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Original Research Article

Socio-demographic Data and Prevalence of HIV/AIDS with Adherence to ART among PLWHIV in Two Health District of Fako Division, SWR, Cameroon

Atanga MBS[1], Akenji JF[2], Atshili, J[3] and Nde FP[3]

[1]Department of Nursing and Midwifery, Faculty of Health Sciences, University of Bamenda, Cameroon.

[2]Cameroon Baptist Convention Health Board

[3]Department of Public Health and Hygiene, Faculty of Health Sciences, University of Buea

***Corresponding Author's E-mail; mbisuh@yahoo.com**

Abstract

Socio demographic factors among others have been found to have a link with adherence to antiretroviral therapy (ART) which remains a challenge to effective management of HIV in resource-limited settings. The distance to health facility has also been identified as not motivating in some circumstances. The study was to identify the prevalence of HIV among different groups and how the data on such factors (age and sex etc) were among the population at the study site. A structured questionnaire was administered to 184 consecutive and consenting patients receiving ART at two treatment centres. Results have demonstrated some variations between respondents' age, sex, level of education, residence, employment status, denomination, monthly income and level of income. Distance has also demonstrated reduction low adherence in resource limited settings. ART adherence was considered as making an effort to take all doses and at appointments dates without defaulting. Results showed variations among socio-demographic groups with regards to adherence. However these findings need to be confirmed with prospective studies using both self-reported and biological methods to measure ART adherence. It is therefore importance to be keener with persons of some socio-demographic parameters than others if HIV/AIDS treatment must accepted by sufferers.

Key words: Adherence, ART, HIV/AIDS, Socio-demographic data

INTRODUCTION

Since the year 2000 there has been a rapid expansion of the availability of anti-retroviral therapy in resource poor countries, through programmes such as the WHO 3x5 initiative, and more people starting on therapy between 2004 and 2009 than in all the preceding years of the HIV and AIDS epidemic (WHO, 2006). The current arsenal of antiretroviral drugs (ARVs) constitutes about twenty drugs belonging to 4 classes defined according to their pharmacological modes of action. The combinations of these drugs have dramatically changed the prognosis of an infection whose natural consequence, is death for over 90% of the patients with chronic infection (McDonnell *et al,* 2006). However, the long-term nature of the disease has further complicated its management. The WHO (2003) observes that, Sub-Saharan Africa is now estimated to have a coverage of 28%, 19% in Asia, whilst in Latin America and the Caribbean there is an overall coverage of 72%. In this context, sustained adherence is an essential tool of the long-term efficiency of ARVs therapy.

The World Health Organization (2007) defines adherence as taking doses of drugs and sticking to the treatment plan. It means taking the correct dose of drugs at the correct time and in the correct way (such as with the right type of food or fluid). In the United States, according to Morbidity Mortality Weekly Report (2007), significant decreases in the rates of AIDS-related morbidity and mortality have been directly attributable to

treatments involving antiretroviral regimens (MMWR, 2007).

Also the Centers for Disease Control and Prevention reports that the decrease in the number of deaths due to AIDS has been slowing; the number of deaths decreased by 42% from 1996 to 1997, but the decrease was only 20% from 1997 to 1998 (CDC HIV/AIDS Surveillance Report,2008).

According to the DHS III (2004), the average prevalence of HIV in Cameroon has risen dramatically during the last two decades, from 0.5% in the early 1990s to 5.5% in 2004. In view of the severe socio-economic and developmental impact of the epidemic, the government of Cameroon made the fight against HIV/AIDS a priority area in its 2000-2010 strategic plans to combat poverty (Rougemont *et al.,* 2009).

Although the cost of drugs has gone through several phases of reduction since a pilot antiretroviral drug delivery programme which started in 2000, the implementation of a national decentralization programme for HIV care in 2006 led to existing health infrastructures being overwhelmed by a huge demand for treatment (MPH, 2008). This situation was further compounded as free treatment became available in May 2007. So far, an estimated 543 000 Cameroonians are living with HIV. Among them, 164 000 are eligible for antiretroviral treatment and the number of patients on ARVs increased from 17 156 in 2005 to 75 900 in late 2009 (Rougemont *et al.,* 2009). .

