Adherence to Medical Treatments Among HIV/AIDS Positive Patients Attending Antiretroviral Therapy Clinics in Nasarawa State, Nigeria

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Abstract

Poor adherence to medical treatment is a general problem among HIV/AIDS patients attending ART Clinics in Nasarawa State and this often leads to viral unsuppression and treatment failure. This cross-sectional descriptive research aimed at assessing the contributing factors to poor adherence in medical treatment among HIV positive patients. Self-structured and validated questionnaires were used to collect data from HIV/AIDS positive patients. Simple random sampling technique was used to select 400 samples after cluster sampling technique was used to select some ART clinics used for the study. All data collected were analyzed using MINITAB 14 and presented in figures and percentages using frequency distribution table. Findings showed that 90% of the respondents have knowledge on the medical management, information and the use of drug as a means of treatment. 80% accepted that the best method is the use of drugs while 90% also agree that the knowledge will improve adherence. 60% of the respondents had misconception that HIV antibody tests are not reliable while 30% believe that HIV can be detected by appearance. Reasons for defaults included perceived stigma/discrimination (50%), forgetfulness (25%), and use of herbal medicine (20%). 70% of the defaulters stopped their medication within 1 to 3 months of initiation. It was concluded that there is need for health workers in ART clinics to enhance adherence counseling to these clients /patients to improve adherence and dismiss their misconceptions as successful way of achieving viral suppression in treatment and hurting transmission of HIV/AIDS.

Keywords: Adherence, Treatment, HIV/AIDS Patients, Antiretroviral, Therapy.

Introduction

Poor Adherence in medical treatment among HIV/AIDS positive patients is the most common cause of therapeutic failure in people living with HIV/AIDS. Sadly, the emergence of non-compliance in medical treatment among HIV/AIDS positive patients is a common occurrence. Even under the best of circumstances given that no antiretroviral drug combination study as of now is completely effective in shutting down viral replication, the effectiveness of antiretroviral therapy (ART) relies on a strict compliance to it. In other words, loose obedience, or non-obedience to ART can result in inadequate viral suppression, immunologic failure, rapid disease progression, and the development of drug resistance. HIV reproduces in the body very quickly, making billions of new viruses every day by replicating its genetic material. This fact explains the need for complete adherence to drug regimen among PLHIV.

ART increases the length of life and productivity of the people living with HIV (PLWH) by improving survival and decreasing the incidence of opportunistic infections through reduction of viral load and increase of the level of CD4 cells. Poor adherence is often a consequence of one or more behavioral, structural, and psychosocial barriers e.g. depression, low health literacy, low levels of social support, stressful live events, poverty, non-disclosure of HIV serostatus, denial, stigma and inconsistent access to medication. Furthermore, patients' age may affect compliance, for example, some adolescent and young adult HIV positive patient (Bello, 2011; Aliyu, 2014).

Recognizing this, a lot has been done by researchers, government and non-governmental organizations to ensure medical adherence among PLHIV. These includes fixed dose combination of drugs, convenient monthly packs, follow up before supplies exhausted, adapting therapy to the clients' life style, support group, peer health education etc. This in some extent has resulted in some

degree of adherence among PLHIV especially the use of peer health education, fixed dose combination and convenient monthly packs. However, in ART clinics in Nasarawa State, most patients with HIV/AIDS still do not comply with their drug regime, hence, failure in treatment received. Therefore, this study aimed at assessing the factors responsible for poor adherence by the patient in the medical treatment of HIV/AIDS and suggests possible solutions to the problem.

Specific objectives of the study

1. To assess the level of knowledge of HIV/AIDS positive patients on the medical management of HIV/AIDS in ART clinics in Nasarawa State.
2. To assess for misconceptions regarding HIV/AIDS among the HIV positive patients in ART clinics in Nasarawa State.
3. To ascertain contributing factors for poor adherence in the medical treatment of HIV/AIDS among HIV/AIDS Positive patients in ART clinics in Nasarawa.
4. To determine the duration HIV/AIDS positive patients in ART clinics in Nasarawa State stay in treatment before defaulting.

Hypotheses

1. The age of PLHIV is independent of their duration in care before defaulting
2. Sex of PLHIV is independent of their duration of default while in care

Methodology

Research design. Cross-sectional descriptive type of design was used for this study to assess the contributing factors to poor adherence in medical treatment among HIV/AIDs positive patients attending Anti-Retroviral therapy (ART) Clinics in Nasarawa State.

