



Investigation into Factors Contributing to Adherence with Antiretroviral Regimen of People Living with HIV/AIDS Attending Babcock University Teaching Hospital

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Abstract: Low antiretroviral regimen efficacy, viral drug resistance, and pharmacokinetic interactions leading to insufficient drug delivery further complicate the poor adherence to therapy resulting from insufficient viral suppression. (Agboeze, Onwe, Onoh, Nwali, Ukaegbe, & Adeoye, 2018). The issue of mother-to-child HIV transmission is made even more problematic by the spread of antiretroviral resistance viruses. It is a clinical and public health challenge (Oku, Owoaje, Ige, Oyo-Ita, 2013). Therefore, this study was carried out to assess the factors contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital. Data was collected through the use of structured self-administered questionnaires with closed ended questions and was analyzed using SPSS version 21.

The cross sectional descriptive study was used to assess the determinant contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital. And purposive sampling techniques was used to selected participant for this study. However, findings of this study showed that a greater majority of the respondents were female and most of them were married, also a higher number of them have had up to tertiary education in which most of the respondents were from the Yoruba ethnic group. And also quite a number of the respondents average monthly income falls within the range of 50,001-100000naira. Furthermore, a greater majority of the respondents were fully aware that they are aware that the ART regimen is used to suppress viral load of HIV/AIDS, also More than half of the respondents also agreed to the fact that they can easily forget their ART regimen , more of the respondents believed that ART regimen will help in enabling them to even live longer than they expect. Majority of the respondents stated that they are fully aware that the use of illicit drug and alcohol consumption has significantly resulted into non-adherence of respondents to ART regimen. More, so it was reported that a higher number of the respondents of the respondents has good knowledge of adherence to antiretroviral regimen

More than half of the respondents perceive that regular adherence to ART regimen would disallow the spread of HIV to their contacts, quite a number of the respondents do not perceive that adherence

to ART regimen would remove HIV/AIDS stigma in their life because regular intake of the drug would disallow the community from knowing they are retroviral positive and also a greater majority of the respondents stated that their income, education and literacy can affect their adherence to ART regimen, Furthermore, result from the chi square analysis revealed that patient level factors contributing to adherence of antiretroviral regimen is statistically significant to the attitude and perception towards adherence antiretroviral regimen by the respondents which implies that means that the patient-level factors has a positive influence on the attitude and perception towards adherence of antiretroviral, Based on the findings of the study it is recommended that more information, education, and communication campaigns targeted at the general public are required to eliminate or reduce stigma to the barest minimum.

Keywords: Antiretroviral Regimen, HIV/AIDS, Babcock University Teaching Hospital.

Background to the study

HIV/AIDS is one of the most destructive epidemics the world has ever faced (Reda & Biadgilign, 2012). Although several interventions have been developed to curb the menace of the disease, such as antiretroviral therapy (ART), the level of adherence remains low (Adjei, 2019). ART is a treatment regimen intended to aid HIV-positive clients to live longer and healthier lives and reduce the risk of HIV transmission. These benefits can be achieved only if HIV-positive patients adhere to their medications ($\geq 95\%$ adherence) (World Health Organization, 2019). However, despite the benefits of adherence to ART, most HIV-positive clients often struggle to maintain adherence owing to diverse determinants (Zorto et al., 2022)

Globally, an estimated 37.9 million people are living with HIV, of whom 23.3 million are accessing ART; this represents a significant increase in treatment of about 7.7 million since 2010 (World Health Organization, 2019; UNAIDS, 2019a). There has also been a decline in AIDS-related mortality worldwide from 1.7 million in 2004 to 770 000 in 2018. This decline in mortality could be due to extended coverage and adherence to ART. Nevertheless, disparities still exist, with the World Health Organization (WHO) African region recording the largest HIV/AIDS prevalence and mortality (World Health Organization, 2019).

Patient level factors that contribute to defaulting from ART include forgetfulness, fatigue, hopelessness, and absence of symptoms and severity of the illness (Shet, De Costa, Heylen, Shastri, Chandy, & Ekstrand, 2016). Furthermore, lack of support from a partner negative perceptions towards ART medication, pre-occupation and absence from home due to employment compromises adherence to ARVs. Stigma and discrimination coupled with family pressure, regular changes of residence and religious beliefs influence defaulting from ART (Heestermans, Browne, Aitken, Vervoort, & Klipstein-Grobusch, 2016). Financial cost associated with accessing treatment is secondary to long distance especially among those residing in rural areas (Chirambo, Valeta, Kamanga, & Nyondo-Mipando, 2019). Inefficient health system including inadequate counseling on benefits of ART, long waiting times, compromised privacy due to inadequate consultation rooms, intermittent supply and stock outs of antiretroviral and reagents and dissatisfaction with the care received contribute to defaulting from ART (Shubber, Mills, Nachega, Vreeman, Freitas, & Bock, 2016). Drug related factors that influence defaulting include complexities and side effects of ARV regimen (Wasti, Simkhada, Randall, Freeman, van Teijlingen, 2012).

