

Antiretroviral Therapy (ART): Evaluation of Art's Perception among People Living with HIV/AIDS in South Western Nigeria

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Abstract

ART has become the mainstay in the management of HIV/AIDS worldwide as it has considerably reduced the mortality and morbidity that would have been associated with this disease. The ART however, has transformed the perception of HIV/AIDS from a fatal incurable disease to a manageable chronic illness. The study assessed PLWHA's perception of ART in a tertiary hospital in south western Nigeria.

Mixed methods were used to assess the perceptions from the respondents between 18 and 60 years with the aid of structured questionnaire, Focus group discussions and in-depth interviews. Quantitative data were analyzed using percentages, frequency distributions and chi-square while qualitative data were thematically analysed.

The study revealed a positive perception of ART among the respondents which was about 86.3% as they perceived positive effects of the ART on their health. Furthermore the study was able to identify, improved health status and fear of drug resistance as their major positive perception towards ART from the interview as these were elicited to have contributed to the clients' adherence to ART.

The study in its entirety revealed an overall positive perception to ART among them with the following determinants as factors enhancing the positivity: sex, age, marital status and level of education.

Keywords: ART; HIV/AIDS; PLWHA

Introduction

The scourge of Human Immunodeficiency Virus/Acquired Immunodeficiency Diseases (HIV/AIDS) with the development of antiretroviral drugs in its management has gone a long way to make it a chronic manageable disease [1]. The development and widespread use of antiretroviral therapy (ART) as the treatment of choice in HIV has improved significantly the health conditions of HIV positive individuals who could have untimely death. The ART however, has transformed the perception of HIV/AIDS from a fatal incurable disease to a manageable chronic illness [2]. The treatment causes improvement in immunologic status and reduction in the viral load [3] which consequently reduces the incidence of hospitalization and mortality. Perception is concerned with people's beliefs that they can exert control over their own motivation, thought processes, emotional states and patterns of behavior [4]. However, negative perceptions of the efficacy of ART and its effects and could act as barriers and be preventing adherence. Patients' beliefs and behaviours play an important role in adherence. Studies have shown that patient beliefs about illness and the efficacy of the treatment regime affect adherence [5]. Several researchers have tried to look at those factors ranging from socio-economical issues, environmental factors, and patient-doctors interaction among PLWHA affecting their ART, but not much attention have been paid to the influence of personal (client's perception) on this issue. This is the gap that this research intends to fill.

Conceptual Framework

Conceptual framework for evaluation of ART's perception among PLWHA. The conceptual framework presented in Figure 1 above explained the roles of individual factors (timely taken of medication, improved health status, fear of drug resistance) and various socio-demographic variables like age, sex, marital status, level of education and level of income on clients' perception to ART.

Objective

To evaluate people living with HIV/AIDS' perception of antiretroviral therapy in the study area.

Methodology

Study location

The study was conducted in the Institute of Human Virology of Nigeria which is situated inside the premises of the teaching hospital in Ile-Ife. It was conducted among the clients currently receiving ART there. This institution has catchment of patients from Ondo, Osun and Ekiti states. The choice of the study location is as a result of the center being a referral center and at the same time the only place where ART is being carried out according to the national guideline on management of HIV/AIDS patients in Ile-Ife and its environs. This center is selected as patients diagnosed of HIV from various neighboring communities are referred to this center for management hence having a wide distribution of clients from various zones.

Research design

The study design was cross-sectional and both qualitative and quantitative research methods were adopted. Clients' perceptions were assessed from sets of questions that were scaled on the questionnaire.

