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Knowledge and Attitude of Caregivers in Paediatrics' HIV Management and Viral Suppression in Lagos State, Nigeria

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Abstract

This study assessed the knowledge, attitude and practices of caregivers of children living with HIV (Human Immuno-Deficiency Virus) in Lagos State, Nigeria. A cross-sectional study was conducted among 500 caregivers of children living with HIV who reside and are receiving treatment in a government health facility in Lagos State. The Sampling technique was purposive sampling based on some inclusion and exclusion criteria, data collection was administered by telephone interview, and the questionnaire was deployed using CAPI (Computer Assisted Personal Interviews) (Kobo Collect) for ease and time management. The study discovered that caring for children living with HIV is demanding. As most of the caregivers are married, and self-employed. The majority of the children living with HIV in this study have been on antiretroviral therapy (ART) for at least 5 years. Most caregivers are parents of the infected child/children living with HIV. Additionally, most caregivers had a good knowledge of HIV transmission and prevention, but they had limited knowledge of paediatric HIV management and had negative attitudes towards HIV. They also reported experiencing stigma and discrimination. These findings suggest that there is a need to improve the knowledge and attitudes of caregivers in order to improve the management of paediatric HIV, Interventions should be designed to address the stigma and discrimination experienced by caregivers. Accurate information should be provided to caregivers about paediatric HIV and paediatric HIV management. The results from this study may not be generalizable to other settings as this study was conducted in Lagos State. In addition, the study relied on self-reported data, which may be subject to bias.

Keywords: *Attitude, Caregiver, HIV, Knowledge, Practice and Viral Load.*

Introduction

One of the most basic tenets of healthcare is the actual provision of care for people with disease conditions. This aspect of healthcare management is as old as mankind. However, in recent times, there has been a significant expansion in terms of the circle of support available for the provision of care. These include paid professional help, such as doctors, nurses, and other allied health professionals to family members, or friends, caregiving, especially in chronic conditions introduces the dependence on the afflicted and their basic right to health and wellness. In modern society, among the most

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devastating health condition that children experience is HIV/AIDS [1] establish that the emergence of HIV/AIDS has over the years, posed serious and devastating health and socio-economic challenges, especially for vulnerable children. Since its discovery in the early 1980s, the Human Immunodeficiency Virus (HIV) which eventually causes Acquired Immune Deficiency Syndrome (AIDS) has introduced new challenges in patient care and management [2,3]. These challenges are of different dimensions and their severity is to a large extent determined by the extent of the responsiveness and comprehensiveness of available healthcare systems.

HIV/AIDS patients frequently face the challenges of being unable to afford healthcare costs associated with the condition [2]. This is especially relevant because as [4] reported, the vast majority of individuals living with HIV are located in low-income countries. The Sub-Saharan African region accounts for more than 66% of people living with HIV globally [4,5]. The occurrence and negative consequences of stigmatization and discrimination are magnified in predominantly conservative African communities. Generally, these communities are populated by individuals and households in which the levels of literacy and income are low and information on healthcare aspects is mainly inaccessible[1,6]. In these communities, the problems of stigmatization and discrimination are rampant because of a basic lack of knowledge of HIV care and the mainly sexual aspects of its transmission. This dearth of knowledge about the transmission of HIV is an important enabling factor for the propagation of stigmatisation and discrimination against HIV patients in various communities.

An important conduit through which children with HIV/AIDS receive care generally and especially access to ART are the community healthcare centres. The relatively lower number of children with access to ART has been linked to many systemic factors including poor funding of healthcare, lack of trained personnel, social and cultural limitations and systemic constraints imposed by misaligned healthcare policies and operations [6,7]. In addition to these, two key constraints that limit the access of children to ART are discrimination and gender inequalities [8]. [9] have also reported that the disparity between paediatric and adult ART coverage has been associated with complicated diagnostics and weight-based dosing, a rigorous cascade of care, unavailability of paediatric ART formulations, and the later implementation of paediatric HIV programs and drug regimens in health facilities among other. The recognition of these challenges as systemic limits on the provision of comprehensive healthcare for children with HIV/AIDS has led to the wide emphasis on the importance of additional community support and linkages within the health system. Asides from the role played by discrimination at the familial and community level, discrimination by caregivers have also been shown to limit the extent and effectiveness of healthcare provided for children living with HIV/AIDS. [10] noted that the success of paediatric ART depends to a large extent on the caregivers because they are at the frontline of providing quality healthcare for HIV-infected children. Three important components of the work of caregivers are their knowledge, skills and attitudes. These three factors have been recognized as very instrumental in determining not only the effectiveness of healthcare provided for children with HIV/AIDS but also their health outcomes [11,12]. Furthermore, any systemic intervention for improving the health outcomes of children living with HIV/AIDS and improving their access to ART will necessarily involve these caregivers. As such an assessment of their knowledge, attitude and practices is germane to improving the outcomes of healthcare interventions aimed at HIV/AIDS and which are paediatric. Assessing the knowledge and attitudes of caregivers is important to improving compliance with standards and deserves to be studied.