The importance of improving treatment adherence has resulted in focusing on this topic because non-adherence is the most common reason for treatment failure, with potential risk to develop drug resistance through suboptimal viral suppression (Mbuagbaw, Thabane, & Ongolo-Zogo, 2012). Subsequent transmission of first-line ART-resistant HIV strains increases demand for second-line treatment often associated with poorer patient health outcomes and increasing healthcare costs (Heestermans, Browne, Aitken, Vervoort, & Klipstein-Grobusch, 2016). Studies on ART adherence showed that predictors and risk factors differ per region of the world, necessitating context-specific development of non-adherence profiles, for these reasons, a thorough understanding of determinants of adherence to ART are paramount (Global AIDS Update, 2019). Therefore, this study is assessing

the determinant contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital.

Statement of problem

About 35.9 million people are currently living with HIV/AIDS worldwide of which 23.5 million are in Sub-Saharan Africa (Global Health Observatory, 2013). Nigeria has a current HIV prevalence of 4.1% with about 3.2 million infected with the virus and estimated 1.6 million eligible for Anti-retroviral drugs (Chirambo, Valeta, Kamanga, & Nyondo-Mipando, 2019). Previous research findings showed adherence rates of 78.3% and 90.6% and identified factors such as high pill-burden, high cost of transport fares, religion, medical side-effects, stigma and discrimination, attitude and poor education were associated with poor adherence to ARV drugs among patients (Agboeze, Onwe, Onoh, Nwali, Ukaegbe, & Adeoye, 2018). The poor adherence to therapy resulting from inadequate viral suppression is further challenged by low potency of antiretroviral regimen, viral resistance to antiretroviral medication and pharmacokinetic interactions causing inadequate drug delivery (Agboeze, Onwe, Onoh, Nwali, Ukaegbe, & Adeoye, 2018). The transmissibility of the antiretroviral resistant viruses from person to person further compounds the problem of mother to child transmission of HIV. It is a clinical and public health challenge (Oku, Owoaje, Ige, Oyo-Ita, 2013). The researcher could not lay hands on the specific determinants in Ogun State, therefore this study would be assessing the determinant contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital.

Objectives

The main objectives of this study is to assess the factors contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital.

Specific objectives are to:

1. Assess the level of attitude people living with HIV/AIDS attending Babcock University Teaching Hospital towards antiretroviral regimen
2. Assess the factors contributing to adherence with antiretroviral regimen among people living with HIV/AIDS attending Babcock University Teaching Hospital.
3. Assess the level of health institution-level factors contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital.

Research questions

1. What is the attitude towards antiretroviral regimen among people living with HIV/AIDS attending Babcock University Teaching Hospital?
2. What are patient-level factors contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital?
3. What are the level health institution-level factors contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital?

Research hypothesis

1. There is no significant relationship between the attitude towards adherence and the patient-level factors contributing to adherence of antiretroviral regimen.
2. There is no significant relationship between the attitude towards adherence and the health institution-level factors contributing to adherence of antiretroviral regimen.

Significant of the study

The findings from this study would contribute to the existing literature on patients living with HIV/AIDS (PLWHA). This study would further make nurses identify the factors needed to be intensified on for through awareness to PLWHA. It would also add to existing body of knowledge in nursing research thereby improving professionalism of nursing.

Scope of the study

This study will assess the determinant contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital.

MATERIAL AND METHOD**RESEARCH DESIGN**

This study is a cross sectional descriptive study, designed to assess the determinant contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital.

RESEARCH SETTING

Babcock University Teaching Hospital, Ilishan Remo, Ogun State equidistant between Ibadan and Lagos, it is affiliated to the Babcock University and has a bed capacity of 181 and 209 nurses with approximately 20 departments which includes medicine, surgery, pediatrics, Obstetrics and gynaecology etc. Babcock University Teaching Hospital is located at Ilishan, Ogun State, owned privately by the Seventh-day Adventist church since 1959. It is located in Ilishan Remo which is a town located within Irepodun district in Ikenne Local Government Area of Ogun State, South western Nigeria. An average of 62 old and new patients (adults and children) is attended to weekly at the HIV clinic. The ARV drugs are dispensed free of charge, on monthly basis to registered HIV infected patients including men, pregnant and non-pregnant women and children from different parts of Nigeria.

TARGET POPULATION

The target population are people living with HIV/AIDS attending Babcock University Teaching Hospital.

SAMPLE SIZE AND SAMPLING TECHNIQUE

The study will hold within 2 weeks, the average number of HIV patients in 2 weeks will be 124.

To calculate the sample size required, the Cochran's formula would be used;

$$n = N / (1 + N(e)^2)$$

Where;

n=sample size

N=population size (124)

e=level of precision expected at a 95% confidence level and p=0.05 are assured

$$n = 124 / (1 + 124(0.05)^2)$$

$$n = 124 / (1 + 0.31)$$

$$n = 124 / 1.31$$

$$n = 94.7$$

Therefore n=95

Attrition rate is 10% of the total sample size

$$\text{Attrition rate} = 95 * 10 / 100$$

$$\text{Attrition rate} = 9.5$$

$$\text{Total sample size} = n + \text{Attrition rate} (95 + 9.5) = 104.5$$

Therefore, a total of 105 questionnaires will be shared.

DATA ANALYSIS/STATISTICAL TREATMENT

Descriptive and inferential statistics were used for analysis of data. The data collected from questionnaire were manually sorted out and coded and thereafter imputed into the computer for analysis using Statistical package for social sciences (SPSS) software. Frequency and percentage tables were used for presentation. Statistical significance for association was tested using chi square with p-value less than 0.05 considered statistically significant.