Research Setting. The study was conducted in ART clinics in Nasarawa State. Nasarawa State is located in the North Central geopolitical zone of Nigeria. It is named "Home of Solid Minerals" because of its rich in many natural mineral deposits. The State has 13 L.G. As with total population of 1869377 (2006 National Population census). The inhabitants are mainly farmers, civil servants, business men and artisans. Nasarawa State shares borders with five other states and the Federal capital, Abuja. To the north, it shares boundaries with Kaduna State; to the north-east, Plateau State; to north-west, Abuja; to the south, Benue State; south-west, Kogi State, and south-east, Taraba State.

Target Population The target population was restricted to all the HIV/AIDS positive clients attending ART clinics in Nasarawa State. According to Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) report 2019, Nasarawa State with a population of 5,610,188 (according to National Population Census, 2006) has HIV prevalent rate of 2%. This means that 11, 2203 persons in Nasarawa State are living with HIV.

Sample and sampling technique. To calculate the sample size, Yamane's (1967:886) formula was used.

$$n = \frac{N}{1+N(e)^2}$$

Where;
n is the sample size,
N is the population size, and,
e is the level of precision.
Thus, the sample size is
n= 112203/1+112203×0.0025
Therefore, sample size = 112203/281 =399.3

400 HIV/AIDs positive patients from selected ART clinics in Nasarawa State were selected and used for the study. A simple random sampling technique was used to select 400 samples after cluster sampling technique was used to select some ART clinics used for the study using Pareto principle of research.

Inclusion criteria Participants included in this study must be HIV positive client attending ART clinic in one of the facilities in Nasarawa State, Nigeria. He/she must be properly enrolled into care in one of the ART facilities in Nasarawa State, Nigeria.

Exclusion criteria Any person not living with HIV/AIDS is not included in the study. Also, any client even though living with HIV but is not properly enrolled into care in any of the ART clinics in Nasarawa State, Nigeria is not included in the study.

Instrument for data collection. Self-designed, structured questionnaire was used for data collection. The questionnaire was designed in line with the objective of the study. It has sections, with each section eliciting information on the research question. The questionnaire has first introductory part, where the researchers introduced themselves to the respondents, instructing them on what is expected of them and how to answer the questions. Section "A" of the questionnaire has to do with the socio-demographic data of the respondents. Section "B, C, D and E" were designed to initiate information on the research questions. The questionnaire was made up of both open and close ended questions.

Validity and reliability of the data collection instrument. The instrument after been constructed was subjected to face validity and scrutiny by fellow researchers after which it was pre-tested on a similar population to ascertain its reliability.

Procedure for data collection. The researcher visited the clinics twice. The first was to introduce the topic, explain how to answer the questionnaires and distribution of the questionnaires. The second was to collect the questionnaires from the respondents. The completed questionnaires were collected from the ART focal persons of the respective clinics after one week of its distribution to the respondents.

Method of data analysis. All data collected were analyzed using MINITAB 14 and presented in figures and percentages using frequency distribution table.

Ethical consideration. The researcher contacted the chief medical officer in-charge for permission to carry out the research in the hospital after which permission from the head of the clinic and the respondents were also sought for which were all granted. The researchers assured them that the work is purely for academic exercise and will be used only for the purpose.
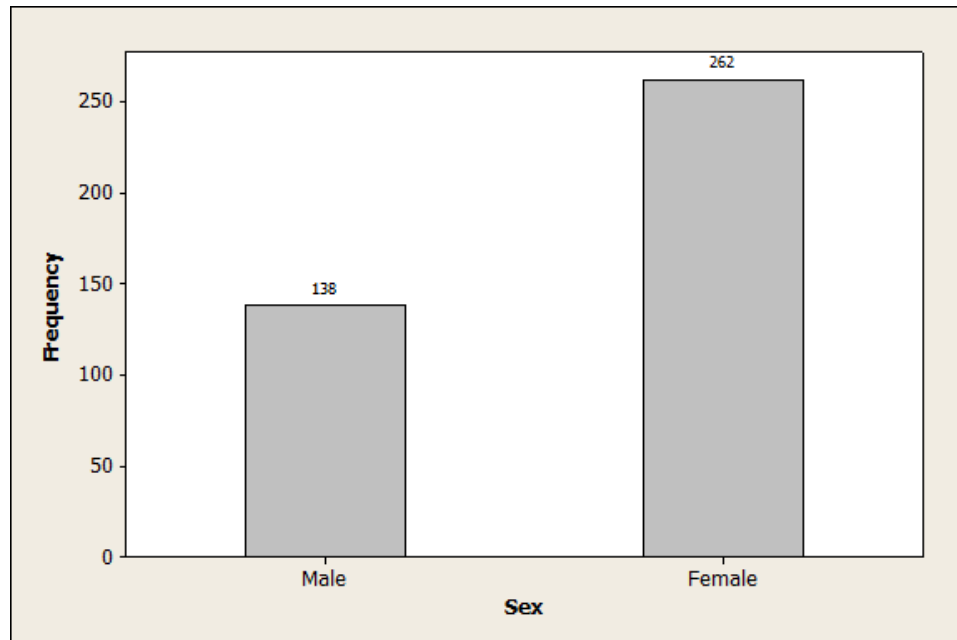
Data presentation