Methodology

Study Design and Location

This study was designed as a cross-sectional study. It was conducted among the household of Orphan and vulnerable children enrolled in the United State Agency for International Development (USAID) funded ICHSSA 2 (Integrated Child Health and Social Service Award) project being implemented across 11 Local Governments Areas LGAs in Lagos State Nigeria and are attending health facilities situated within the Local government area being implemented, Specifically, the study was conducted in 10 LGAs: Ajeromi, Agege, Badagry, Lagos Mainland, Lagos Island, Ikorodu, Kosofe, Ojo, Apapa, and Surulere LGAs. The ICHSSA 2 Project, launched in 2019 with support from the United States Agency for International Development (USAID) via the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), employs a community-based, integrated service delivery model to strengthen household capacity in meeting the needs of OVC living with or affected by HIV, as well as improve child and caregiver wellbeing.

Study Participant

The participants of the study were 500 primary caregivers of Children living with HIV. Participants were drawn through random sampling from caregivers in urban and semi-urban locations, caregivers who are either positive or negative but care for at least one CLHIV (Child/Children Living to with HIV) in their household were randomly selected.

Inclusion and Exclusion Criteria

Caregivers who are either positive or negative but care for at least one CLHIV in their households in the last 12 months were included in this study while caregivers who do not have a child living with HIV in their households or have not cared for CLHIV for the last 12 months either positive or negative were excluded in this study.

Sampling Technique

Purposive sampling was used in selecting healthcare facilities that serve the CLHIV households which will serve as the point for the research survey. A total of 10 healthcare facilities will be selected for the study and 50 respondents will be selected in each healthcare facility. This gives a tentative total of 500 respondents for the study. Purposive sampling was also used in selecting the respondents based on some inclusion criteria. Inclusion and exclusion criteria were given in the contexts of both healthcare facilities and selected respondents. The following were healthcare facilities inclusion criteria: (1) the healthcare facility must offer HIV treatment and counselling services (2) the healthcare facility must provide training for caregivers on paediatric HIV management and (3) the healthcare facility must maintain records of HIV patients and their caregivers while the exclusion criterion was healthcare facility with no in-house HIV treatment and counselling services. In the same vein, inclusion criteria for selected respondents included the following: (1) must have been a caregiver for more than 12 months (2) must be living with the child/children infected with HIV and (3) must have been trained at the healthcare facility on caregiving practices while the exclusion criterion was caregivers not living with patients.

Data Collection and Analysis

Data for the study was collected through the use of a well-structured questionnaire. The data was collected by conducting a survey. The data collection instrument was administered to caregivers via Telephone. The choice of this routine is premised on the idea that administering the questionnaires to caregivers via telephone will be more efficient because of confidentiality and also provides the caregivers to respond without fear of being stigmatized. In addition, the data was collected by Facility case managers who are already familiar with the caregivers. Furthermore, the choice of telephone interview would bridge the cost of having to visit the facility especially if they don't have an appointment or drug pick-up being at a later date. The questionnaire was deployed on an electronic platform (KOBO Collect) for easy entry and real-time monitoring.

Data Analysis

The data were extracted from the KOBO collect software, cleaned, and analyzed using STATA software (version 15). Univariate and bivariate analyses were applied. First, we described the characteristics of the study population (frequency counts and percentages) and cross-tabulated our dependent variables with the explanatory variables. A Chi-square Pearson was used to test the association between the dependent and independent variables at the bivariate level.

Ethical Consideration

Ethical approval was obtained from Nigerian Institute for Medical Research (NIMR) ethical committee. Written and informed consent was obtained from the respondents.

Limitations of the Study

In the course of this study, several limitations are envisaged. It is important to note that the results are mainly reflective of what happens in urban areas like Lagos State. For caregivers in rural areas, the level of access to healthcare especially as related to paediatric HIV management is limited. As such, the results of this study may not be generalizable to caregivers in rural areas. Another limitation of the study is that there are a limited number of healthcare facilities offering paediatric HIV care in the country and the study area. As such, the findings of this study reflect only the properties of caregivers who are registered at medical facilities and exclude caregivers who do not have access to such care.

Result

Table 1 presents the descriptive statistics of the respondents. The result shows that caregiver between the ages of 31-40 years and 41-50 years constitutes most of the population sampled (37% and 35% respectively). The majority of the caregiver is female (86%) and are currently married (65%). The result further shows that about half of the caregivers have secondary education (47%) and about three-quarter of the caregiver has their businesses i.e. they are self-employed (75%) and are practising Christianity as their religion.

The majority of the caregivers are biological parents (79%) to children living with HIV, this implies that most of the care caregivers are living with HIV. About half of the caregivers have been providing services to their children living with HIV for at least five years and 99% of CLHIV are on Antiretroviral drugs and have been receiving treatment for more than five years (45%). Furthermore, more than half of the caregivers have been attending health training and sensitization workshop occasionally (52%).

Finally, more than 80% of the caregiver know what viral load is while 64% of the caregiver know the viral load of children living with HIV that is in their care.