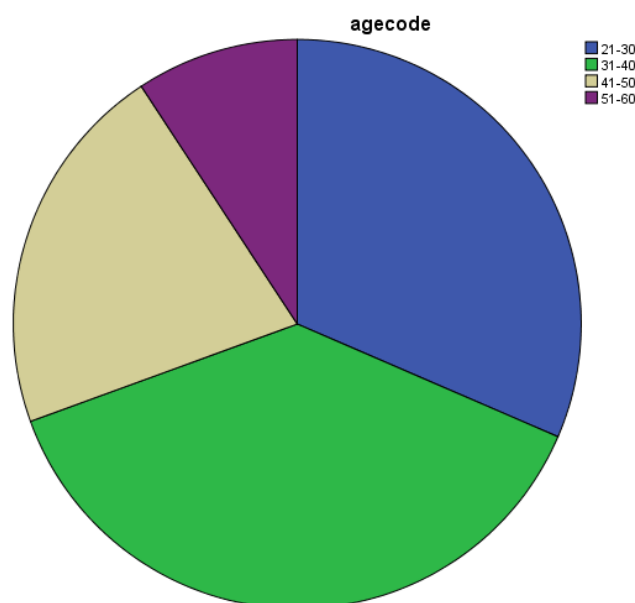
ETHICAL CONSIDERATIONS

Permission to conduct this study was obtained from the Babcock University Health Research Committee (BUHREC). Participants were informed of the study verbally and in writing through an information statement from which clearly explained the aim of the study as well as the benefits to the participants. They were also assured of confidentiality of all information obtained. They would be requested not to indicate their names or any identifying marks on the survey forms to ensure anonymity for the quantitative data.

RESULT**SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS****Table 1**

Age	Frequency	Percentage
21-30	34	31.5
31-40	41	38.0
41-50	23	21.3
51-60	7	9.3
Total	105	100.0

Result from table 1 above revealed that a higher percentage of the respondents 41(38.0%) falls within the age range 31-40years, followed by 34(31.5%) of them who fall within age range of 21-30years, 21.3% of the respondents were within the age range 41-50years and the remaining 7(9.3%) of them were within the age range of 51-60 years.

**Table 2**

Gender	Frequency	Percentage
Male	43	39.8
Female	62	58.3
Total	105	100.0

Results from the table above revealed that a greater majority of the respondents 62(58.3%) are female while the remaining 43(39.8%) of them are male

Table 3

Marital status	Frequency	Percentage
Married	80	76.2
Widowed	10	9.5
Divorced	15	14.3
Total	105	100.0

From the table above, it can be seen that majority of the respondents 80(76.2%) are married followed by 15(14.3%) of them that were divorced and 10(9.5%) are widowed

Table 4

Religion	Frequency	Percentage
Christain	85	80.9
Islam	18	17.1
Traditional	2	1.9
Total	120	100.0

Table 2 above shows that majority of the respondents 85(80.9%) practiced christainity as their main religion while 18(17.1%) of them practiced islam as their main religion and the remaining 2(1.9%) practiced traditional religion as their main religion

Table 5

Level of education	Frequency	Percentage
Primary	5	4.8
Secondary	20	19.1
Tertiary	80	76.2
Total	105	100.0

Majority of the respondents 80(76.2%) have had up to tertiary education followed by 20(19.1%) of them who have had secondary education, and the remaining 5(4.8%) of the respondents had only primary education.

Table 6

Ethnic group	Frequency	Percentage
Yoruba	90	87.5
Igbo	15	9.4
Hausa	5	4.8
Total	105	100.0

From table 5 above, a larger fraction of the respondents were from the Yoruba ethnic group 90(87.5%) and just a few of the respondents 9.4% and 4.8% were from the Igbo and Hausa ethnic groups respectively

Table 7

Average monthly income	Frequency	Percentage
Above 10,000	11	10.5
10,001-50,000	10	9.5
50,001-100,000	82	78
Above 100,001	2	1.9
Total	105	100.0

Result from the table above indicated that majority of the respondents average monthly income 82(78%) falls within the range of 50,001-100000, followed by 11(10.5%) whose average monthly income is above 10,000naira,10(9.5%) of them have average monthly income of between 10,001-50,000 and the remaining 2(1.9%) earns above 100000naira monthly on the average

Table 8

Employment status	Frequency	Percentage
Employed	82	78
Unemployed	5	4.8
Student	18	17.1
Total	105	100.0

From the table above, it can be seen that quite a number of the respondents 82(78%)were employed, followed by 18(17.1%) who indicated that they are students and the remaining 5(4.8%) of them are unemployed

SECTION B: Respondent's Knowledge on Antiretroviral Therapy Regimen

Table 9

Do you know that ART regimen is used to suppress viral load of HIV/AIDS?	Frequency	Percentage
Yes, I do	51	47.2
No I don't	40	38.0
I cant recall	14	14.8
Total	105	100.0

A greater majority of the respondents 51(47.2%) stated that they are aware that the ART regimen is used to suppress viral load of HIV/AIDS while a lesser majority of the 40(38.0%) of them stated that they do not know and the remaining 14(14.8%) of them couldn't recall

Table 10

Do you know that ART regimen will help in enabling you to even live longer than you expect	Frequency	Percentage
Yes I do	60	57.1
No, I don't	14	13.3
I cant recall	31	29.5
Total	105	100.0