Demographic data
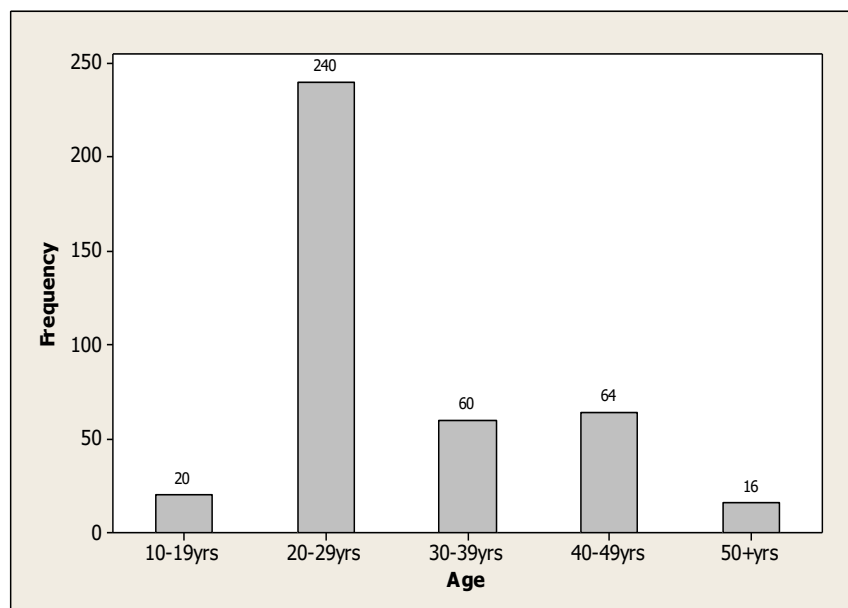
Figure 1. Age distribution of PLHIV

Figure 1 above showed that out 400 respondents, 20(5%) were between the age of 10-19, 240(60%) were between the age of 20-29, 60(15%) were between the ages of 30-39, 64(16%) were between the ages of 40-9, while 16(4%) were between the age of 50 and above.