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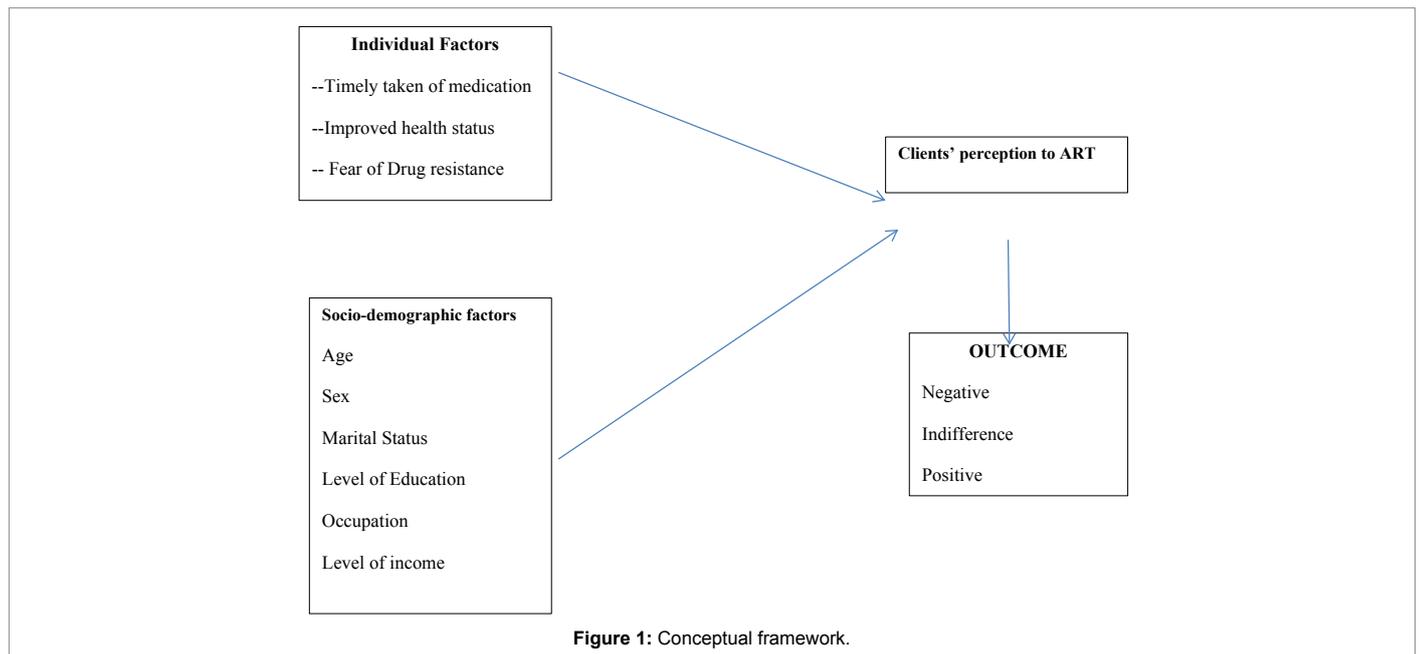


Figure 1: Conceptual framework.

Population and sample size

The study population was 3007 patients (male and female) between the ages of 18 and 60 years who have been receiving ARV drugs for over six months before the commencement of this study. Pregnant women, children and any other patients with other morbidities were not included in the study.

Sampling size was determined using the formula

$$n(f) = n/1 + (n/N)$$

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

where z = standard deviation 1.96

p = prevalence of adherence in southwest is 44% = 0.44

q = failure rate = $1 - p = 1 - 0.44 = 0.56$

d = level of significance = 0.05

N = study population = 3,007

Hence the sample size calculated is 336. As such 336 copies of questionnaire were administered on respondents. Also three in-depth interviews were conducted with a nurse, a doctor and a pharmacist.

