Divorced	7 (10.0)
Widowed	14 (20.0)
Employment status	
Students	10 (14.7)
Self employed	41 (60.3)
Civil/public servants	7 (10.0)
Unemployed	10 (14.7)
Religion	
Christian	66 (94.3)
ATR	3 (4.3)
Others	1 (1.4)
DOI	
<6 months	10 (14.3)
6-12 months	10 (14.3)
1-5 yrs	20 (28.6)
5-10 yrs	30 (42.9)

infections, which are exacerbated by their role in society and biological vulnerability.¹⁴

Most (92.9%) of our respondents had a formal education of at least primary education. This might have positively influenced their knowledge of the HIV infection because a good number (72.9%) of the respondents had an average knowledge of the subject matter. It is expected that literacy level of individuals may positively affect an individual's ability to take decisions on several issues probably because of a higher cerebral function. Contrary to our findings, Afolabi *et al.*¹⁵ reported that over 30% of their respondents had no formal education. This may be due to environmental, racial, and socioeconomic variations. It might be beneficial to compare these two populations.

Table 2: Knowledge of HIV among participants

Knowledge	Appropriate	Inappropriate	IDK	NR
1 HIV can be spread via mosquito bites	43 (61.4)	14 (20.0)	13 (18.6)	
2 HIV can be gotten as toilet infection	48 (68.6)	14 (20.0)	7 (10.0)	1 (1.4)
3 HIV can be contracted by hugging and shaking infected people	65 (92.9)	1 (1.4)	4 (5.7)	
4 HIV can be got through sharing of sharp objects	67 (95.7)		3 (4.3)	
5 HIV can be got from practising unprotected sex	68 (97.1)		2 (2.9)	
6 The risk of HIV infection is increased by having multiple sexual partners	63 (90.0)		5 (7.1)	2 (2.9)
7 A Pregnant woman with HIV will always infect her unborn child with HIV infection	45 (64.3)	17 (24.3)	8 (11.4)	
8 HIV can be got from transfusing HIV infected blood	67 (95.7)	1 (1.4)	1 (1.4)	1 (1.4)
9 Eating balanced diet can prevent HIV infection	43 (61.4)	18 (25.7)	8 (11.4)	1 (1.4)
10 Good personal and environmental hygiene can help avoid HIV infection	36 (51.4)	30 (42.9)	4 (5.7)	
11 Washing private part after sex can help prevent HIV infection	48 (68.6)	15 (21.4)	6 (8.6)	1 (1.4)
12 Use of condom reduces risk of getting HIV infection	63 (90.0)	4 (5.7)	3 (4.3)	
13 HIV can be got by donating blood	23 (32.9)	39 (55.7)	4 (5.7)	4 (5.7)
14 Prayers can cure HIV infection	23 (32.9)	37 (52.9)	10 (14.3)	
15 HIV is an airborne disease	60 (85.7)	1 (1.4)	8 (11.4)	1 (1.4)
16 HIV infection destroys the immune system	53 (75.7)	2 (2.9)	13 (18.6)	2 (2.9)
17 People with HIV infection are always sick	46 (65.7)	18 (25.7)	6 (8.6)	
18 Someone with HIV infection can get re infected with another strain of the virus if he/she engages in unprotected sex	50 (71.4)	6 (8.6)	11 (15.7)	3 (4.3)
19 HIV infection can lead to kidney failure	22 (31.4)	22 (31.4)	26 (37.1)	
20 HIV infection can cause cancer	38 (54.3)	7 (10.0)	25 (35.7)	