From the table above, 60(57.1%) of the respondents reported that they know that ART regimen will help in enabling them to even live longer than they expect, followed by 31(29.5%) of them who stated that they do not know that ART regimen will help in enabling them to even live longer than they expect and the remaining 14(13.3%) of them reported that they couldn't recall

Table 11

Do you know that ART mean antiretroviral therapy	Frequency	Percentage
Yes I do	49	45.4
No, I do not	50	49.0
I cant recall	6	5.6
Total	105	100.0

Result from table 9 above revealed that 50(49.1%) of the respondents stated that they do not know that ART mean antiretroviral therapy, while 49(45.4%) of them reported that they know that ART mean antiretroviral therapy and the remaining 6(5.6%) of them couldn't recall

Table 12

Do you know that you can easily forget your ART regimen because they are indices for measuring ART	Frequency	Percentage
Yes, I do	26	23.1
No I don't	59	54.6
I cant recall	20	18.5
Total	105	3.7

More than half of the respondents 59(54.6%) reported that they are fully aware that they can easily forget their ART regimen because they are indices for measuring ART,26(23.1%) stated they they do not know that they can easily forget their ART regimen because they are indices for measuring ART and the remaining 20(18.5%) stated they couldn't recall

Table 13

Do you know that adherence to ART regimen enhance the most valuable HIV management outcome	Frequency	Percentage
Yes I do	52	48.1
No I do not	10	9.3
I don't know	34	34.3
I can't recall	9	8.3
Total	108	100

From the table above, majority of the respondents 52(48.1%) reported that they are aware that adherence to ART regimen enhance the most valuable HIV management outcome followed by 34(34.3%) stated they don't know that adherence to ART regimen enhance the most valuable HIV management outcome ,also 10(9.3%) stated they do not know and the remaining 9(8.3%) stated they couldn't recall

Table 14

Do you know that adherence is higher among respondent who have been on ART regimen for longer period	Frequency	Percentage
Yes I do	68	64.7
No I do not	25	23.8
I can't recall	12	11.4
Total	105	100.0

From the table above, a higher number of the respondents 68(64.7%) stated that they reported that they know that adherence is higher among respondent who have been on ART regimen for longer period,while 25(23.8%) of them stated that they do not know that know that adherence is higher among respondent who have been on ART regimen for longer period and the remaining 12(11.4%) stated that they couldn't recall

Table 15

Do you know that ART side effect can result in respondents non-adherence?	Frequency	Percentage
Yes,I do	25	23.8

No,I dont	75	71.4
I cant recall	5	4.8
Total	105	100.0

From table 13 above, a greater majority of the respondents 75(71.4%) reported that they do not know that ART side effect can result in respondents non-adherence while a lesser majority stated that they know that ART side effect can result in respondents non-adherence and only few of them 5(4.8) stated that they couldn't recall

Table 16

Do you know that negative attitude of health care workers can be a barrier to adherence to ART regimen	Frequency	Percentage
Yes I do	30	28.6
No I do not	72	68.6
I cant recall	3	2.9
Total	105	100.0

In the table above, it can be seen that majority of the respondents stated that they do not know that the negative attitude of health care workers can be a barrier to adherence to ART regimen followed by 30(28.6%) who reported that they know that the negative attitude of health care workers can be a barrier to adherence to ART regimen the remaining 3(2.9%) couldn't recall

Table 17

Do you know that use of illicit drug and alcohol consumption has significantly resulted into non-adherence of respondents to ART regimen	Frequency	Percentage
Yes I do	90	85.7
No I do not	10	9.5
I can't recall	5	4.8
Total	105	100.0

From table 17 above, majority of the respondents stated that they are fully aware that the use of illicit drug and alcohol consumption has significantly resulted into non-adherence of respondents to ART regimen,10(9.5%) of them stated otherwise and the remaining 5(4.8%) stated that they couldn't recall

SECTION C: Respondent's Perception on Antiretroviral Therapy regimen

Table 18

Do you perceive that adherence to your ART regimen would make you live long	Frequency	Percentage
Yes,I do	99	94.2
No,I do not	3	2.9
I will inquire	1	0.95
I cant remember	2	1.9
Total	105	100.0

Table 18 above revealed that almost all of the respondents perceived that adherence to their ART regimen will make them live longer while 3(2.9%) of them stated otherwise, followed by 2(1.9%) of them who stated that they couldn't remember and only 1(0.95%) stated they will inquire

Table 19

Do you perceive that adherence to ART regimen would suppress the viral load in your blood	Frequency	Percentage
Yes,I do	80	76.2
No,I do not	20	19.0
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

Majority of the respondents in the table above 80(76.2%) stated they perceive that adherence to ART regimen would suppress the viral load in their blood followed by 20(19%) of them who stated they do not perceive that adherence to ART regimen would suppress the viral load in their blood,3(2.9%) stated they will inquire while the remaining 2(1.9%) cant remember

Table 20

I do not feel bad about regimen	Frequency	Percentage
Yes,I do	60	57.1
No,I do not	40	38.1
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

More than half of the respondents 60(57.1%) stated that they always feel bad about regimen,40(38.1%) of them do not feel bad about regimen and 3(2.9%) stated that they will inquire while only 2(1.9%) couldn't remember