Strong adherence remains the only method to maintaining this impressive, though not optimal, performance. However, adherence wanes over time, learned behaviors change over time and long-term adverse effects can lead to non-adherence (Slee *et al.,* 2008). So non-adherence remains a major concern as the ART programs scale up and as more patients are expected to remain on this life-long therapy, this necessitates the need for the development of additional interventions to maintain optimal adherence

Several studies in Africa, Western Europe and America have Identified factors associated with poor adherence which include: socio – demographic characteristics, depression, active alcohol or drug use, low literacy, lack of social support , lack of support from a partner , more advanced HIV infection, age, distance, lack of belief in treatment efficacy , unstable housing, competing priorities like housing, childcare, food, work (Mills *et al.,* 2006).

Statement of Problem

Adherence to antiretroviral therapy for patients with human immunodeficiency virus (HIV) is important to obtain a successful treatment, increase quality of life and to decrease drug resistance development in patients. Unfortunately, non-adherence is common among individuals treated with Highly Active Anti Retroviral Therapy (HAART) (Chesney *et al.,* 2000). It is true that less than perfect levels of adherence-70%–80% are considered adequate to achieve treatment goals for other chronic diseases like hypertension and diabetes. However, In the case of ART, near perfect adherence (adherence levels greater than 95%) is required to obtain a successful treatment outcome.

In Cameroon a study to measure adherence rate to ART among persons living with HIV (PLWHIV) by Laurent *et al.,* (2004) shows an adherent proportion of 0.87 (52/60) among subjects included in the study. The Ministry of Public Health progress report on HIV and AIDS in April 2008 shows less than perfect level adherence for both sexes in all regions. The GTZ (2010), in a situational analysis of the care of PLWHIV in four health districts (Limbe, Muyuka, Tombel and Tiko) of the South West region found out that of the 4,468 persons on ARVs between 2008 and 2010 in these health districts, only 3556 were adherent giving an adherence rate of 79.6%. It was further observed that lower levels of adherence to ART was common at treatment sites in communities with no support groups which could be divided into socio-demographic data which appears to have a strong bearing on adherence.

Specific objectives

- To describe the socio-demographic and economic profile of PLWHIV on ART in Buea and Tiko Health Districts,
- To compare levels of adherence to ARVs among PLWHIV on ART in different socio-demographic groups in Buea and Tiko health Districts.
- To ascertain the role of distance to health facility and adherence to ART in the Buea and Tiko health Districts.

Research Method and Materials

The study took place at both facility and community level in two health districts (Buea and Tiko,) of the South west region of Cameroon. According to report by the (Regional Delegation for Public Health, South West (RDPHSW), the major public health problems in the Region are Malaria, HIV/AIDS, low EPI coverage and recently an unprecedented epidemic of cholera.

The research was an observational study that used the cross sectional design. It employed the quantitative method with a review of Care and treatment registers from where information on patients refill visits and other clinical characteristics were gotten. A structured questionnaire was also administered to collect information on socio-demographic variables, and self-reported adherence, hence the use of both primary and secondary data. The questionnaire was the instrument administered to a total number of 206 PLWHIV on ART in

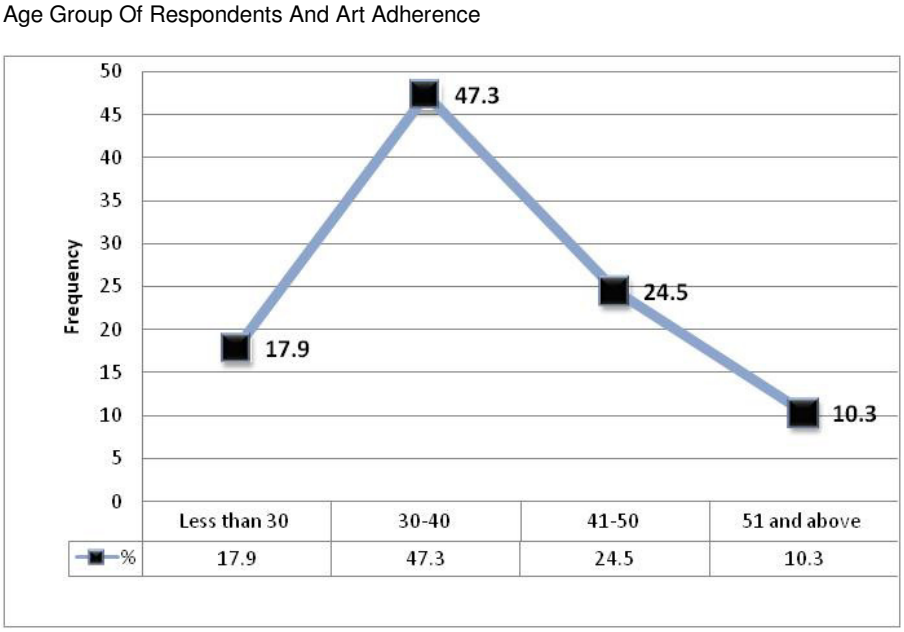

Figure 1. Distribution of respondents by Age groups

the two treatment centers. However to avoid coercion, not all respondents provided responses for all the items on the questionnaire which contained 30 questions with both open and closed-ended.