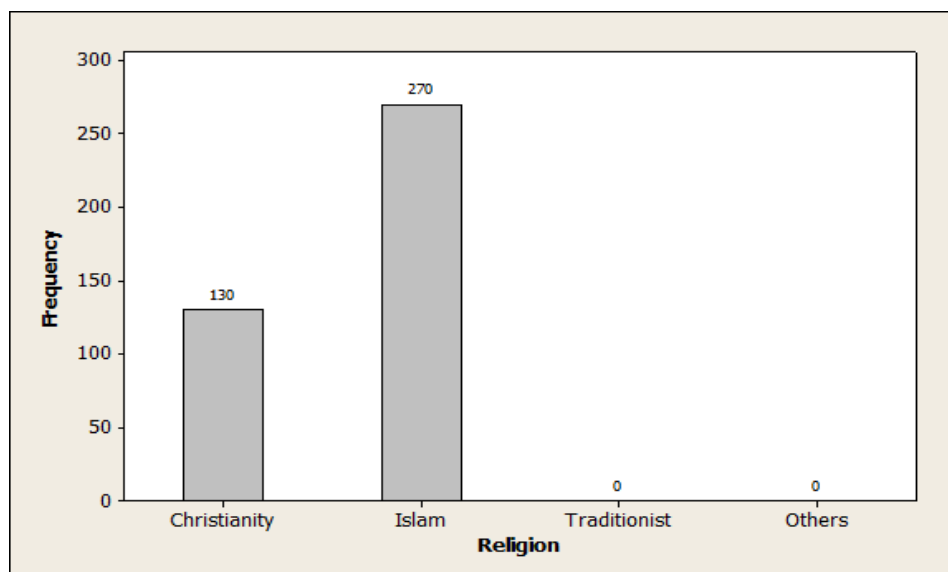
Figure 2. Sex distribution of PLHIV

The figure 2 above showed that 138 (34.5%) of the respondents were male while 262 (65.5%) were female.
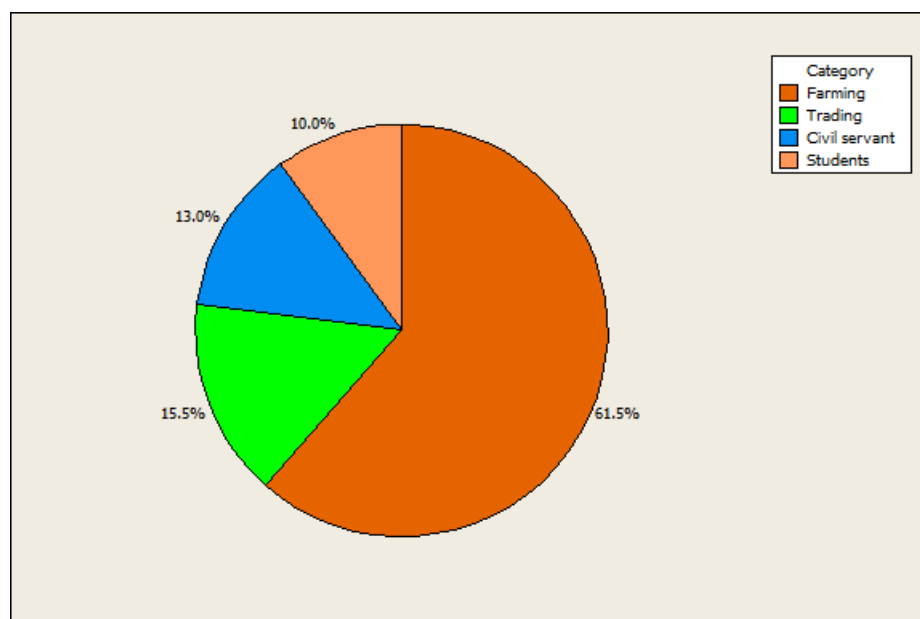
Figure 3. Occupation distribution of PLHIV

On the occupation of the respondents, the figure 3 above showed that out of 400 respondents, 264 (61.5%) were famers, 62 (15.5%) were traders, 52 (13%) were civil servants while 40 (10%) were students.