Sampling technique

The sample for the study comprised of male and female clients who have been on ART for more than six months and between the ages of 18 to 60 years. One out of every tenth patients was systematically selected as they presented on each clinic days and were recruited until the desired sample size was achieved. These constituted the patients that were administered questionnaires. These participants had been on antiretroviral drugs for more than six months prior to the study and were selected using systematic sampling technique in which every 10th person was selected for the study until the sample size was reached. The respondents were reached in the Infectious Disease Unit. Also two focus group discussion sessions were held with 10 males and 10 females living with HIV and currently on ART. These groups were purposively selected based on their being on ART for more than one

year. Furthermore, in-depth interviews were conducted on three purposively selected healthcare givers (an experienced nurse, a doctor and a pharmacist) in the clinic. All the interviews were conducted at the clinic on the clinic days. For the collection of qualitative data, interview guides were used to conduct the FGD and in-depth interviews.

Research instruments

The research instruments for this study were comprised of structured questionnaire. Each questionnaire comprised two sections namely; Sections A and B. Section A contained socio-demographic variables. This section was designed to provide information on respondent's socio-demographic variables such as age, sex, marital status among others. Section B contained questions on client's perception of ART. Also interview guide was used to collect information from the healthcare providers on the assessment of ways their clients perceived the ART. Focus group discussion guide was also used to collect information from the respondents. Section A collected information on demographic variables. The questionnaires were administered to the respondents at the clinic on their clinic days in the hospital while the interview and focus discussion groups were conducted in the consulting room after the end of the clinic for the day.

Method of data collection

Several visits to the clinic and interaction with health workers and PLWHA indicated that there were about 3,000 PLWHA. Staff and patients were favorably disposed to participating in the study.

Data were collected at the clinic by the researcher. In order for the data collection to be hitch free, permission was sought and obtained from the director of the Institute. Structured questionnaire were administered to the respondents. Interviews were conducted with the aid of an interview guide. Also two focus group discussion sessions were conducted for 10 males and 10 females with the aid of the focus group discussion guide. The interviews were conducted and audio-taped by the researcher.

Data analysis

The analysis of quantitative data was done in three stages. Firstly

the information obtained from the field was edited; the copies of questionnaire were thoroughly checked to correct all inconsistencies in responses by the respondents. This was done in form of field editing, that is, checking for mistakes and omissions in recording of information while on the field. Secondly, data analysis was preceded by data-coding and data-entry and analyzed using Statistical package for social sciences version 20. Data were analyzed using descriptive statistics. The descriptive data were presented in the form of frequency distribution and percentages. The data were analyzed in themes as each objective formed a theme. The audio responses were transcribed and verbatim quotations were utilized to describe the responses from the qualitative method.

Ethical consideration

Before the commencement of the study, the purpose of the study was explained to the respondents, assuring them of the confidentiality of their responses and identities. They were also assured that they would not come to any harm as a result of participating in the study. Also their consent was sought and obtained prior to participation. Also, Ethical permission for the study was obtained from the Ethics and Research committee of OAUTHC, Ile-Ife.

Results

Firstly, univariate analyses presented the socio-demographic characteristics of the respondents using frequency distribution and percentages. The variables presented are sex, age, marital status, ethnic affiliation, religion, level of education, occupation, average monthly income, place of residence and people whom they are residing with. In all, three hundred and thirty six (336) copies of questionnaire were administered in the clinic but three hundred and twenty nine (329) were retrieved for analysis. The response rate is about 98%.

Socio-demographic characteristics of respondents

Table 1 presents the distribution of the socio-demographic characteristics of the respondents such as sex, age, marital status, ethnic affiliation, religion, level of education, occupation, average monthly income, place of residence and people whom they are residing with. This gives a comprehensive picture of the respondents for this study. Considering the sex distribution of the respondents from Table 1, it was observed that female respondents constitute a larger percentage (64.4%) than the male (35.6%). On the basis of age, almost half (50.2%) of the respondents fall within the reproductive age of 30 to 40years, while 27.2% fall within 41 to 50 years and 22.6% are of more than 50 years. Data on marital status showed that 75.7% are married while 8.5% are single with 1.8% being separated. From the table it could be observed that 95.5% are of the Yoruba ethnicity, this is probably due to the location of the health facility which is domiciled in the southwestern part of the country where the Yoruba ethnic dominate. Only 0.9% is of the Hausa tribe and 3.6% belong to the Igbo ethnic distribution. As for the religious affiliation, majority (81.2%) was Christians and 17.0% were Muslims while only 1.8% identified with the traditional religion. It can also be seen that religion permeates all aspects of human life and experience since every respondent indicated being attached to one religious faith or another.