For confidentiality reasons, staff at various treatment sites were trained and used for identifying study participants. They obtained the consent of each participant and introduced the researcher to those who gave their consent for administration of the questionnaire.

Two methods were used to measure ART adherence-Refill appointments and self report. With the refill appointment method, the researcher reviewed the care and treatment registers to get the number of missed appointments (V19) of the 12 refill appointments the client had in the past 12 months. A client was considered adherent if he/she met at least 11 refill appointments or more giving and adherence rate of 92%. Then a 30 days self report recall was done (V27) and clients who had missed 3 or less doses of the 60 doses they were due for the past 30 days were considered to have adequately adhered giving a rate of 95% and above. Adherence was determined using stata IF command by assigning into a new variable the category adherent if a respondent was adherent in both methods used (V19 and V27).

In describing the socio-demographic and economic profile of PLWHIV on ART in SW region, for numeric variables such as age, sex, income among others, measures of central tendencies like the mean and the median were used. For categorical data, frequencies were computed.

For other ethical issues, due care was taken to ensure that all those who accept to participate in the study do so voluntarily, and give their informed consent. Hospital staff at the selected HIV treatment units who participated in the study recruited PLWHIV on ARVs for participation. To this end, the researcher explained to the people the aims and objectives of the study. Those who agree to participate were given a chance to ask for any clarification about points on which they were not clear. They were told that any information collected during the course of the study was kept confidential and that research documents would not contain personal names, instead identification numbers were used.

RESULTS

Socioeconomic and Demographic Characteristics of PLWHIV on ART at study sites

The ages of the study participants ranged from 21 to 62 with the modal age group being 30-40 years (47.3%) which is both the productive and reproductive age group. Respondents between 41 and 50 years were 24.5%, 17.9% of all respondents were between 20-30 years while just 10.3% of the respondents were above 50 years. The age group (21- 40 years) is the most affected, as this trend is logical. Adherence to ART was highest in the older age groups 41-50 (73.3%) and 51 and above (63.2%) compared to the smallest age bracket Less than 30 (60.6%). Despite this trend, data provides no evidence of statistical significant difference between respondents age and ART adherence ($\chi 2$ =1.5522, p-value=0.67).

A significant proportion (73%) of the respondents was females. It was observed that in every hospital visit,

Distribution of Respondents by Sex

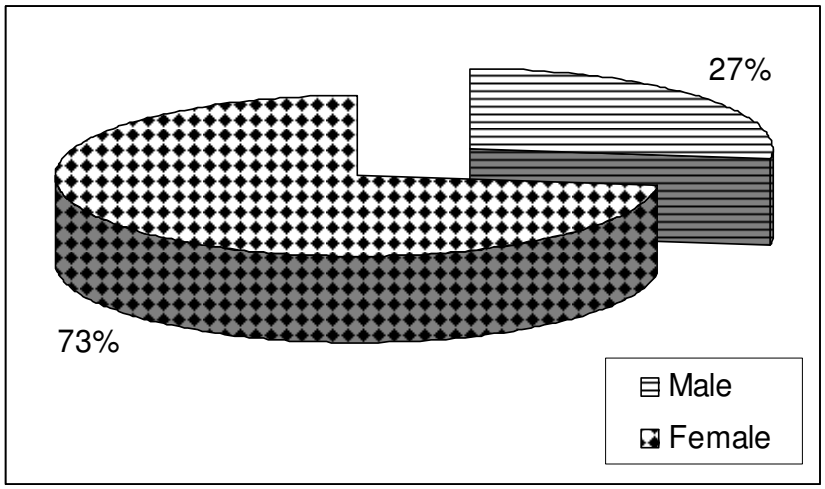

Figure 2. Distribution of respondents by Sex

Table 1. Distribution of respondents by level of education

Level of Education	Responses	
	N^{o}	%
Primary	85	46.2
Secondary	47	25.5
Higher	37	20.1
Uneducated	15	8.2
Total	184	100.0

although females were many compared to males, males were not willing to participate in the study hence the great difference between males and females who participated in the study. Only 27% of participants were male. A cross tabulation of this variable and the outcome shows that 72% of males adhered to ART while 64.9% of females adequately adhered. There was no evidence of a statistically significant relationship between Sex of PLWHIV and ART adherence (X^2=0.5341, P-value=0.36).