Table 21

Do you perceive that adherence to ART regimen can only be possible if you have the full support of the significant others	Frequency	Percentage
Yes,I do	62	57.1
No,I do not	38	38.1
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

Table 21 above showed that more than half of the respondents 62(57.1%) stated that they perceive that adherence to ART regimen can only be possible if you have the full support of the significant others,38(38.1%) reported that they do not perceive that adherence to ART regimen can only be possible if you have the full support of the significant others while 3(2.9%) stated that they will inquire and the remaining 2(1.9%) couldn't remember

Table 22

Do you perceived that regular adherence to ART regimen would disallow the spread of HIV to your contacts	Frequency	Percentage
Yes,I do	59	56.2
No,I do not	45	42.9
I will inquire	1	0.95
Total	105	100.0

Findings from table 22 above showed that more than half of the respondents perceive that regular adherence to ART regimen would disallow the spread of HIV to their contacts while 45(42.9%) of the respondents does not perceive that regular adherence to ART regimen would disallow the spread of HIV to their contacts and the remaining 1(0.95%) of the respondents stated that they will inquire

Table 23

Do you perceive that regular adherence to ART regimen would enable you to maintain your health status	Frequency	Percentage
Yes,I do	80	76.2
No,I do not	20	19.0
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

Majority of the respondents in the table above 80(76.2%) stated they perceive that regular adherence to ART regimen would enable them to maintain their health status followed by 20(19%) of them who stated they do not that regular adherence to ART regimen would enable them to maintain their health status, 3(2.9%) stated they will inquire while the remaining 2(1.9%) can't remember

Table 24

Do you perceive that adherence to ART regimen would assist you in retaining your job status	Frequency	Percentage
Yes,I do	70	66.7
No,I do not	30	28.6
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

From the table above, it can be seen 70(66.7%) of the respondents stated that they perceive that adherence to ART regimen would assist them in retaining their job status, followed by 30(28.6%) who do not perceive that adherence to ART regimen would assist them in retaining their job status,3(2.9%) will inquire and the remaining 2(1.9%) of them stated that they couldn't remember.

Table 25

Do you perceive that adherence to ART regimen would enable you enjoying the fruit of your labour	Frequency	Percentage
Yes,I do	62	57.1
No,I do not	38	38.1
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

As seen from the table above, majority of the respondents 62(57.1%) believed that adherence to ART regimen would enable them enjoying the fruit of them labour, followed by 38(38.1%) of the respondents who do not percieve that adherence to ART regimen would enable them enjoying the fruit of their labour,3(2.9%) said they will inquire and the remaining 2(1.9%) of them couldn't remember

Table 26

Do you perceive that adherence to ART regimen would remove HIV/AIDS stigma in your life because regular intake of your drug would disallow the community from knowing you are retroviral positive	Frequency	Percentage
Yes,I do	50	47.6
No,I do not	52	49.5
I will inquire	2	1.9
I cant remember	1	0.95
Total	105	100.0

Result from the table above revealed that 52(49.5%) of the respondents do not perceive that adherence to ART regimen would remove HIV/AIDS stigma in their life because regular intake of the drug would disallow the community from knowing they are retroviral positive while 50(47.6%) reported that they believe adherence to ART regimen would remove HIV/AIDS stigma in their life because regular intake of the drug would disallow the community from knowing they are retroviral positive and only 2(1.9%) of them stated that they will inquire

Table 27

Do you perceive that adherence to ART regimen would reduce the incidence and prevalence of mortality and morbidity among PLWHA	Frequency	Percentage
Yes,I do	82	78.0
No,I do not	15	14.3
I will inquire	5	4.8
I cant remember	3	2.9
Total	105	100.0

From the table above, it can be seen 82(78%) of the respondents stated that they perceive that adherence to ART regimen would reduce the incidence and prevalence of mortality and morbidity among PLWHA, followed by 15(14.3%) who do not perceive that adherence to ART regimen would reduce the incidence and prevalence of mortality and morbidity among PLWHA,5(4.8%) of them stated they will inquire and the remaining 3(2.9%) couldn't remember.

SECTION D: Determinants of respondents adherence to ART regimen

Table 28: Patients determinants

Do you think your income, education and literacy can affect your adherence to ART regimen	Frequency	Percentage
Yes,I do	70	66.7
No,I do not	30	28.6
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

From the table above, it can be seen 70(66.7%) of the respondents stated that they think their income, education and literacy can affect their adherence to ART regimen, while 30(28.6%) stated that they do not think their income, education and literacy can affect their adherence to ART regimen,3(2.9%) will inquire and the remaining 2(1.9%) of them stated that they couldn't remember.