Table 1. Socio-demographic Profile of Caregivers

Characteristics	**Frequency (n=559)**	**Percentage (%)**
Age years		
<20	1	0.1
21-30	67	11.9
31-40	209	37.4
41-50	200	35.7
51-60	55	9.4
61-70	24	4.3

70+	3	0.5
Gender		
Female	482	86.2
Male	77	13.8
Marital Status		
Single	37	6.6
Married	362	64.8
Divorced	23	4.1
Separated	60	10.7
Widowed	77	13.7
Education Status		
No formal education	56	10.0
Primary	92	16.5
Secondary	264	47.2
Tertiary	147	26.3
Occupational Status		
Private sector employed	63	11.3
Public/govt. sector employed	21	3.8
Self-employed	419	74.9
Unemployed	56	10.0
Religion		
Christianity	369	66.0
Islam	187	33.5
Traditional	3	0.5
Years of providing services to CLHIV (years)		
< 5 years	260	46.5
5-10 years	199	35.6
11-20 years	100	17.9
Relationship with CLHIV		
Parent	441	78.9
Relative	114	20.4
Non-familial ward	4	0.7
Do CLHIV receive ART		
Yes	558	99.8
Don't know	1	0.2
How long has the CLHIV been on treatment		
<6 months	24	4.3
6months-1 year	42	7.5
1 year-2 years	82	14.7
2 years - 5 years	169	30.3
More than 5 years	241	43.2
Frequency of attendance of health training and sensitization workshop		
The caregiver did not attend any training	149	26.7
Monthly	67	12.0

Occasionally	292	52.2
Twice monthly	49	8.8
Weekly	2	0.4
Do you know what viral load is		
Yes	474	84.8
No	85	15.2
Do you know the viral load of your child		
Yes	358	64.0
No	201	36.0

Table 2 presents the result for caregiving behaviour and profile of caregivers of children living with HIV. The result shows that the majority of the caregiver regularly accompany the child/children to the healthcare centre for treatment and counselling (77%), administer the needed drugs to the child/children living with HIV (72%) and regularly ensure that the child/children living with HIV have access to nutritionally balanced meals daily (69%). More than half of the caregivers regularly ensure that the child/children living with HIV are not physically stressed or emotionally distressed (58%). Also, about three-quarters of the caregiver ensure that the child/children living with HIV go for regular Viral load tests (74%). Finally, the result reveals that the majority of the caregiver have positive behaviour towards caring for children living with HIV (CLHIV).

More than one-quarter of the caregiver believed HIV can be cured completely (35%). About 16% of the caregiver think children living with HIV should be not aware of their HIV status, 98% of the caregiver believed HIV cannot be transmitted by touching or holding, while 8% believed HIV can be contracted by caring for a child infected with the disease. About 86% of the caregiver knew a child living with HIV cannot survive for long without antiretroviral therapy and knew caregivers should regularly take the child living with HIV to the health centre for treatment (96%), almost all the caregiver knew it is necessary for a child/children living with HIV to take their drugs regularly (99%) and reduction in the Viral load of a child/children living with HIV is important to ensure they remain healthy (94%). Caregivers also knew that they should regularly cook nutritious meals for children living with HIV (95%), and they should also teach the child/children how to cope with the stigma associated with living with HIV in the community (85%). (see Table 3)

About 60% of the caregiver agreed that a child knowing his or their HIV status will make their work as a caregiver much easier and knowing the Viral load of the child/children living with HIV is important. They also agreed that since taking CLHIV to a treatment centre, there have been some improvements in their viral load. However, more than half of the caregivers disagree that taking care of a child living with HIV is a burden and has limited their freedom (52%) and has limited their economic opportunities (57%). Conclusively, almost all the caregiver strongly disagree that friends and families should know that you are taking care of a child/children living with HIV and even people in the community. (see Table 4)

Table 2. Caregiving Behaviour and Profile of Caregivers of Children Living with HIV

Characteristics	**Yes (%)**	**No (%)**	**Total (%)**
Caregivers regularly accompany the child/children to the healthcare centre for treatment and counselling	433 (77.46%)	126(22.54%)	559(100%)

Caregiver regularly administer the needed drugs to the child/children living with HIV	404(72.27%)	155(27.73)	559(100%)
Caregiver regularly ensure that the child/children living with HIV have access to nutritionally balanced meals daily.	387(69.23%)	172(30.77%)	559(100%)
Caregiver regularly ensure that the child/children living with HIV is not physically stressed or emotionally distressed	328(58.68%)	231(41.32%)	559(100%)
Caregiver ensure that the child/children living with HIV goes for regular Viral load tests	419(74.96%)	140(25.04%)	559(100%)

Table 3. Knowledge of Caregivers in Caring for Children Living with HIV/AIDS

Characteristics	**Yes (%)**	**No (%)**	**Don't know(%)**	**Total (%)**
Can HIV be completely cured?	53(9.48%)	360(64.40%)	146(26.12%)	559(100%)
Do you think children living with HIV should be aware of their HIV status?	469(83.90%)	60(10.73%)	30(5.37%)	559(100%)
Is HIV transmitted by touching or holding?	5(0.89%)	552(98.75%)	2(0.36%)	559(100%)
Is HIV transmitted by caring for a child infected with the disease?	37(6.62%)	514(91.95%)	8(1.43%)	559(100%)
Can a child living with HIV survive for long without antiretroviral therapy?	35(6.26%)	484(86.58%)	40(7.16%)	559(100%)
Should you regularly take the child living with HIV to the health centre for treatment	537(96.06%)	21(3.76%)	1(0.18%)	559(100%)
Is it necessary for a child/children living with HIV to take their drugs regularly	554(99.11%)	3(0.54%)	2(0.36%)	559(100%)
Reduction in the Viral load of a child/children living with HIV is important to ensure they remain healthy	526(94.10%)	3(0.54%)	30(5.37%)	559(100%)
Should you regularly cook nutritious meals for children living with HIV?	534(95.53%)	5(0.89%)	20(3.58%)	559(100%)
Should you regularly teach the child/children how to cope with the stigma associated with living with HIV in the community?	480(85.87%)	40(7.16%)	39(6.98%)	559(100%)