Distribution of Respondents by Level of Education

Table 1 and shows that a majority (46.2%) of PLWHIV on ART receiving treatment at study sites have attained primary level of education, 8.2% have never been to school while 25.5% have received secondary level education. The higher educational level records 20.1%. This means that the PLWHIV seeking care at the selected health institutions are averagely literate. Adherence ART was high amongst the uneducated (80%), those who had attained secondary education (76.6%) and low amongst those with higher(70.3%) and primary (57.6%) education. However, the study found no association between the level of education of the PLWHIV on ART and adherence (X^2=6.63, P-value=0.08)).

A majority (40.7%) of respondents were married-Monogamy (36.4%) and Polygamy (4.3%). 30,4% were single, 17.9% were widow(er)s, 6.5% concubines and 4.3% had divorced or separated. This finding showed that majority of respondents were either widowed, single or divorced (Figure 4). ART adherence was highest amongst concubines (83.3%) and lowest for widow(er)s. Chi-square statistic revealed no significant relationship between marital status of respondent and adherence to ARV treatment (χ^2 =0.12, P-Value =0.74).

Distribution of Respondents by Place of Residence

On Table 2, we notice that a greater proportion (54.9%) of the study participants live in urban areas while 45.1% live in the rural parts of the two health districts. This trend may be due to the fact that the HIV treatment centers from where participants were selected are located in towns as such easily accessed by urban dwellers. 70.3% of urban dwellers adhered to ART while 62.7% adhered among rural dwellers. However, the data provides no evidence of a significant relationship between place of residence and ART adherence (X^2=0.88, p-value =0.27)

