

FACTORS THAT AFFECT ADHERENCE TO ANTIRETROVIRAL THERAPY IN KASAMA DISTRICT

(Conference ID: CFP/967/2018)

Author: Patrick Mzyece

Information and Communication University,

Lusaka – Zambia

patrick.mzyece@gmail.com

Abstract

This article examines the determinant factors affecting adherence to antiretroviral therapy among HIV infected patients in Kasama District in Zambia. A cross-sectional study design was used and data were collected by interviewing 200 study participants from four health facilities using structured questionnaire. The research finding revealed 82.0% of the study participants had optimal combined adherence to dose, schedule and dietary instructions in the past three days. The non-adherence rate was 21.0%. In multivariate analysis only WHO clinical stage, change of ARV medication, knowledge about HIV disease and ART, and use of reminders were found to be independently associated with adherence to antiretroviral therapy. The most common reasons for missing HIV medications in the past one month were forgetfulness (36.19%), lack of family support system (40%), effects of medication (43.33%), ignorance (10%) and running out of pills (10.5%). Adherence improving interventions should be emphasized to address multi-faceted problems. This study recommends setting of convenient appointment schedule, disclosure of one's HIV status, maintaining confidentiality of

patient-related information, enhancing patient-

provider relationship, use of reminders including SMS text messages, and engagement of PLHIV in adherence improving interventions through peer support, and providing regular health education to the PLHIV to improve adherence of patients to ART.

Keywords: HIV/AIDS, ARVs, PLHIV, Kasama

Introduction

The emergence of the HIV epidemic is one of the biggest public health challenges the world has ever seen in recent history. In the last three decades HIV has spread rapidly and affected all sectors of society: young people and adults, men and women, and the rich and the poor (Fouche, 2005). Globally, a total of 35.3 million people were estimated to be living with HIV in 2012. This increase was partly related from the increased number of people receiving life-saving antiretroviral therapy (WHO, 2015).

Due to rapid row out of antiretroviral therapy treatment the rate of new HIV infection and

AIDS related deaths has declined in Zambia. In 2015, around 50,000 adults and 8,900 children became newly infected with HIV in Zambia. New infections are decreasing, especially in children in 2010, 60,000 adults and 13,000 children acquired HIV. Contrastingly HIV prevalence in Zambia has made little progress in the last decade with records marking a 12.8% adult prevalence in 2007 compared to a 12.4% prevalence rate in 2016 (UNAIDS, 2016).

In 2016, Zambia had 59 000 new HIV infections and 21 000 AIDS-related deaths. There were 1 200 000 people living with HIV in 2016, among whom 65% were accessing antiretroviral therapy. Among people living with HIV, approximately 58% had suppressed viral loads. From 2010, new HIV infections have decreased by 27% and AIDS-related deaths have decreased by 11% due to antiretroviral therapy (UNAIDS, 2017).

Adherence to antiretroviral therapy (ART) is of critical importance because even minor deviations from the prescribed regimen can result in viral resistance (Boller, 2003). Studies of ART continue to indicate that a near-perfect adherence is required to adequately repress viral replication <1000 copies per mil (Amiko, 2009).

Free antiretroviral treatment has been provided to people living with HIV in many of the health facilities in Zambia. The number of patients receiving ART has remarkably increased from time to time with rapid scale up of ART program throughout the country. It has been emphasized that for patients on antiretroviral therapy to benefit maximally at least 95% of adherence to their prescribed medications needs

to be achieved. This indicates that adherence of patients is very crucial element in the scale up and implementation of ART program in resource limited settings like Zambia. In a routine clinical practice of ART clinics in Kasama maintaining high level of adherence to antiretroviral treatment has been a challenge to health care providers as well as the ART program. Besides, in many areas of the country the number of lost to follow up patients is high in the health facilities and it is commonly observed that patients do not adhere to their prescribed antiretroviral medications for different reasons.

According to the report of FHAPCO, the total number of ever started clients on antiretroviral treatment had reached to 52,585 in Addis Ababa by the end of February 2010. Among these 32,279 clients were found be currently receiving antiretroviral treatment (Monthly HIV care and ART update 2010). The level of adherence to antiretroviral therapy of HIV infected patients and determinant factors affecting their adherence have not been well studied in health facilities in Addis Ababa.