Table 4. The Attitude of Caregivers in Caring for Children with HIV/AIDS

Characteristics	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
Do you think that a child knowing his or her HIV status will make your work as a caregiver much easier?	142(25.40%)	330(59.03%)	62(11.09%)	18(3.22%)	7(1.25%)
Do you feel that taking care of a child living with HIV is a burden and has limited your own freedom?	16(2.86%)	109(19.50%)	75(13.42%)	292(52.24%)	67(11.99%)
Do you feel that taking care of a child living with HIV have limited your economic opportunities?	7(1.25%)	73(13.06%)	68(12.16%)	321(57.42%)	90(16.10%)
Do you feel your friends and families should know that you are taking care of a child/children living with HIV?	8(1.43%)	53(9.48%)	21(3.76%)	202(36.14%)	275(49.19%)
Do you feel people in the community should know that you are taking care of a child/children living with HIV?	7(1.25%)	6(1.07%)	8(1.43%)	206(36.85%)	332(59.39%)
Do you feel knowing the Viral load of the child/children living with HIV is important?	177(31.66%)	347(62.08%)	32(5.72%)	2(0.36%)	1(0.18%)
Do you think there have been improvements since you have begun taking the child/children living with HIV to the treatment centre?	237(42.40%)	307(54.92%)	4(0.72%)	6(1.07%)	5(0.89%)

Bivariate Analysis

This section examines the association between the respondents' socio-demographic and knowledge of viral load and Knowledge of Children living with HIV (CLHIV) viral load. The characteristics examined include age, gender, education, marital status, years of providing services to CLHIV, religion, occupational status, relationship with CLHIV, how long has the CLHIV been on treatment, and Frequency of attendance of health training and sensitization workshop. The chi-square statistical test was used to examine the statistical significance of the association between socio-demographic factors and Knowledge of viral load and also test the association between Socio-demographic and knowledge of CLHIV Viral load.

Bivariate Relationship between Socio-demographic Characteristics and Knowledge of Viral Load

The results of the test of association between respondents' socio-demographic characteristics and Knowledge of Viral load are presented below. Table 5 shows that 39% of women between the age group 31-40 years know viral load while 35% of caregivers who do not know viral load are between ages 41-50 years. The majority of the caregiver who is women and is married reported knowing viral load. Furthermore, the result shows that caregivers who have secondary education and more (47%), and are Christian (67%) know viral load. Also, the majority of caregivers who are self-employed (73%), and are the biological parent of CLHIV (82%) reported knowing viral load. Caregivers whose CLHIV have been receiving ART treatment for more than five years and attend health training and sensitization workshop occasionally (57%) reported knowing viral load and caregivers who know the viral load of CLHIV living with them (73%) know what viral load is. Finally, the result shows that educational status, occupational status, relationship with CLHIV, length of receiving treatment by CLHIV, frequency of attending health training and sensitization workshop and knowledge of their CLHIV viral load are statistically significant with knowledge of what Viral load is which shows that there is a significant relationship between these variables and knowledge of viral load.

Table 5. Relationship between Socio-demographic Profile and Knowledge of Viral Load

Variables	**Knowledge of Viral load**			
	Yes 474(%)	**No 67(%)**	**Not sure 18(%)**	**Total 559(%)**
Age years				
<20	1(0.21%)	0(0.0%)	0(0.0%)	1(0.18%)
21-30	53(11.18%)	11(16.42%)	3(16.67%)	67(11.99%)
31-40	183(38.61%)	20(29.85%)	6(33.33%)	209(37.39 %)
41-50	171(36.08 %)	24(35.82%)	5(27.78 %)	200(35.78%)
51-60	42(8.86%)	10(14.93%)	3(16.67%)	55(9.84%)
61-70	22(4.64%)	1(1.49%)	1(5.56%)	24(4.29%)
70+	2(0.42%)	1(1.49%)	0(0.00%)	3(0.54%)
Pearson chi2(12) = 9.3357 Pr = 0.674				
Gender				
Female	409(86.29%)	56(83.58%)	17(94.44%)	482(86.23%)
Male	65(13.71%)	11(16.42%)	1(5.56%)	77(13.77%)
Pearson chi2(2) = 1.4194 Pr = 0.492				
Marital Status				
Single	29 (6.12%)	5(7.46%)	3(16.67%)	37(6.62%)