Figure 4. Religious distribution of PLHIV

Figure 4 above showed that 130 (32.5%) of the respondents practice Christianity, while 270 (67.5%) practice Islam.
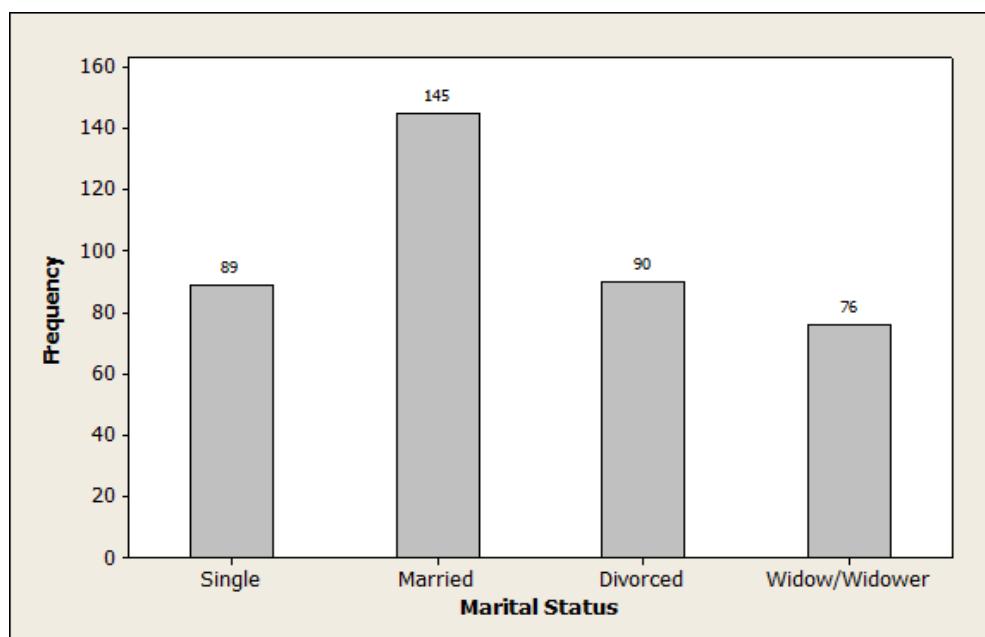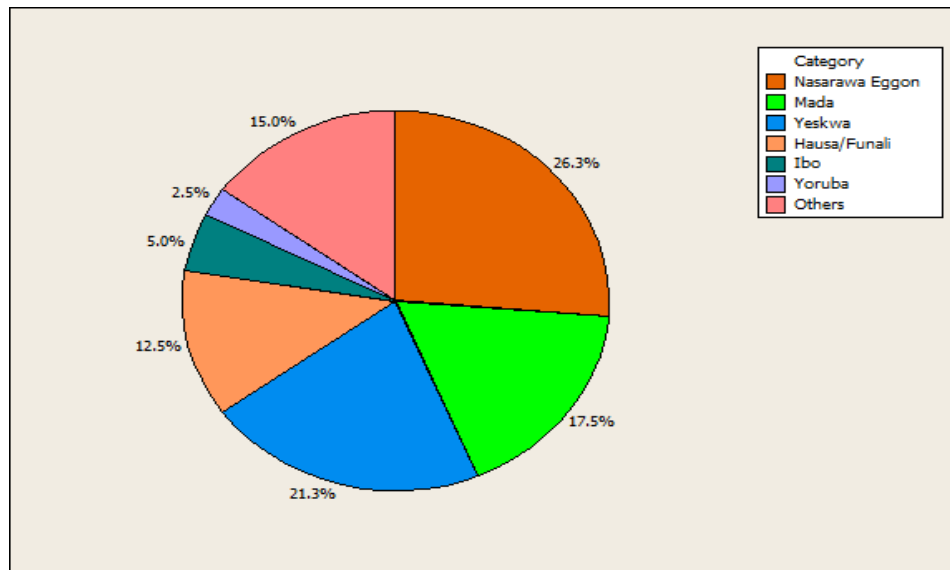

Figure 5. Marital status of PLHIV

About the marital status of the respondents, the figure 5 above showed that 89 (22.2%) were single, 145 (36.3%) were married, 90 (22.5%) were divorced while 76 (19%) were widows/widower.

Figure 6. Ethnicity distribution of PLHIV

The figure 6 above showed that out of 400 respondents, 105 (26.2%) were Nasarawa Eggon, 70 (17.6%) were Mada, 85 (21.2%) were Yeskwa, 50 (12.5%) were Hausa/Funali, 20 (5%) were Igbo, 10 (2.5%) were Yoruba, while 10% were from other ethnic groups.

Research question 1. What is the level of knowledge of HIV positive patients on the medical management of HIV/AIDS in ART clinics in Nasarawa State?

Table 1. Knowledge on medical management of HIV/AIDS by positive patients

Item	Frequency	Percentage (%)
Have you heard of medical management of HIV		
Yes	380	95
No	20	5
Total	400	100
If yes from which source		
Health workers	270	67.5
Friends/family members	80	20
Mass Media	50	12.5
Total	360	100
Is the knowledge important?		
Yes	375	93.8
No	25	6.2
Total	400	100
Which method is the best medical therapy?		
Use of Drugs	280	70
Use of herbs	80	20
HIV need no treatment	0	0
Spiritual healing	32	8
Proper feeding with good food	8	2
Total	400	100
Will the knowledge improve compliance		
Yes	386	96.5
No	14	3.5
Total	400	100
If yes how		

Being faithful in taking prescribed drugs	275	68.8
Understanding the side effect of drugs	20	5
Meeting with appointment time	105	26.2
Total	**400**	**100**

From table 1 above, 90% of the respondents said that they have the knowledge about the medical management of HIV/AIDs. Of these, 50% got the knowledge from health workers, 27.8% got it from friends while 22.2% got their own from mass media. The table also showed 90% said that the knowledge is important. 80% agree that medical management is best. The table showed that out of 400 respondents, 90% agree that the knowledge will improve compliance as it will help them to be faithful in taking their drugs(60%), 10% help understand the side effects of these drugs (10%), and help them meet with their appointment date (30%).