As for the educational level, the result revealed that 53.5% of them had post-secondary qualification level while 39.5% attained secondary education and 7.0% had primary level of education. As regards the type of occupation, those employed in the public sector were 30.7% and self-employed respondents were 24.3%. Also employed in the private sector were 13.7% and only 1.5% accounted for the unemployed cadre. The

Socio-Demographic Characteristics	Options	Male		Female		Total		
		F	%	F	%	F	%	
Age of respondents	15-30 years	12	1.9	15	4.6	27	6.5	
	31-40 years	23	7.1	118	36.5	141	43.7	
	41-50 years	36	11.1	52	16.1	88	27.2	
	51-60 years	49	15.2	24	7.4	73	22.6	
	Total	120	35.3	209	64.7	329	100.0	
Marital Status	Single	11	3.3	17	5.2	28	8.5	
	Married	98	29.8	151	45.9	249	75.7	
	Divorced	0	0.0	15	4.6	15	4.6	
	Widow	6	1.8	20	6.1	26	7.9	
	Widower	2	0.6	3	0.9	5	1.5	
	Separated	0	0.0	6	1.8	6	1.8	
	Total	117	35.6	212	64.4	329	100.0	
Ethnic distribution	Igbo	3	0.9	9	2.7	12	3.6	
	Hausa	0	0.0	3	0.9	3	.9	
	Yoruba	114	34.7	200	60.8	314	95.5	
	Total	117	35.6	212	64.4	329	100.0	
Religion Affiliation	Christianity	82	24.9	185	56.2	267	81.2	
	Islam	32	9.7	24	7.3	56	17.0	
	Traditional	3	0.9	3	0.9	6	1.8	
	Total	117	35.6	212	64.4	329	100.0	
Educational Level	Primary	17	5.2	6	1.8	23	7.0	
	Secondary	49	14.9	81	24.6	130	39.5	
	Post-Secondary	51	15.5	125	38.0	176	53.5	
	Total	117	35.6	212	64.4	329	100.0	
Occupation	Artisan	15	4.6	3	0.9	18	5.5	
	Employed in Private Sector	18	5.5	27	8.2	45	13.7	
	Employed in Public Sector	25	7.6	76	23.1	101	30.7	
	Full Homemaker	0	0.0	3	0.9	3	.9	
	Self Employed	39	11.9	41	12.5	80	24.3	
	Student	3	0.9	0	0.0	3	.9	
	Trading	15	4.6	59	17.9	74	22.5	
	Unemployed	2	0.6	3	0.9	5	1.5	
	Total	117	35.6	212	64.4	329	100.0	
	Place of Residence	Within Osun State	77	23.4	152	46.2	229	69.6
		Outside Osun State	40	12.2	60	18.2	100	30.4
Total		117	35.6	212	64.4	329	100.0	
Persons with whom they live	Alone	6	1.8	12	3.6	18	5.5	
	With My Partner	86	26.1	126	38.3	212	64.4	
	With Parents	0	0.0	14	4.3	14	4.3	
	With Relatives	8	2.4	3	0.9	11	3.3	
	With Friends	5	1.5	6	1.8	11	3.3	
	With my children	12	3.6	51	15.5	63	19.1	
	Total	117	35.6	212	64.4	329	100.0	
Income	5000 to 20000	41	21.9	58	31.0	99	52.9	
	20001 to 40000	12	6.4	21	11.2	33	17.6	
	40001 to 100000	12	6.4	36	19.3	48	25.7	
	more than 100000	4	2.1	3	1.6	7	3.7	
	Total	69	36.9	118	63.1	187	100.0	