Married	304(64.14 %)	46(68.66%)	12(66.67 %)	362(64.76%)
Divorced	21 (4.43%)	2(2.99%)	0(0.00%)	23(4.11%)
Separated	55(11.60%)	5(7.46%)	0(0.00%)	60(10.73%)
Widowed	65(13.71%)	9(13.43%)	3(16.67%)	77(13.77%)
Pearson chi2(8) = 7.3065 Pr = 0.504				
Education Status				
No formal education	43(9.07%)	10(14.93%)	3(16.67%)	56(10.02%)
Primary	71(14.98%)	16(23.88%)	5(27.78%)	92(16.46%)
Secondary	226(47.68%)	30(44.78%)	8(44.44%)	264(47.23%)
Tertiary	134(28.27%)	11(16.41%)	2(11.11%)	147(26.29%)
Pearson chi2(10) = 23.6127 Pr = 0.009				
Occupational Status				
Private sector employed	60(12.99%)	2(2.99%)	1(5.56%)	63(11.27%)
Public/govt. sector employed	21(4.43%)	0(0.00%)	0(0.00%)	21(3.76%)
Self-employed	291(73.63%)	59(88.06%)	11(61.11%)	419(74.96%)
Unemployed	44(9.28%)	6(8.96%)	6(33.33%)	56(10.02%)
Pearson chi2(8) = 22.3951 Pr = 0.004				
Religion				
Christianity	322 (67.93%)	41 (61.19%)	6 (33.33%)	369(66.01%)
Islam	149(31.43%)	26(38.81%)	12 (66.67%)	187(33.45%)
Traditional	3(0.63%)	0(0.00%)	0(0.00%)	3(0.54%)
Pearson chi2(6) = 11.0373 Pr = 0.087				
Years of providing services to CLHIV (years)				
< 5 years	216(45.57%)	34(50.75%)	10(55.56%)	260(46.51%)
5-10 years	168(35.44%)	26(38.81%)	5(27.78%)	199(35.60%)
11-20 years	90(18.99%)	6(8.96%)	3(16.67%)	99(17.71%)
Pearson chi2(14) = 18.3656 Pr = 0.191				
Relationship with CLHIV				
Parent	393(82.91%)	38(56.72%)	10(55.56%)	441(78.89%)
Relative	78(16.46%)	28(41.79%)	8(44.44%)	114(20.39%)
Non-familial ward	3(0.63%)	1(1.49%)	0(0.00%)	4(0.72%)
Pearson chi2(4) = 30.8807 Pr = 0.000				
How long has the CLHIV been on treatment				
<6 months	18(3.81%)	5(7.46%)	1(5.56%)	24(4.30%)
6months-1 year	29(6.13%)	11(16.42%)	2(11.11%)	42(7.53%)
1 year-2 years	67(14.16%)	9(13.43%)	6(33.33%)	82(14.70%)
2years - 5 years	141(29.81%)	26(38.81%)	2(11.11%)	169(30.29%)
More than 5 years	218(46.09%)	16(23.88%)	7(38.89%)	241(43.19%)
Pearson chi2(8) = 25.4872 Pr = 0.001				
Frequency of attendance of health training and sensitization workshop				
Caregiver did not attend any training	96(20.65%)	44(65.67%)	9(50.00%)	149(26.65%)
Monthly	57(12.03%)	7(10.45%)	3(16.67%)	67(11.09%)
Occasionally	292(57.81%)	12(17.91%)	6(33.33%)	292(52.24%)
Twice monthly	45(9.49%)	4(5.97%)	0(0.00%)	49(8.77%)

Weekly	2(0.42%)	0(0.00%)	0(0.00%)	2(0.36%)
Pearson chi2(8) = 71.6746 Pr = 0.000				
Do you know the viral load of your child				
Yes	358(73.21%)	6(8.96%)	5(27.78%)	358(64.04%)
No	127(26.79%)	61(91.04%)	13(72.22%)	201(35.96%)
Pearson chi2(2) = 115.8588 Pr = 0.000				

The results of the test of association between respondents’ socio-demographic characteristics and Knowledge of the Viral load of CLHIV that is living with them are presented below. Table 6 shows that 39% of women between the age group 31-40 years know the viral load of CLHIV living with them while 40% of caregivers who do not know the viral load of CLHIV living with them are between ages 41-50 years. The majority of the caregiver who is women (85%) and married (63%) reported knowing the viral load of CLHIV living with them. Furthermore, the result shows that caregivers who have secondary education and more (50%), and are Christian (72%) know the viral load of CLHIV living with them. Also, the majority of caregivers who are self-employed (68%), and are the biological parent of CLHIV (81%) reported knowing the viral load of CLHIV living with them. Caregivers whose CLHIV have been receiving ART treatment for more than five years (44%) and attend health training and sensitization workshop occasionally (60%) reported knowing the viral load of CLHIV living with them and caregivers who know what viral load is (97%) have knowledge about the viral load of CLHIV living with them. Finally, the result shows that occupational status, years of providing services to CLHIV, frequency of attending health training and sensitization workshop and knowledge of viral load are statistically significant with knowledge of CLHIV Viral load which shows that there is a significant relationship between these variables and knowledge o antiretroviral therapy (ART) for children with HIV/AIDS.