Table 29: Patients determinants

Do you think that lack of appropriate health insurance scheme would affect your adherence to ART regimen	Frequency	Percentage
Yes,I do	80	76.2
No,I do not	20	19
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

Majority of the respondents in the table above 80(76.2%) stated they think that lack of appropriate health insurance scheme would affect their adherence to ART regimen followed by 20(19%) of them who stated they do not think that lack of appropriate health insurance scheme would affect their adherence to ART regimen, 3(2.9%) stated they will inquire while the remaining 2(1.9%) can't remember

Table 30: socio demographic determinants

Do you think that your decision and perception over treatment outcome can affect your adherence to ART regimen	Frequency	Percentage
Yes,I do	62	57.1
No,I do not	38	38.1
I will inquire	5	4.8
Total	105	100.0

As seen from the table above, majority of the respondents 62(57.1%) believed that their decision and perception over treatment outcome can affect their adherence to ART regimen, followed by 38(38.1%) of the respondents who do not think that their decision and perception over treatment outcome can affect their adherence to ART regimen, and the remaining 5(4.8%) of them stated they will inquire

Table 31: Psychological determinants

Do you think that emotional distress and substance abuse can affect your adherence to ART regimen	Frequency	Percentage
Yes,I do	70	66.7
No,I do not	30	28.6
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

From the table above, it can be seen 70(66.7%) of the respondents stated that they think that emotional distress and substance abuse can affect their adherence to ART regimen, while 30(28.6%) stated that they do not think that emotional distress and substance abuse can affect their adherence to ART regimen,3(2.9%) will inquire and the remaining 2(1.9%) of them stated that they couldn't remember

Table 32: Psychological determinants

Do you think that forgetfulness can affect your adherence to ART regimen	Frequency	Percentage
Yes,I do	70	66.7
No,I do not	30	28.6
I will inquire	3	2.9

I cant remember	2	1.9
Total	105	100.0

From the table above, it can be seen 70(66.7%) of the respondents stated that they think that forgetfulness can affect their adherence to ART regimen, while 30(28.6%) stated that they do not think that forgetfulness can affect their adherence to ART regimen,3(2.9%) will inquire and the remaining 2(1.9%) of them stated that they couldn't remember.

Table 33: Treatment determinants

Do you think that complexity of the ART regimen would affect your adherence to ART regimen	Frequency	Percentage
Yes,I do	62	57.1
No,I do not	38	38.1
I will inquire	3	2.9
I cant remember	2	1.9
Total	105	100.0

As seen from the table above, majority of the respondents 62(57.1%) believed that the complexity of the ART regimen would affect their adherence to ART regimen, followed by 38(38.1%) of the respondents who do not think that complexity of the ART regimen would affect their adherence to ART regimen, and the remaining 5(1.4.8%) of them stated they will inquire

Table 35 Knowledge score

Knowledge score	Frequency	Percentage
0-5, poor knowledge	5	4.8
6-10, good knowledge	100	95.2
Total	105	100.0

A higher number of the respondents 95.2% of the respondents has good knowledge of adherence to antiretroviral regimen while only 4.8% of them has good knowledge of adherence to antiretroviral regimen

SECTION D: TESTING OF RESEARCH HYPOTHESIS

First hypothesis: There is no significant relationship between the attitude and perception towards adherence and the patient-level factors contributing to adherence of antiretroviral regimen.

Table 36

Do you perceive that adherence to ART regimen would suppress the viral load in your blood	Do you think your income, education and literacy can affect your adherence to ART regimen							
	Yes, I do	No, I dont	I will inquire	I cant recall	Total	Chi square	Df	P-value
Yes, I do	45(43.9%)	18(31.6%)	14(24.6%)	0(0.0%)	77(100%)	25.610	2	0.000
No,I don't	15(46.4.0%)	9(54%)	0(0.0%)	0(0.0%)	24(100%)			
I will inquire	4(100%)	0(0.0%)	0.(0.0%)	0.(0.0%)	4(100%)			
Total	64(84.7%)	27(84%)	14(24.6%)	0(0.0%)	105(100%)			

It can be seen from the table above shows that there is a good relationship between the attitude and perception towards adherence antiretroviral regimen and the patient-level factors contributing to adherence of antiretroviral regimen(chi -square =25.610, p-value <0.05)decision: since the calculated value is more than the tabulated value, we therefore reject the null hypothesis and conclude that the patient-level factors has a positive influence on the attitude and perception towards adherence of antiretroviral

Second hypothesis: There is no significant relationship between the attitude towards adherence and the health institution-level factors contributing to adherence of antiretroviral regimen

Table 37

Do you perceive that adherence to ART regimen would suppress the viral load in your blood	Do you know that negative attitude of health care workers can be a barrier to adherence to ART regimen						
	Yes I do	No, I don't	I can't recall	Total	Chi square	Df	P-value
Yes I do	20(85.1%)	1(61.9%)	1(4.8%)	21(100.0%)	21.115	9	0.002
No I don't	16(34.0%)	15(31.9%)	14(29.8%)	47(100.0%)			
I will inquire	11(28.9%)	11(28.9%)	8(21.1%)	35(100.0%)			
I cant recall	0(0.00%)	2(38.0%)	0(0.00%)	2(100.0%)			
Total	34(31.5%)	41(100.0%)	23(21.3%)	105(100.0%)			

There is also a statistical significant relationship between relationship between the attitude and perception towards adherence antiretroviral regimen and do you know that negative attitude of health care workers can be a barrier to adherence to ART regimen (chi -square =21.115, p-value >0.05) this indicated negative attitude of healthcare workers has a great influence on the attitude and perception towards adherence antiretroviral regimen