Table 1: Distribution of respondents by socio-demographic characteristics.

study revealed that 69.6% of the respondents receiving treatment in this facility were residing within the state (Osun) while 30.4% of them were living outside the state. It was gathered that 5.5% of the PLWHA are living alone and 94.5% are residing with their partner, relative, children, parents and friends, this could be attributed to a very strong

family and social support been rendered to them. Lastly from the Table 1, the average monthly income distribution showed that 52.5% earned between five thousand to twenty thousand naira, 17.6% earned between twenty thousand to forty thousand naira while only 3.7% earned above hundred thousand naira.

Analysis of respondent's perception to ART

In order to summarize the respondents' perceptions, their responses to section C of the questionnaire were scored as stipulated on the questionnaire that is (Disagree was scored 1, Somewhat Disagree scored 2, Neutral scored 3, Somewhat Agree scored 4 and Agree scored 5). The resulting scores were culminated to constitute a measure of respondent's perception of ART. On the measure, the maximum value obtained was 40 while the minimum value was 0. The mean score obtained for the measure is 33.50 with a standard deviation of 9.10. The measure was categorized in such a way that any score of 16 or less was considered to be negative perception while scores ranging from 17 to 24 are regarded as been indifferent. Any score that is greater than 24 was regarded as positive perception. The categories were then given a descriptive analysis and the result is presented in Table 2. From the table it showed that 86.3% of the PLWHA that were examined have a very positive perception of ART while 3.6% negatively perceived ART and only 10.0% were indifferent.

Reasons for clients' perceptions

Concerning the various perception of ART by PLWHA, it was noted from the Table 3 below that 90.0% of the respondents opined to not missing a dose nor taking it lately or incorrectly for the medication to work best, while 69.9% of the respondents agreed that the medication they use have a positive effect on their health, however about 30.7% disagree on the basis that some ARV drugs have to be taken on an empty stomach and others may be taken with food. Also 84.8% of the respondents agreed at all levels that the time at which the medication is taken will influence its effectiveness but only 11.5% disagreed to this while 1.8% remained indifferent. Meanwhile, 85.4% of the participants revealed that drug resistance develops when their ARV are missed or taken lately or incorrect with 75.4% of them fully aware that they would have to take the drugs for the rest of their life. In addition, the Table 3 also revealed that 78.1% of the examined PLWHA agreed that if they do not take the medication exactly as instructed the HIV in their

body will become resistant to HIV medication as only 1.8% of them remained indifferent to this and 10.9% totally disagreed to it. In the overall assessment it could be deduced that they have a very strong/positive disposition to ART.

This finding was corroborated by interviewed respondents in the following extracts

Extract 1: Response from one of the PLWHA

Improvement in respondents' health status was identified as one of the reasons for adhering to ART as can be evidenced from these excerpts:

"I know, before my coming here I was very sick and have been taking some drugs with nil improvement, I see much improvement. All those irritations on my skin have disappeared and as I was lean before, but now I have put on weight, so the drug is really working" (FGD2, Male, 35 years)

Extract 2: Response from one of the PLWHA

"It's working very well as my body is ok and I don't fall sick like before" (FGD2, Female, 51 years)

Extract 3: In-depth Interview with health worker (Nurse)

"generally they are not doing bad, we only have some few defaulters, at the time they are coming in maybe they are very sick, we place them on ART after counselling, some of them after getting well decide to default"

Extract 4: In-depth interview with health worker (A Medical Doctor)

"Some do adhere but some don't adhere strictly, some ask whenever they miss their doses that can they still take it maybe 30 min after the normal or ideal time, by this you know that they are not adhering well. But generally they do adhere very well, except very few"

Extract 5: In-depth interview with health worker (A Pharmacist)

"invariably they are doing very well, I won't be able to score them 100%, I will give them 90% because they themselves have really seen reasons to adhere very seriously"

To further corroborate the perception of uptake of ART by the respondents, the health workers who are involved in the direct care for these patients fully supported that majority of them have a very positive perception of ART.