Research question two. What are the misconceptions regarding HIV/AIDS among HIV positive patients in ART clinics in Nasarawa State?

Table 2. Misconceptions about HIV/AIDS by positive patients

Items	Frequency	Percentage (%)
Do you believe that HIV is real disease		
Yes	400	100
No	0	0
Total	400	100
If yes what is your believes about HIV?		
That HIV Antibody are not reliable	136	34
Can be detected by appearance	118	29.5
Having sex with a virgin can cure HIV	6	1.5
People with HIV-I cannot contact HIV-II	40	10
Having sex with animal can cure HIV	0	0
Herbal medicine can cure HIV	89	22.2
Somebody can get HIV through charm	11	2.8
Total	400	100

From table 2 above, out of 400 respondents, 100% agree that HIV is real disease. The table further reveals that out of 400 respondents, 60% believe that HIV Antibody test is not reliable, 30% believe that it can be dictate by appearance, while 10% believe that those with HIV-I cannot contact HIV-II.

Research question three. What are the contributing factors to poor adherence in the medical management of HIV/AIDs positive patients in ART clinics in Nasarawa State?

Table 3. Factors responsible for poor adherence to medical treatment among positive patients

Items	Frequency	Percentage (%)
What are the factors contributing to your poor adherence?		
Misunderstanding on how to take the drug	40	10
Forgetfulness	121	30.2
Hiding the drug because of stigma/ discrimination	179	44.8
Poor relation attitude of the health workers	20	5
Lack of transportation to the clinic	36	9
No family support	4	1
Total	**400**	**100**

Table 3 above showed that out of 400 respondents, 10% said that contributing factor to poor adherence was misunderstanding on how to take the drug, 30% say that it was forgetfulness, 50% agree that it was hiding of drugs due to stigma and discrimination while 10% said that it was lack of transportation to the clinic.

Research question four. How long do HIV positive patients stay in the medical management in ART clinics in Nasarawa State before defaulting?

Table 4. Defaulting of PLHIV while on drugs

Items	Frequency	Percentage (%)
Are you aware that HIV positive client's defaults?		
Yes	389	97.2
No	11	2.8
Total	**400**	**100**
Have you ever stopped taking your drugs?		
Yes	400	100
No	0	0
Total	**400**	**100**
If yes, for how long did you took the drugs before you stopped?		
1-3months	265	66.3
4-6 months	100	25
7-9 months	20	5
10-12 months	10	2.5
After some years	5	1.2
Total	**400**	**100**
For how long did you missed taking of the drugs?		
Some days	210	52.5
Some weeks	112	28
Some months	47	11.8
Up to one year	20	5
Years above	11	2.7
Total	**400**	**100**
How long do you know the drug will be taken?		
For life time	346	86.5
Few weeks	5	1.2
Few months	27	6.8
Few years	22	5.5
Total	**400**	**100**
What do you think will happen if you stop taking your drugs?		
Nothing will happen	42	10.5
Condition will not change	25	6.2
Condition will get worse	333	83.3
Condition will be better	0	0

Table 4 above reveals that out of 400 respondents, 80% said that patients default with their medical treatment. The table further shows that 100% agree that they have for a while stopped taking their drugs. It further reveals 70% defaults from 1-3months while 30% says 3-6 months after they started taking the drugs. 52.5% agree that they stopped taking for some days while 35% says some weeks before they stop while 12.5% said it was for some months. 90% said that the drug is to be taken for life time while 40% agree that it is for few years. The table further showed that 100% believe that their condition will get worse if they stop taking their drugs.