Distribution of PLWHIV According to their Marital Status

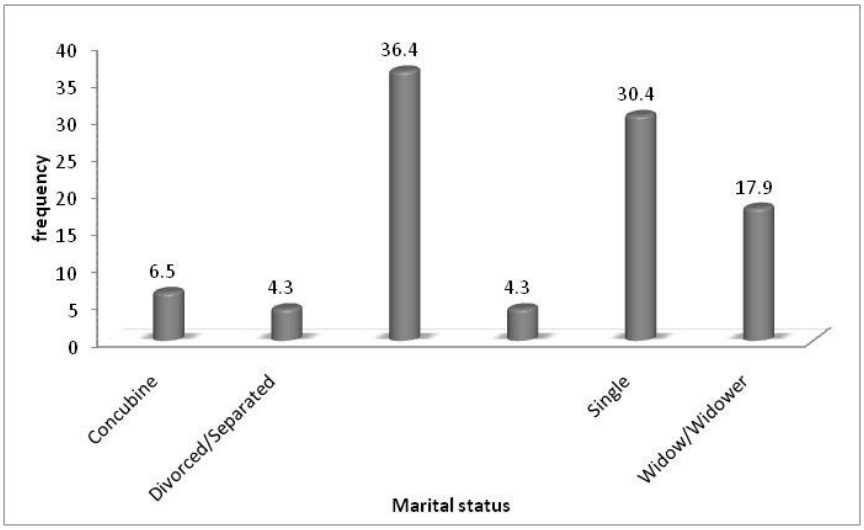

Figure 3. Distribution of respondents by marital status

Table 2. Distribution of respondents by place of residence. N=184

	Responses	
Residence	**N°**	**%**
Urban	101	54.9
Rural	83	45.1
Total	184	100.0

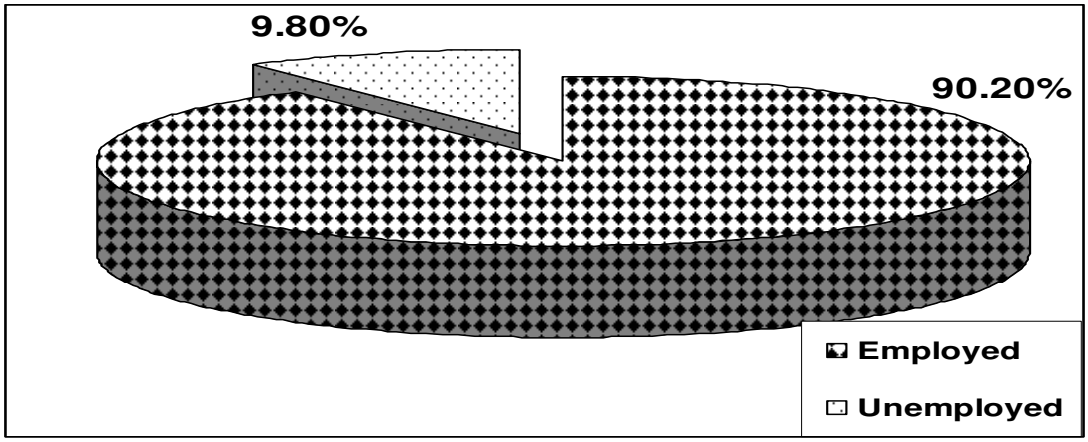

Figure 4. Distribution of respondents by employment status

Distribution of Respondents by Employment Status

Ninety point two percent (90.2%) of the respondents were employed and just 9.8% were not. This finding show that majority of respondents were employed.

Findings presented on figure 4 shows that a majority (90%) of the study participants was employed and just 9.8% were not employed. Disaggregating this data by the

Table 3. istribution of respondents by denomination. N=183

Denomination of PLWHIV	Responses	
	N°	%
Pentecostal	54	29.5
Presbyterian	54	29.5
Catholic	50	27.3
Baptist	24	13.1
Muslim	1	0.5
Total	183	100.0

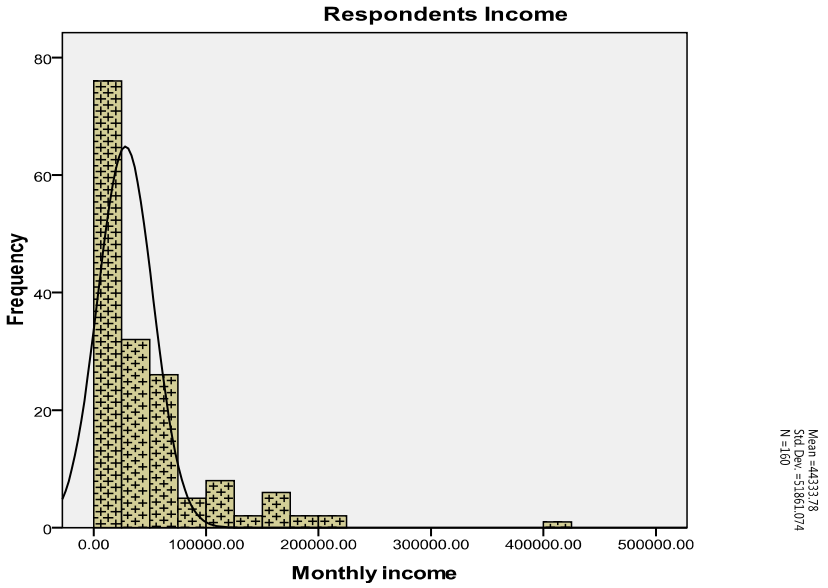

Figure 5. Distribution of respondents according to their estimated monthly income

outcome variable suggests that ART adherence is higher amongst PLWHIV who are employed (67.3%) compared to those who are unemployed (61.5%). However, data does not support the fact that employment status influence ART adherences (X^2= 0.29, P-value= 0.58).

Distribution of Respondents by Denomination

Twenty nine point five percent (29.5%) of respondents are Pentecostal Christians and an equal proportion is Presbyterians. 27.3% of PLWHIV on ART are Catholics while 13.1% are Baptist 22.5%. This implies that 95.5% of all respondents were Christians and just 0.5% was non-Christians.

Distribution of Respondents by Income (one US dollar equals to five hundred FCFA)

Respondents estimated monthly income range between 0 and 400,000 FRS with a mean income of 44,333.8 frs and a standard deviation of 51,861.1 frs. The median income is 25000 FRS and the modal income is 20,000 frs. However, given that data for this variable is skewed to the right, the median is the most appropriate measure of central distribution to describe this variable. A further break down of this variable into low (below 50,000 FRS) and high and 50,00frs and above) reveals that most of adult PLWHIV on ART in Buea and Tiko health district are low income earners income levels.

Breaking down data on Monthly income by the outcome shows that 69.7% of respondents with income 50,000 and above adhered to ART while 64.8% of those with income below 50,000 adhered to ART. Despite this trend, the data provides no evidence of a significant difference in ART adherence between the two levels of income (x2=0.48, P-value=0.48).