Table 3: Association of knowledge with demographics

	Good	Average	Poor	Total	Chi sq	P
Age						
<20	1 (2.1)	0 (0.0)	0 (0.0)	1 (1.5)	6.472	0.774
20-29	10 (20.8)	4 (40.0)	1 (12.5)	15 (22.7)		
30-39	19 (39.6)	2 (20.0)	2 (25.0)	23 (34.8)		
40-49	10 (20.8)	3 (30.0)	2 (25.0)	15 (22.7)		
50-59	7 (14.6)	1 (10.0)	3 (37.5)	11 (16.7)		
≥70	1 (2.1)	0 (0.0)	0 (0.0)	1 (1.5)		
Sex						
Male	17 (33.3)	2 (18.2)	4 (50.0)	23 (32.9)	2.145	0.342
Female	34 (66.7)	9 (81.8)	4 (50.0)	47 (67.1)		
Tribe						
Ibo	47 (92.2)	9 (81.8)	8 (100.0)	64 (91.4)	4.660	0.324
Hausa	2 (3.9)	0 (0.0)	0 (0.0)	2 (2.9)		
Others	29 (3.9)	2 (18.2)	0 (0.0)	4 (5.7)		
Educational status						
No formal	3 (5.9)	1 (9.1)	1 (12.5)	5 (7.1)	5.222	0.734
Primary	14 (27.5)	5 (45.5)	4 (50.0)	23 (32.9)		
Secondary	20 (39.2)	3 (27.3)	3 (37.5)	26 (37.1)		
Tertiary	12 (23.5)	2 (18.2)	0 (0.0)	14 (20.0)		
Postgraduate	2 (3.9)	0 (0.0)	0 (0.0)	2 (2.9)		
Marital status						
Single	13 (25.5)	2 (18.2)	1 (12.5)	16 (22.9)	2.748	0.840
Married	23 (45.1)	5 (45.5)	5 (62.5)	33 (47.1)		
Separated/Divorced	5 (9.8)	2 (18.2)	0 (0.0)	7 (10.0)		
Widowed	10 (19.6)	2 (18.2)	2 (25.0)	14 (20.0)		
Employment status						
Students	8 (16.0)	1 (9.1)	1 (14.3)	10 (14.7)	3.714	0.715
Self employed	29 (58.7)	6 (54.5)	6 (85.7)	41 (60.3)		
Civil/public servants	5 (10.0)	2 (18.2)	0 (0.0)	7 (10.0)		
Unemployed	8 (16.0)	2 (18.2)	0 (0.0)	10 (14.7)		

Contd...

Table 3: Contd...

	Good	Average	Poor	Total	Chi sq	P
Religion						
Christian	48 (94.1)	10 (90.9)	8 (100.0)	66 (94.3)	1.365	0.850
ATR	2 (3.9)	1 (9.1)	0 (0.0)	3 (4.3)		
Others	1 (2.0)	0 (0.0)	0 (0.0)	1 (1.4)		
DOI						
<6 months	8 (15.7)	2 (18.2)	0 (0.0)	10 (14.3)	5.379	0.496
6-12 months	7 (13.7)	1 (9.1)	2 (25.0)	10 (14.3)		
1-5 yrs	14 (27.5)	5 (45.5)	1 (12.5)	20 (28.6)		
5-10 yrs	22 (43.1)	3 (27.3)	5 (62.5)	30 (42.9)		

Table 4: Attitude of subjects towards HIV

Attitude	Positive	Negative	NR
I believe that prayers can heal me even without taking my drugs	44 (62.9)	25 (35.7)	1 (1.4)
I take my drugs as advised by my doctor	67 (95.7)	3 (4.3)	-
I am ashamed of my status	51 (72.9)	18 (25.7)	1 (1.4)
Spreading the infection to other people is good for revenge	66 (94.3)	4 (5.7)	-
HIV infection is a death sentence	62 (88.6)	8 (11.4)	-
I feel scared, depressed and alone	54 (77.1)	16 (22.9)	-
I believe I can live long if I take my drugs properly	68 (97.1)	2 (2.9)	-

Generally speaking, the respondents were satisfactorily knowledgeable on HIV transmission, clinical effects, complications, and controls. This may be expected, considering the fact that the hospital is located in an urban area, where study participants were most likely exposed to HIV/AIDS campaigns being carried out in the state and of course, an advantage of their good educational status. It is important to note too that majority of the respondents were aware of HIV reinfection following unprotected sex. The implication of this is that, with their knowledge of spread of HIV, they may be able to help reduce transmission of the virus, especially the resistant strains through safe practices. Ajayi *et al.*¹¹ recorded good knowledge among their respondents, but Menberu and Kalkay¹⁰ reported poor knowledge among their respondents. This could negatively impact on their attitude toward the disease.