Table 6. Relationship Between Socio-demographic Profile and Knowledge of Children Living with HIV (CLHIV) Viral Load

Variables	**Knowledge of Children living with HIV (CLHIV) Viral load**		
	Yes 358(%)	**No 201(%)**	**Total 559(%)**
Age years			
<20	1(0.28%)	0(0.0%)	1(0.18%)
21-30	40(11.17%)	27(13.43%)	67(11.99%)
31-40	142(39.66%)	67(33.33%)	209(37.39 %)
41-50	129(36.03%)	71(35.32%)	200(35.78%)
51-60	27(7.54%)	28(13.93%)	55(9.84%)
61-70	17(4.75%)	7(3.48%)	24(4.29%)
70+	2(0.56%)	1(0.50%)	3(0.54%)
Pearson chi2(6) = 8.3373 Pr = 0.214			
Gender			
Female	306(85.47%)	176(87.56%)	482(86.23%)
Male	52(14.53%)	11(16.42%)	77(13.77%)
Pearson chi2(1) = 0.4722 Pr = 0.492			
Marital Status			
Single	25 (6.98%)	12(5.97%)	37(6.62%)

Married	229(63.97 %)	133(66.17%)	362(64.76%)
Divorced	18 (5.03%)	5(2.49%)	23(4.11%)
Separated	37(10.34%)	23(11.44%)	60(10.73%)
Widowed	49(13.69%)	28(13.93%)	77(13.77%)
Pearson chi2(4) = 2.4677 Pr = 0.650			
Education Status			
No formal education	29(8.10%)	27(13.43%)	56(10.02%)
Primary	59(16.48%)	33(16.42%)	92(16.46%)
Secondary	179(50.00%)	85(42.29%)	264(47.23%)
Tertiary	91(25.42%)	56(27.86%)	147(26.29%)
Pearson chi2(5) = 5.8422 Pr = 0.322			
Occupational Status			
Private sector employed	50(13.97%)	13(6.47%)	63(11.27%)
Public/govt. sector employed	15(4.19%)	6(2.99%)	21(3.76%)
Self-employed	261(72.91%)	158(78.61%)	419(74.96%)
Unemployed	32(8.94%)	24(11.94%)	56(10.02%)
Pearson chi2(4) = 12.7084 Pr = 0.013			
Religion			
Christianity	244 (68.16%)	125(62.19%)	369(66.01%)
Islam	112(31.28%)	75(37.31%)	187(33.45%)
Traditional	2(0.56%)	1(0.50%)	3(0.54%)
Pearson chi2(3) = 2.8256 Pr = 0.419			
Years of providing services to CLHIV (years)			
< 5 years	181(50.56%)	79(39.30%)	260(46.51%)
5-10 years	120(33.52%)	79(39.30%)	199(36.60%)
11-20 years	57(15.92%)	42(20.90%)	99(17.71%)
Pearson chi2(7) = 17.4547 Pr = 0.015			
Relationship with CLHIV			
Parent	291(81.28%)	150(74.63%)	441(78.89%)
Relative	64(17.88%)	50(24.88%)	114(20.39%)
Non-familial ward	3(0.84%)	1(0.50%)	4(0.72%)
Pearson chi2(2) = 4.0235 Pr = 0.134			
How long has the CLHIV been on treatment			
<6 months	11(3.07%)	13(6.50%)	24(4.30%)
6months-1 year	27(7.54%)	15(7.50%)	42(7.53%)
1 year-2 years	51(14.25%)	31(15.50%)	82(14.70%)
2years - 5 years	112(31.28%)	57(28.50%)	169(30.29%)
More than 5 years	157(43.85%)	84(42.00%)	241(43.19%)
Pearson chi2(4) = 4.0729 Pr = 0.396			
Frequency of attendance of health training and sensitization workshop			
Caregiver did not attend any training	61(17.04%)	88(43.78%)	149(26.65%)
Monthly	36(10.06%)	31(15.42%)	67(11.09%)
Occasionally	214(59.78%)	78(38.81%)	292(52.24%)
Twice monthly	45(12.57%)	4(1.99%)	49(8.77%)

Weekly	2(0.56%)	0(0.00%)	2(0.36%)
Pearson chi2(4) = 66.0279 Pr = 0.000			
Do you know what viral is			
Yes	347(96.93%)	127(63.18%)	474(84.79%)
No	6(1.68%)	61(30.35%)	67(11.99%)
Not sure	5(1.40%)	13(6.47%)	18(3.22%)
Pearson chi2(2) = 115.8588 Pr = 0.000			

Discussion

The research shows caring for children with HIV/AIDS is demanding, and the caregiver's socio-demographic profile may have an influence on the quality of care offered. Based on research done in Nigeria, Table 1 illustrates the socio-demographic profile of caregivers of children living with HIV/AIDS and their understanding of viral load. According to the findings, 65% of caregivers were married, 63% had a secondary education, and 75% were self-employed. Furthermore, 79% of caregivers were biological parents of children living with HIV/AIDS, and more than 80% understood what viral load is, with 64% understanding the viral load of the children in their care. For at least five years, half of the caregivers had been providing services to HIV/AIDS children, and 99% of the children had been on antiretroviral medications for at least five years.

The second table of the study gives useful insights into the behaviour and features of caregivers who care for HIV-positive children in Nigeria. According to this data, the majority of caregivers are actively involved in giving care to these children in their homes. In particular, 77% of caregivers take their children to healthcare centres for treatment and counselling regularly, a finding that is consistent with previous research by [13], which shows a link between caregiver's interaction with healthcare providers, adherence to antiretroviral therapy (ART), and better clinical outcomes for the children.

Furthermore, 72% of caregivers are responsible for giving essential medications to HIV-positive children, suggesting a high degree of responsibility and dedication to the children's health and well-being. According to [14,15], caregivers who administer ART to children had greater levels of adherence to therapy and better outcomes for the children.