From the interviewees' responses it could be affirmed that most PLWHA in this study have a very positive perception of ART they are taking.

	Frequency	Percentage
Negative	12	3.6
Indifferent	33	10.0
Positive	284	86.3
Total	329	100.0

Table 2: Respondents' perception of ART.

Perception statements	Disagree		Somewhat disagree		Neutral		Somewhat agree		Agree		No response	
	f	%	f	%	f	%	f	%	f	%	f	%
The medication I use have a positive effect on my health	60	18.2	12	3.6	9	2.7	12	3.6	230	69.9	6	1.8
If I do not take the medication exactly as instructed the HIV in my body will become resistant to HIV medication	36	10.9	12	3.6	6	1.8	12	3.6	257	78.1	6	1.8
I have to take drugs for the rest of my life	51	15.5	6	1.8	3	0.9	9	2.7	248	75.4	12	3.6
Some ARV drugs have to be taken on an empty stomach and others may be taken with food	95	28.9	6	1.8	6	1.8	12	3.6	201	61.1	9	2.7
The time at which the medication is taken will influence its effectiveness	30	9.1	8	2.4	6	1.8	12	3.6	267	81.2	6	1.8
Missing doses or taking them late or incorrectly will determine if the treatment works	48	14.6	5	1.5	6	1.8	12	3.6	249	75.7	9	2.7
For my medication to work best, I should not miss a dose nor take it late or incorrectly	9	2.7	6	1.8	3	0.9	9	2.7	296	90.0	6	1.8
Drug resistance develops when my ARV are missed or taken late or incorrectly.	18	5.5	3	0.9	9	2.7	12	3.6	281	85.4	6	1.8

Table 3: Reasons for clients' perception.

Socio-demographic Characteristics	Level of Perception to ART				χ^2 (p value)
	Negative	Indifferent	Positive	Total	
	Freq (%)	Freq (%)	Freq (%)	Freq (%)	
Age group					$\chi^2 = 16.625$ p (0.011) df=6
15-30 years	3 (0.9)	0 (0.0)	18 (5.6)	21 (6.5)	
31-40 years	5 (5.1)	9 (2.8)	127 (39.3)	141 (43.7)	
41-50 years	2 (0.6)	15 (4.6)	71 (22.0)	88 (27.2)	
51-60 years	2 (0.6)	6 (1.9)	65 (20.1)	73 (22.6)	
Total	12 (3.7)	30 (9.3)	281 (87.0)	323 (100.0)	
Sex					$\chi^2 = 7.305$ p (0.026) df=2
Male	2 (0.6)	18 (5.5)	97 (29.5)	117 (35.6)	
Female	10 (3.0)	15 (4.6)	187 (56.8)	212 (64.4)	
Total	12 (3.6)	33 (10.0)	284 (86.3)	329 (100.0)	
Marital Status					$\chi^2 = 29.310$ p (0.001) df=10
Single	2 (0.6)	3 (0.9)	23 (7.0)	28 (8.5)	
Married	6 (1.8)	30 (9.1)	213 (64.7)	249 (75.7)	
Divorced	0 (0.0)	0 (0.0)	15 (4.6)	15 (4.6)	
Widowed	2 (0.6)	0 (0.0)	24 (7.3)	26 (7.9)	
Widower	2 (0.6)	0 (0.0)	3 (0.9)	5 (1.5)	
Separated	0 (0.0)	0 (0.0)	6 (1.8)	6 (1.8)	
Total	12 (3.6)	33 (10.0)	284 (86.3)	329 (100.0)	
Ethnic affiliation					$\chi^2 = 2.490$ p (0.646) df=4
Hausa	0 (0.0)	0 (0.0)	3 (0.9)	3 (0.9)	
Igbo	0 (0.0)	0 (0.0)	12 (3.6)	12 (3.6)	
Yoruba	12 (3.6)	33 (10.0)	269 (81.38)	314 (95.4)	
Total	12 (3.6)	33 (10.0)	284 (86.3)	329 (100.0)	
Religion					$\chi^2 = 12.463$ p (0.014) df=4
Christianity	12 (3.6)	21 (6.4)	234 (71.1)	267 (81.2)	
Islam	0 (0.0)	12 (3.6)	44 (13.4)	56 (17.0)	
Traditional	0 (0.0)	0 (0.0)	6 (1.8)	6 (1.8)	
Total	12 (3.6)	33 (10.0)	284 (86.3)	329 (100.0)	
Level of Education					$\chi^2 = 18.618$ p (0.001) df=4
Primary	2 (0.6)	3 (0.9)	18 (5.5)	23 (7.0)	
Secondary	8 (2.4)	21 (6.4)	101 (30.7)	130 (39.5)	
Post-Secondary	2 (0.6)	9 (2.7)	165 (50.2)	176 (53.5)	
Total	12 (3.6)	33 (10.0)	284 (86.3)	329 (100.0)	