We found no significant association of the level of knowledge of the respondents with age, gender, marital status, level of education, and duration of illness. This could be explained partly by the fact that most of our respondents were literate, but no justifiable reasons for other sociodemographic variables. An explanation could be from our sample size, which is small and may have not been able to test for the association between these outcomes variables. Our findings are consistent with that of Menberu and Kalkay, who equally found no association between the extent of knowledge and sociodemographic variables¹⁰ contrary; however, to a related study, which found a statistically significant association between knowledge of

Table 5: Association of attitude with demographics of subjects

	Positive	Negative	Total	Chi sq	P
Age					
<20	1 (1.6)	0 (0.0)	1 (1.5)	1.139	0.951
20-29	14 (22.6)	1 (25.0)	15 (22.7)		
30-39	21 (33.9)	2 (50.0)	23 (34.8)		
40-49	14 (22.6)	1 (25.0)	15 (22.7)		
50-59	11 (17.7)	0 (0.0)	11 (16.7)		
≥70	1 (1.6)	0 (0.0)	1 (1.5)		
Sex					
Male	22 (33.3)	1 (25.0)	23 (32.9)	0.119	0.730
Female	44 (66.7)	3 (75.0)	47 (67.1)		
Tribe					
Ibo	61 (92.4)	3 (75.0)	64 (91.4)	3.008	0.222
Hausa	2 (3.0)	0 (0.0)	2 (2.9)		
Others	3 (4.5)	1 (25.0)	4 (5.7)		
Educational status					
No formal	5 (7.6)	0 (0.0)	5 (7.1)	7.179	0.127
Primary	23 (34.8)	0 (0.0)	23 (32.9)		
Secondary	22 (33.3)	4 (100.0)	26 (37.1)		
Tertiary	14 (21.2)	0 (0.0)	14 (20.0)		
Postgraduate	2 (3.0)	0 (0.0)	2 (2.9)		
Marital status					
Single	16 (24.2)	0 (0.0)	16 (22.9)	4.757	0.191
Married	29 (43.9)	4 (100.0)	33 (47.1)		
Separated/Divorced	7 (10.6)	0 (0.0)	7 (10.0)		
Widowed	14 (21.2)	0 (0.0)	14 (20.0)		
Employment status					
Students	9 (13.8)	1 (33.3)	10 (14.7)	1.546	0.672
Self employed	39 (60.0)	2 (66.7)	41 (60.3)		
Civil/public servants	7 (10.8)	0 (0.0)	7 (10.3)		
Unemployed	10 (15.4)	0 (0.0)	10 (14.7)		
Religion					
Christian	62 (93.9)	4 (100.0)	66 (94.3)	0.257	0.879
ATR	3 (4.5)	0 (0.0)	3 (4.3)		
Others	1 (1.5)	0 (0.0)	1 (1.4)		
DOI					
<6 months	9 (13.6)	1 (25.0)	10 (14.3)		
6-12 months	9 (13.6)	1 (25.0)	10 (14.3)	1.016	0.797
1-5 yrs	19 (28.8)	1 (25.0)	20 (28.6)		
5-10 yrs	29 (43.9)	1 (25.0)	30 (42.9)		

antiretroviral drugs, marital status, and educational level.⁶ Most of our patients (94.3%) had a positive attitude to life. Most of them do not have superstitious beliefs too, and were also not ashamed of their status, which makes this a very valuable resource for patient-based campaigns against HIV/AIDS. Our findings are different from that carried out in a Kenyan Hospital.¹ The findings on positive attitude are also similar to that observed by Afolabi *et al.*¹⁵

CONCLUSION

Even though it might have been limited by sample size, this study found sufficient knowledge and a very positive attitude among PLWHA. It is noteworthy that many of them were not ashamed of their status. This information may be useful in creating policies and campaigns against HIV/AIDS that may be useful in the control of spread of the virus.

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Conflicts of interest

There are no conflicts of interest.

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