Testing of hypotheses using chi-square

First hypothesis;
  1. H_o. The age of PLHIV is independent of the duration in care before defaulting
  2. H_1. The age of PLHIV is dependent on the duration in care before defaulting

Table 5. Hypothesis test of age versus duration in care before defaulting

Age (Years)		Duration in care before defaulting					
		1-3months	4-6months	7-9months	10-12months	Above 1 year	Total
10-19	Observed frequency	22	13	4	2	3	44
	Expected frequency	27.50	10.45	2.53	1.98	1.54	
	x^2	1.100	0.622	0.854	0.000	1.384	
20-29	Observed frequency	46	22	4	3	5	80
	Expected frequency	50.00	19.00	4.60	3.60	2.80	
	x^2	0.320	0.474	0.078	0.100	1.729	
30-39	Observed frequency	146	37	6	5	2	196
	Expected frequency	122.50	46.55	11.27	8.82	6.86	
	x^2	4.508	1.959	2.464	1.654	3.4443	
40-49	Observed frequency	21	16	5	6	2	50
	Expected frequency	31.25	11.88	2.88	2.25	1.75	
	x^2	3.362	1.433	1.571	6.250	0.036	
50Above	Observed frequency	15	7	4	2	2	30
	Expected frequency	18.75	7.13	1.73	1.35	1.05	
	x^2	0.750	0.002	3.000	0.315	0.860	
Total		250	95	23	18	14	400

$$\chi^2 = \frac{(O-E)^2}{E}$$

Where

χ^2 is the chi-square

O is the observed frequency
E is the expected frequency
Chi-square = 38.267, DF =16, P-value =0.001, $\quad \alpha = 0.05$

Decision

The decision is not to reject the null hypothesis. There is not enough evidence to support the claim that a person's age is dependent on the duration on care before defaulting.

Second hypothesis

1. H_o. Sex of PLHIV is independent of the duration of default while in care
2. H_1. Sex of PLHIV is dependent on the duration of default while in care

Table 6. Hypothesis test of age versus duration of default while in care

Duration of default while in care							
Sex		**Some days**	**Some weeks**	**Some months**	**Up to a year**	**Two years above**	**Total**
Male	Observed frequency	63	42	15	7	3	130
	Expected frequency	68.25	36.40	15.28	6.50	3.58	
	χ^2	0.404	0.862	0.005	0.038	0.092	
Female	Observed frequency	147	70	32	13	8	
	Expected frequency	141.75	75.60	31.73	13.50	7.43	
	χ^2	0.194	0.415	0.002	0.019	0.045	
Total		**210**	**112**	**47**	**20**	**11**	**400**

$$\chi^2 = \frac{(O-E)^2}{E}$$

Where;

χ^2 is the chi-square
O is the observed frequency
E is the expected frequency
Chi-square = 2.076, DF =4, P-value =0.722, $\quad \alpha = 0.05$

Decision

The decision is not to reject the null hypothesis. There is not enough evidence to support the claim that a person's age is dependent on the duration on care before defaulting.

Discussion of findings

Level of knowledge of HIV/AIDS positive patients on the medical management of HIV/AIDS

Table 1 shows that 95% of the respondents have knowledge on the medical management of HIV/AIDs, 67.5% got their knowledge/information from health workers, 93.8% believe that knowledge about the medical management is important, 70% accept that the best method is the use of drugs and 96.5% of respondent also agree that the knowledge will improve compliance. This implies

that majority of the respondents have goo level of knowledge on the medical management, information and the use of drug as a means of treatment.

This agree with Rotem, Margalit and Doron (2014); Sukhvinder et al (2014) whose studies on assessment of the knowledge and attitudes regarding HIV/AIDS among pre-clinical medical students in Israel; knowledge and attitude of faculty members working in dental institutions towards the dental treatment of patients with HIV/AIDS respectively showed good level of knowledge among the respondents. Patients knowledge and understanding of the regimen and their belief in it enables a more effective targeting of the potential for adherence problem (Catherine, Janetta and Seter, 2015; Hong et al, 2012). Study by Francois, Brian, Christian and Martie (2015) also find out that patient's beliefs, knowledge and expectations regarding treatment strongly influence their medical decision making.

Misconceptions regarding HIV/AIDS among the HIV positive patients

The table 2 shows that 34% of the respondents have misconception that HIV antibody are not reliable while 29.5% believe that HIV can be dictated by appearance while 22.2% believed that HIV can be cured with use of herbal medicine.

This implies that majority of the respondent have misconception on antibody test and diagnostic measures for HIV. This finding is in agreement with the findings of Haftay, Henock, Mussie and Girmatsion (2014) whose study on knowledge and misconception on HIV/AIDS and associated factors among primary school students within the window of opportunity in Mekelle City, North Ethiopia demonstrated some misconceptions among the respondents including the disbelieve in the diagnosis of HIV.