Discussion of Findings

Human Immunodeficiency Virus (HIV) that causes HIV infection and Acquired Immunodeficiency Syndrome (AIDS), remains one of the biggest public health challenge in world history (WHO, 2015) HIV is increasingly becoming a chronic manageable disease (Doorfamn & Sang, 2014) Global implementation of antiretroviral therapy (ART) has increased the survival rate of People Living With HIV (PWHIV), so that the disease condition has shifted from fatal to a chronic disease, This study was carried out to assess the determinant factors contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital. From ,the analysis it is evident that a higher percentage of the respondents 38.0% falls within the age range of 31-40years, followed by 31.5% of them who fall within age range of 21-30years, 21.3% of the respondents were within the age range 41-50years and the remaining 9.3% falls within the age range of 51-60 years with the mean age and standard deviation were found to be 38.5years and 5.1years respectively, a greater majority of the respondents 58.3% are female while the remaining 39.8% of them are male. 76.2% of them are married followed 14.3% of them are divorced and 9.5% are widowed

Majority of the respondents 80.9% are Christians while 17.1% of them practiced islam as their main religion and only a few stated that they practiced traditional religion as their main religion. Majority of the respondents 76.2% have had up to tertiary education followed by 19.1% of them who have had secondary education, and the remaining 4.8% of the respondents had only primary education. Furthermore, a larger fraction of the respondents were from the Yoruba ethnic group 87.5% and just a few of the respondents 9.4% and 4.8% were from the Igbo and Hausa ethnic groups respectively, this is due to the fact that the study was carried out in a South-western state. Also it was revealed that majority of the respondents average monthly income 78% falls within the range of 50,001-100000, followed by 10.5% whose average monthly income is above 10,000naira, 9.5% of them have average monthly income of between 10,001-50,000 and the remaining 1.9% earns above 100000naira monthly on the average. Quite a number of the respondents 78% were employed, followed by 18(17.1%) who indicated that they are students and the remaining 5(4.8%) of them are unemployed

SECTION B: Respondent's Knowledge on Antiretroviral Therapy Regimen

A greater majority of the respondents 47.2% stated that they are aware that the ART regimen is used to suppress viral load of HIV/AIDS while a lesser majority of the 38.0% of them stated that they do not know. Also, 57.1% of the respondents are fully aware that ART regimen will help in enabling them to even live longer than they expect, 49.1% of the respondents stated that they do not know that ART means antiretroviral therapy, while 45.4% of them reported that they know that ART mean

antiretroviral therapy. More than half of the respondents 54.6% are fully aware that they can easily forget their ART regimen.,26(23.1%) stated they they do not know that they can easily forget their ART regimen because they are indices for measuring ART

From the table above, majority of the respondents 48.1% reported that they are aware that adherence to ART regimen enhance the most valuable HIV management outcome followed by 34.3% stated they don't know that adherence to ART regimen enhance the most valuable HIV management outcome.

Furthermore, a greater majority of the respondents 71.4% reported that they do not know that ART side effect can result in respondents non-adherence while a lesser majority stated that they know that ART side effect can result in respondents non-adherence, this is however in contrast with a study by Achappa et al (2016) where majority of the respondents are aware that ART side effect can result in respondents non-adherence. Also, it can be seen that majority of the respondents stated that they do not know that the negative attitude of health care workers can be a barrier to adherence to ART regimen followed by 28.6% who reported that they know that the negative attitude of health care workers can be a barrier to adherence to ART regimen. Majority of the respondents stated that they are fully aware that the use of illicit drug and alcohol consumption has significantly resulted into non-adherence of respondents to ART regimen, 9.5% of them stated otherwise and this result is also in consistent with the study by Achappa et al (2016) where majority of the respondents stated they are aware that alcohol consumption can result into non-adherence of respondents to ART regimen. Generally, A higher number of the respondents 95.2% of the respondents has good knowledge of adherence to antiretroviral regimen while only 4.8% of them has good knowledge of adherence to antiretroviral regimen and this is also in line with a study by Potchoo et al (2010) where almost all the respondents had perfect knowledge of adherence to antiretroviral regimen

SECTION C: Respondent's Perception on Antiretroviral Therapy regimen

Almost all the respondents perceived that adherence to their ART regimen will make them live longer, also a higher number of the respondents 76.2% stated they perceive that adherence to ART regimen would suppress the viral load in their blood, more than half of the respondents 57.1% stated that they perceive that adherence to ART regimen can only be possible if you have the full support of the significant others, 38.1% reported that they do not perceive that adherence to ART regimen can only be possible if you have the full support of the significant

Furthermore, more than half of the respondents perceive that regular adherence to ART regimen would disallow the spread of HIV to their contacts while 42.9% of the respondents does not perceive that regular adherence to ART regimen would disallow the spread of HIV to their contacts. Majority of the respondents in the table above 80(76.2%) stated they perceive that regular adherence to ART regimen would enable them to maintain their health status followed by 19% of them who stated they do no that regular adherence to ART regimen would enable them to maintain their health status, also from the study, majority of the respondents 57.1% believed that adherence to ART regimen would enable them enjoying the fruit of them labour, followed by 38.1% of the respondents who do not perceive that adherence to ART regimen would enable them enjoying the fruit of their labour. 49.5% of the respondents do not perceive that adherence to ART regimen would remove HIV/AIDS stigma in their life because regular intake of the drug would disallow the community from knowing they are retroviral positive while 47.6% reported that they believe adherence to ART regimen would remove HIV/AIDS stigma in their life because regular intake of the drug would disallow the community from knowing they are retroviral positive 78% of the respondents perceived that adherence to ART regimen would reduce the incidence and prevalence of mortality and morbidity among PLWHA, 66.7% of the respondents stated that they think their income, education and literacy can affect their adherence to ART regimen,