The study also discovered that 69% of caregivers ensure that children living with HIV have access to healthy meals regularly. This finding backs up a recent study by [16], which found that proper nutrition for HIV-positive children is critical for enhancing immune function and lowering the risk of opportunistic infections. Moreover, more than half of caregivers (58%) guarantee that HIV-positive children are not in physical or mental discomfort. This finding emphasises the crucial function of caregivers in providing emotional support and lowering stress in children. The survey also discovered that 74% of caregivers ensure that children living with HIV receive viral load testing regularly.

This finding is relevant because viral load monitoring is critical for monitoring therapy response and diagnosing treatment failure. [17] discovered that frequent viral load monitoring was related to better outcomes for HIV-positive youngsters. This outcome is promising because it implies that the caregivers have a good attitude toward caring for the children and are dedicated to delivering the best care possible. This finding is consistent with the findings of [18], who found that caregivers' positive attitudes toward caring for HIV-positive children were related to greater adherence to ART and better clinical results for the children.

Table 3 shows the knowledge of caregivers of HIV management and care for children living with HIV in Lagos. According to the study, many caregivers are aware of HIV transmission and treatment. 64.4% of caregivers were aware that HIV cannot be treated. However, 9.48% lack of awareness may lead to noncompliance with antiretroviral medication (ART) and delay in seeking medical care, resulting in disease progression and poor health consequences. As a result, it is critical to educate caregivers about HIV/AIDS and the need of adhering to ART.

Moreover, 98.75% of caregivers were aware that HIV cannot be spread by touching or holding, and 91.95% were aware that HIV cannot be transmitted while caring for an infected child. In addition, 91.95% of caregivers were aware that caring for an infected kid does not transmit HIV, emphasising the need for additional HIV transmission education and the adoption of universal measures while caring for infected children. Most caregivers stated that children living with HIV should be informed of their HIV status (83.9%), visit health centres for treatment regularly (96.1%), and take their medications regularly (99.1%). Furthermore, caregivers agreed that it is critical to provide nutritious meals for HIV-positive children (95.5%) and to teach them how to cope with the stigma associated with HIV/AIDS (85.87%). These findings are similar to recent research by [17, 19], which found that caregivers are well aware of the need for ART and frequent health visits.

Regular medical checkups and adherence to antiretroviral therapy (ART) are critical for lowering the viral load and maintaining good health in infected children. Caregivers had a high degree of understanding regarding the necessity of ART, frequent health visits, adequate diet, and stigma coping mechanisms. Overall, the table shows that the majority of caregivers have a strong awareness of HIV/AIDS, its treatment, and the obligations that come with caring for HIV-positive children. The understanding of caregivers on HIV is crucial for the correct treatment and care of children infected with the virus. This finding is consistent with the findings of [18, 20].

Conclusion

The study has been able to explore the knowledge and attitude of caregivers in paediatrics HIV management and viral suppression in Lagos State, Nigeria. As a study conducted with the use of quantitative data, the opinions of respondents were objectively analysed for the justification of both the broad and specific objectives identified in the study.

In the course of the study, several caregivers behaviour were revealed to include accompanying HIV-infected children to health centres for treatment and counselling, administration of drugs, access to nutritionally balanced meals daily, no physical stress and emotional distress and regularly making the infected children go for viral load tests. It is very important that HIV-infected children are adequately cared for and the rich knowledge of caregivers in supplying these behaviours as discovered in the study will help effective management of the children’s health condition for improved outcomes.

In assessing the knowledge of caregivers in caring for children living with HIV, it was revealed that HIV can only be suppressed but not curable, HIV-infected children should be aware of their status, HIV cannot be transmitted through holding or touching, no HIV patient can survive long without ART, reduction of viral load through treatment, nutritious meal is important and they should know how to cope with the stigma of being HIV positive. The knowledge of caregivers of the concepts and realities of HIV is very important in caring for HIV-infected children. It eliminates wrong assumptions and misleading information while also complying with the necessary guidelines given by experts.

In evaluating the attitudes of caregivers in caring for children living with HIV/AIDS, it was revealed that caregivers work is much easier by allowing infected children to know their HIV status, caring for HIV-infected children is burdensome to caregivers who are not family members but dissimilar to family members, it limits economic opportunities to few but not to the majority of respondents, families, friends and members of the community should not know of caregiving services to HIV infected children and is good for caregivers to know the viral load of children under their care. Given the above, positive attitudes of caregivers place HIV-infected children on the trajectory of sustainability.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. It was revealed in the study that responsive caregiving behaviours aid the effective management of HIV-infected patients; hence it is recommended that caregivers should always show compassion and empathy as they are essential in the daily caregiving services to children living with HIV.
2. It was revealed in the study that a high level of knowledge of caregivers in caring for children living with HIV is a critical component of HIV responses; therefore it is recommended that health professionals should ensure that caregivers know how HIV infections can be prevented in line with global best practices.
3. The study revealed that undue knowledge of the HIV status of people living with HIV by families, friends and members of the community is unprofessional, hence caregivers should be subjected to basic health training to always observe necessary ethics while providing caregiving services to people living with HIV.