Misconceptions towards HIV disease and treatment regimens are associated with poor therapeutic outcomes that in turn may be an impediment to achieving optimal levels of adherence (Nalan, 2012; Subrata and Partha, 2011). Misconception about HIV and AIDs arise from several different sources, from simple ignorance and misunderstanding about scientific knowledge regarding HIV infections to misinformation propagated by individuals and groups and this claims several lives annually (Raheel, White, Kadir and Fatmi, 2007).

Contributing factors for poor adherence in medical management of HIV among HIV/AIDS positive patients

Table 3 shows that 44.8% of the respondents said stigma/discrimination made them to go into hiding which results in inability to adhere to the treatment regimen, 30.2% said is forgetfulness. This implies that stigma/discrimination are major contributing factors to poor adherence among the respondents.

This finding is supported by Nazrul, Nazrul, Rocky, and Sabbir (2016); Aliyu,(2014); Adegoke and Zerish (2013); Bello (2011) whose studies demonstrated contributing factors to non-adherence to be multifactorial which included among others, forgetfulness, stigma/discrimination of patients living with HIV/AIDS, lack of transportation to the clinic. According to Sharada, et al (2012); Thomson, Cheti and Reid (2011); Gugulethu (2008), adherence may negatively be affected by HIV associated stigma/discrimination. People living with HIV may fear that taking medication in the presence of others may in adversely disclose their HIV Status, thus deterring them from adequately following the regimens prescribed.

The duration HIV/AIDS patients stay in treatment before defaulting

Table 4 shows that 100% of the respondent's defaults while on drugs, the table further showed that 66.3% of the defaulters was within 1 to 3mouths they started the drug management while 25% was within 4-6months after they resumed the treatment. 52.5% of the defaulters did so for some days, 28% defaulted for some weeks while 11.8% was for some months. This implies that majority of the respondent's defaults while on treatment and it is within 1-3months.

This finding is supported by that of Yoko et al (2017); Malleshappa, Shivaram and Shashikumar (2012); Nsimba, Irunde and Comoro (2010) whose studies found that patients who have been on ART for less than 1 year were more likely to non-adherence. However, no reason was given neither was

there any clear indication for why this case. Patients living with HIV/AIDS who had just started taking ART can easily default due to unexpected reactions of these drugs which the body gets adjusted to after some good time has passed (Asmare, Aychiluhem, Ayana and Jara, 2014; Bernard et al, 2011; Daniel et al, 2008).

Implication for nursing

The nursing implication to these findings is to improve health and quality of life through prevention of poor adherence of people living with HIV/AIDS. This can be implemented by health educating the people living with HIV/AIDS on importance of compliance to medical treatment to discourage them from hiding their feelings and fear while on medication and educate them on the implication of non-compliance. This can be achieved through quality counseling and education from the point of pre and post-test counseling throughout period of being in care.

Conclusion

Findings of this study showed that majority of the respondents have knowledge on the medical management, information and the use of drug as a means of treatment. Most of the respondents accepted that the best method is the use of drugs even as majority also said that the knowledge will improve compliance. Many of the respondents have misconception that HIV antibody tests are not reliable while some believe that HIV can be detected by appearance.

Majority of the respondent's defaults in medical treatment adherence because of stigma/discrimination, and forgetfulness. Most of the defaulters stopped their medication within 1to 3mouths of initiation. It was concluded that there is need for health workers in ART clinics to impact more and adequate knowledge to these clients /patients to improve compliance and dismiss their misconceptions as successful prevention of poor adherence to medical treatment among HIV positive patient will go a long way to promote healthy living. The healthcare workers in ART clinics need to review the quality of counseling given to their clients in the clinic especially from time of enrollment to ensure compliance.

Recommendations

Based on the finding of this research, the researchers make the following recommendations
1. There should be as a matter of urgency intensified public education on the implication of poor adherence in the medical management among HIV positive patients, awareness programmes/campaigns on the need for compliance in the medical management by Government, ART care givers and all concerned.
2. Health Professionals and ART care givers should try as much as they can to make a realistic assessment of patient's knowledge and understanding of the regimen, maintain a clear and effective communication between health professional and their patients and trust in the therapeutic relationship.
3. Policy makers should encourage a supportive environment where people living with HIV do not need to work about stigmatized/discriminated but talk openly in order to facilitate compliance. In addition, patients should also be taught strategies on how to handle taking pills in secret to increase compliance to their medication.

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