Distribution of Respondents Based on Distance Covered to Health Facility

From the table above, it is evident that a majority (87.3%)

Table 4. Distribution of respondents by income level

Income level of Respondents	Responses	
	N°	%
Low income	108	58.7
High income	76	41.3
Total	160	100.0

Table 5. Distribution of respondents by Distance covered to health facility

Number of children	Responses	
	N°	%
Less than 30 km	154	83.7
30Km and above	30	16.3
Total	184	100.0

Table 6. General distribution of respondents by adherence to ART

ART Adherence	Responses	
	N°	%
Adherent	123	66.8
Non Adherent	61	33.2
Total	184	100.0

of the respondents live within a 30 km radius from their treatment units. Disaggregating this by ART adherence it is shown that 68.8% of respondents who live less than 30 km to the treatment center adhered to their treatment. Amongst all those who were further away from the health facility (30km and above) 56.7% adhered to ART. However, the data provides no evidence of a statistically significant difference between the two groups (X^2 =1.6674, P-value=0.27)

Art Adherence: Proportion of PLWHIV on ART who Adhere to Treatment

Table 6 shows that 66.8% of the respondents from all the socio-economic and demographic groups adequately adhered to their treatment after checking medication intake and meeting up with appointments using both methods. Thirty three point two percent (33.2%) did not adequately adhere to their treatment.

DISCUSSION

People living with HIV (PLWHIV) on ART in Buea and Tiko Health districts cut across varied socio-demographic and economic characteristics including Age, Sex, Level of Educational, Employment status, Religion, Marital status, Income level, and Distance to Health Facility. The data presented on the tables and figures show the proportions of the socio-economic and demographic representations. Age for instance shows that a greater proportion (47.3%) of study participants was in the age group 30-40 years demonstrating that adults more than adolescents and older people will adhere to treatment. People at this age usually married and are beginning to enjoy a new life that they would not want to lose to HIV/AIDS. A majority (73%) of the respondents were female as they are often at health facility with pregnancies or with babies and are often aware of the problems their children will face should they die young. Seventy one point two (71.2 %) of respondents had attained at least secondary education and so must have learnt about HIV/AIDS and the role of medication in the prolongation of life- the probably reason to the 66.8 % adherence in general. Because of the plantations (personal and corporation owned), the employment rate is high with 90.2 % employed though with more low income levels (58.7%). Majority lived in rural than urban areas despite that the two study sites were both urban demonstrating why the majority had only primary education. Since rural dwellers believe in marriage, majority of the respondents were married, but surprisingly they were monogamously married. Surprisingly because the study is made up of plantation workers who would want to polygamous married to increase the work force on their plantation. However, the study sites were some of the areas that were first visited by Europeans and American who are predominantly monogamists. The low income levels and long distances to the treatment sites must be implicated in the 33.2% who were generally found not to adhere to ART at the study sites because 30 kilometers (found to be the

nearest) is not the recommended distance following the implementation of Primary Health Care as far back as 1978. The religious implications from this study were considered under denomination because majority of the total population of the area is Christian. The results may be representative of the total numbers of the population in the various denominations not necessarily that majority of HIV/AIDS victims at the study site were from the Pentecostal and Presbyterian denominations with 29.5 % each, while the Catholics and Baptists were 27.3 % and 13.1 % respectively. The Muslim community is very small and shows on the data with 0.5 %. Generally, these results can be used as baseline for further investigations on parameters that favour ART adherence among these socio-economic and demographic parameters.

CONCLUSION

The socioeconomic and demographic factors have been found to play a role in adherence to treatment on PLWHIV in the study area as people in the age range of 30-40 years, women than men, and educational levels have demonstrated adherence more than others. Furthermore, marriage and employment will also enhance adherence. Income level, though low together with long distances will not stop respondents from adherence.

Generally, the adherence to ART is low compared to expected figures but is above 50 % in the study population.

RECOMMENDATIONS

1. More education of adolescents in schools should be made on the advantages of adherence to treatment should the disease be contracted.
2. Women should be encouraged to men where possible to adhere to their ART treatment
3. Younger people tested positive should be persuaded to adhere to their various treatment regimen in order to increase their life span
4. Telephone messages should be used by health care providers in reminding PLWHIV to take their treatment.
5. Health education in churches should be instituted particularly in denominations with high rates of no adherence to ART treatment.

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