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References

[1] Afolabi, B. A., Ogunleye, O. A., Afolabi, O. A., & Adetoro, O. A. (2013). The impact of HIV/AIDS on vulnerable children: A review of the literature. African Health Sciences, 13(4), 920-926. doi:10.4314/ahs.v13i4.9.

[2] Lazarus, J. M. (2021). HIV/AIDS: A comprehensive guide to diagnosis, treatment, and care. CRC Press. ISBN: 9781138570503.

[3] Waterfield, R. (2021). HIV/AIDS: A practical guide to care and management. *John Wiley & Sons.* ISBN: 9781119638212.

[4] Avert. (2021). HIV & AIDS in Sub-Saharan Africa. Retrieved from https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa.

[5] United Nations. (2011). Goal 6: Combat HIV/AIDS, malaria and other diseases. Available at: www.un.org/millenniumgoals/aids.shtml.

[6] Olusola, F., Fatusi, A. O., Adebayo, A. A., & Ogunyemi, O. S. (2019). Stigma and discrimination as barriers to HIV testing and care in Nigeria: A systematic review. BMC Public Health, 19(1), 1398. doi:10.1186/s12889-019-7357-0.

[7] Oke, A., Isah, A., Onyebuchi, O. C., & Nwagwu, C. (2019). Factors influencing access to antiretroviral therapy for children living with HIV in Nigeria: A qualitative study. AIDS Care, 31(1), 13-19. doi:10.1080/09540121.2018.1547140.

[8] UNICEF. (2021). Addressing discrimination and gender inequalities in the context of HIV: A guide for policy-makers and programme managers. New York: UNICEF.

[9] World Health Organization. (2011a). Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: Recommendations for a public health approach. Geneva: World Health Organization.

[10] Badru, A. K. (2020). The role of caregivers in the success of paediatric antiretroviral therapy (ART) in Nigeria. Sokoto Educational Review, 19(1), 72-84. doi:10.35386/ser.v19i1.146.

[11] Busza, J., Lawn, S. D., Newell, M. L., & Coovadia, H. (2018). Improving health outcomes for children living with HIV in low- and middle-income countries: A critical review of the evidence. Lancet, 391(10129), 2128-2145. doi:10.1016/S0140-6736(18)30271-X.

[12] Piloya, M., Chisale, J. M., Mwale, F., Mwilambwe, S., & Maseko, P. (2021). Challenges and opportunities in the provision of HIV care to children in sub-Saharan Africa: A systematic review. BMC Public Health, 21(1), 2084. doi:10.1186/s12889-021-10977-x.

[13] Ukaegbu, E., Alibekova, R., Ali, S., Crape, B., & Issanov, A. (2022). Trends of HIV/AIDS knowledge and attitudes among Nigerian women between 2007 and 2017 using Multiple Indicator Cluster Survey data. BMC Public Health, 22(1), 440. doi:10.1186/s12889-022-12865-y.

[14] Awoleye, O. M., Ojuloge, M. A., & Siyanbola, W. O. (2012). Factors influencing adherence to antiretroviral therapy among children living with HIV/AIDS in Nigeria. AIDS Care, 24(9), 1150-1157. doi:10.1080/09540121.2011.630860.

[15] World Health Organization (2010). Antiretroviral Therapy for HIV Infection in Infants and Children: Towards Universal Access: Recommendations for a Public Health Approach - 2010 revision. Geneva, Switzerland: http://www.who.int/hiv/pub/paediatric/infants2010/en/index.html.

[16] Orenuga, S. O., Olubodun, A. A., Adejumo, A. O., Lawal, A. O., & Ogunsola, F. (2018). Nutritional status and risk of opportunistic infections among HIV-positive children in southwestern Nigeria. BMC Public Health, 18(1), 891. doi:10.1186/s12889-018-5651-8.

[17] Olowookere, S. A., Bamigboye, M. O., Oyeleke, O. M., & Oladele, J. O. (2020). Association between frequent viral load monitoring and clinical outcomes in HIV-positive children in a tertiary hospital in Nigeria. Journal of the Pediatric Infectious Diseases Society, 9(1), e20-e23. doi:10.1093/jpids/piaa104.

[18] Humphrey, A. M., Govaerts, R., Ficinski, S. Z., Masoka, E., Chandiwana, A., & Ndlovu, M. (2019). Caregivers’ attitudes towards caring for HIV-positive children and adherence to antiretroviral therapy: A cross-sectional study in Zimbabwe. AIDS Care, 31(7), 919-926. doi:10.1080/09540121.2019.1568547.

[19] Abdullahi, S.B., Ibrahim, O.R., Okeji, A.B., Yandoma, R.I., Bashir, I., Haladu, S., Idris, S.A., Oseni T.I., Suleiman, B.M., Yahaya, M. & Sufiyan, S.B. (2021). Viral suppression among HIV-positive patients on antiretroviral therapy in northwestern Nigeria: An eleven-year review of tertiary care records, January- 2009- December, 2019. BMC Infectious Diseases, 21:1031. https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-021-06722-3.

[20] Asuquo, E.F., Atowa, J.B., & Adejumo, P. (2014). Assessing the relationship between caregivers’ burden and the availability of support for family caregivers of HIV/AIDS patients in Calabar, South-East Nigeria. World Journal of AIDS, 3(4), 335-344.

https://www.scirp.org/journal/paperinformation.aspx?paperid=40632.