Table 4: Relationship between respondents' perception to ART and Socio-demographic characteristics.

Conversely, only one interviewee was of negative perception on the uptake of ART as he said:

Extract 6: Response from one of the PLWHA

'not really I just know that it should be taken at the same time on each days' (FGD1, Male, 44 years) (Table 4).

Discussion

In this study, it was indicated that 86.3%, of the respondents had a very strong, positive perception of ART as most of them believe that for the medication to work best, doses of the ARV drugs must not be missed nor taken incorrectly, adequately and at the right time. Almost all the respondents (86.3%) had a positive perception of ART and this proportion was higher than those found earlier in similar studies in Southwest Nigeria; 73.9% in Ibadan by Olowookere et al. and 77% in treatment centres in Ilesha and Ile-Ife [6,7]. The increment might be due to more awareness about the free treatment and increase in early diagnosing with prompt commencement of ART among them. It was noted during the interview section that good counseling by the counselors in the clinic enhanced them to have a very strong perception of ART. This finding was corroborated by Onyeonoro et al. which revealed a fairly good knowledge and perception of ART among

the PLWHA [8]. Also, over 70% of them were of the opinion that the medications have positive effects on their health. This was further supported by the health care workers interviewed as they rated them more than 90% effective in their uptake of the ARV medications as they are very committed to the therapy. Furthermore the study was able to identify, improved health status and fear of drug resistance as their major positive perception towards ART from the interview as these were elicited to have contributed to the clients' adherence to ART.

Considering the relationship between the respondents' perception of ART and socio-demographic variables of the respondents: age, sex, marital status, religion, level of education and income level were found to be statistically significant. Perception to ART among the respondents was noticed to be mostly positive in all the variables. A significantly statistically relationship was reported in the age group ($\chi^2 = 16.625$, $p < 0.05$) as 31-40 years which are within the reproductive age groups majorly have a positive perception to ART. Also the female gender among the sex population showed 56.8% of positive perception to ART which was statistically significant at ($\chi^2 = 7.305$, $p < 0.05$). It was observed during data collection that in every clinic appointment, women were usually more than the men. Other African studies among adult HIV patients in clinic settings also had higher proportions of female respondents and similar average ages according to Potchoo

et al. and Talam et al. [9,10]. In addition, marital status especially among the married group constituted 64.7% of positive perception to ART with statistically significant ($\chi^2=29.310$, $p<0.05$). Also the relationship between perception and level of education was found to be statistically significant ($\chi^2=18.618$, $p<0.05$) as the respondents with post-secondary educational qualification constituting 50.2% of the respondents. This was corroborated by Afolabi et al. which showed that higher education was significantly associated with good knowledge about ART [7].

Conclusion

The study in its entirety revealed an overall positive perception to ART among them with the following determinants as factors enhancing the positivity: sex, age, marital status and level of education.

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