SECTION D: Determinants of respondents adherence to ART regimen

Majority of the respondents 76.2% believed that lack of appropriate health insurance scheme would affect their to adherence to ART regimen, 66.7% of the respondents also stated that they think that emotional distress and substance abuse can affect their adherence to ART regimen, while 30(28.6%)

stated that they think otherwise it can be seen 70(66.7%) of the respondents stated that they think that forgetfulness can affect their adherence to ART regimen, while 30(28.6%) stated that they do not think that forgetfulness can affect their adherence to ART regimen, 3(2.9%) will inquire and the remaining 2(1.9%) of them stated that they couldn't remember, this is in line with a study by Abdissa A (2013) where majority of the respondents attributed forgetfulness to their non-adherence to ART regimen Furthermore, there is a good relationship between the attitude and perception towards adherence antiretroviral regimen and the patient-level factors contributing to adherence of antiretroviral regimen(chi -square =25.610, p-value <0.05),this means that the patient-level factors has a positive influence on the attitude and perception towards adherence of antiretroviral, in addition to this, there is also a statistical significant relationship between relationship between the attitude and perception towards adherence antiretroviral regimen and do you know that also , this however indicated that negative attitude of healthcare workers has a great influence on the attitude and perception towards adherence antiretroviral regimen

SUMMARY, CONCLUSION AND RECOMMENDATIONS

SUMMARY

This study was carried out to assess the factors contributing to adherence with antiretroviral regimen of people living with HIV/AIDS attending Babcock University Teaching Hospital. Data was collected through the use of structured self-administered questionnaires with closed ended questions and was analysed using SPSS version 21.

However, findings of this study showed that a greater majority of the respondents were female and most of them were married, also a higher number of them have had up to tertiary education in which most of the respondents were from the Yoruba ethnic group. And also quite a number of the respondents average monthly income falls within the range of 50,001-100000naira. Furthermore, a greater majority of the respondents were fully aware that they are aware that the ART regimen is used to suppress viral load of HIV/AIDS, also More than half of the respondents also agreed to the fact that they can easily forget their ART regimen , more of the respondents believed that ART regimen will help in enabling them to even live longer than they expect. Majority of the respondents stated that they are fully aware that the use of illicit drug and alcohol consumption has significantly resulted into non-adherence of respondents to ART regimen. More, so it was reported that a higher number of the respondents of the respondents has good knowledge of adherence to antiretroviral regimen

More than half of the respondents perceive that regular adherence to ART regimen would disallow the spread of HIV to their contacts, quite a number of the respondents do not perceive that adherence to ART regimen would remove HIV/AIDS stigma in their life because regular intake of the drug would disallow the community from knowing they are retroviral positive and also a greater majority of the respondents stated that their income, education and literacy can affect their adherence to ART regimen,

Also, most of the respondents believed that tht lack of appropriate health insurance scheme, emotional distress and substance abuse and forgetfulness can affect their adherence to ART regimen

Furthermore, result from the chi square analysis revealed that patient level factors contributing to adherence of antiretroviral regimen is statistically significant to the attitude and perception towards adherence antiretroviral regimen by the respondents which implies that means that the patient-level factors has a positive influence on the attitude and perception towards adherence of antiretroviral, also negative attitude of health care workers was also found to be highly significant to the attitude and perception towards adherence antiretroviral regimen by the respondents which also implies that the attitude of healthcare workers has a great influence on the attitude and perception towards adherence antiretroviral regimen

CONCLUSION

The degree of awareness and adherence revealed in this study was generally high, but the health insurance system and certain other institutional problems that prevent the PLWHA from adhering to

the ART regimen need to be given greater attention. Analysis was done on a variety of potential adherence-affecting variables. Some of these characteristics, such as stigmatization, financial hardship, the attitude of healthcare providers, and recent sickness, were linked to patient adherence to ART. Seminars that address PLWHA stigmatization should also be offered as forms of support. The other important factors related to optimal adherence include knowledge about HIV disease and antiretroviral therapy, disclosure of one's HIV status, social support, and use of reminders. Besides, perception of patient-provider relationship and clinical setting aspects such as perception on confidentiality of information, convenience with appointment schedules, and attitudes of health workers were found to be significantly associated with adherence to antiretroviral therapy. Forgetfulness, complexity of the ART regimen, and running out of medication pills were identified as the most common reasons for the patients to miss their HIV medications.

RECOMMENDATIONS

This study has come up with important findings on the level of adherence and identified factors affecting adherence of adult HIV infected patients to their antiretroviral therapy. Based on the findings of the study, the following recommendations have been made:

1. Health care providers should enhance their interpersonal interaction with their patients to appropriately deliver messages about the HIV disease and HIV medications, In other to build a trusting relationship and encourage patients to ask questions about their treatment and discuss challenges of taking ARV medications.
2. More information, education, and communication campaigns targeted at the general public are required to eliminate or reduce stigma to the barest minimum.
3. Peer education and adherence support group programmes should be further encouraged to help patients learn from one another about their life experiences,
4. The management of the health facilities and health care providers should focus on maintaining confidentiality of patient-related information as much as possible. This should be supported with a code of conduct to help protect the rights of patients and promote optimal adherence to treatment.

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