The WHO (2006:78) states that adherence to ART has been recognized as an essential component of individual and programmatic treatment success. Higher level of adherence greater than 95% is necessary to get the best outcome out of antiretroviral treatment. Studies on drug adherence in the developed world demonstrated that higher levels of drug adherence are associated with improved virological, immunological and clinical outcomes. Adherence to antiretroviral therapy has also been documented as the second strongest predictor of progression to AIDS and death, after CD4 count in PLHIV receiving

treatment (Machtinger & Bangsberg 2006). Nonetheless, adherence creates a special challenge and requires commitment from the patient and the health care team since HIV treatment is a lifelong endeavour and patients may be initiated on treatment while they are healthy and even they get better with treatment

Methods

Research design

Health institution-based facility cross sectional study was conducted. The population includes all people living with HIV/AIDS (PLWHA) who registered ART attending ART clinic in during the study period.

Sample selection

Systematic sampling technique was used to select the participants using the ordered list of patients on ART based on their unique ART identification numbers which was generated from computer data base.

Selection criteria

Adult people (15+) who were HIV positive and registered for ART follow up at ART clinic to take medication during data collection were included while patients who were critically ill and those below 15 years were excluded from the study.

Sample size

Size 200 was determined using single population proportion formula by considering 50% proportion, 95% confidence level and 0.05 margin of error. After calculating for population correction and adding 10% for non-response.

Ethical issues

Participation was voluntary, information was kept confidential and all respondents had to sign confidentiality binding form.

Data analysis

A questionnaire was used to collect data and Excel / SPSS was used to analyze the data.

Study validity

The same questionnaire was used for all respondent and piloting was conducted to ensure internal validity was observed and findings were generalized within Kasama District as form of external validity.

Variables for this study: continuous variables include duration of client on ART and categorical variables include marital status and benefits of adherence to ART.

Reliability

Same questions were asked and probing was discouraged to avoid interview bias.

Ethical consideration

Permission to conduct study was obtained from the Ethics and Research Committee of ICU and the DHD for Kasama District (Dr. Zulu). All data management processes were handled electronically and secured to ensure utmost confidentiality.

Limitations of the study

This study was carried out in the face of some limitations. The research findings should be interpreted taking the following limitations into consideration.

□ This study was conducted in only four health facilities in Kasama District. This means the study findings cannot be generalized to other parts of the country. Thus, larger representative health facilities across the country should be

involved to get a general picture of adherence prevalence in the country.

□ The adherence of patients in this study was assessed with a self-report method. Since there is no goal standard adherence measurement, self-report has been a valid measure of adherence. However, self-report measure has widely been known for its subjectivity and for overestimating adherence of patients. Besides, self-report measure of adherence has been subjected to recall bias and social desirability bias.

□ Another limitation which may reinforce social desirability bias is the fact that the study was conducted in health facility settings where patients may tend to provide positive responses on their adherence behaviour, patient-provider interaction, and aspects of clinic settings.

Results

Age distribution

More females participated in the study compared to men from 200 respondents. In percentage, 64% females and 36% males. Adolescents of all relevant age were included in the study. The highest participation in all age groups and based on gender was n = 66 (33%) 25-29; while the least was 15-19 1% (n=2).

See Table 1.1 below

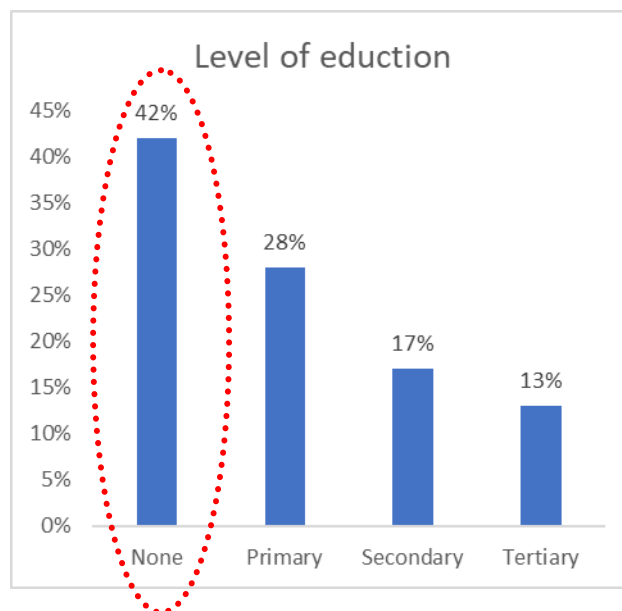
Age	Males	Female	Total
15-19	1	1	2 (1%)
20-24	4	5	9 (4.5%)
25-29	25	41	66 (33%)
30-34	14	26	40 (20%)
35-39	12	20	20 (16%)
40-44	9	23	32 (16%)
45-49	5	10	15 (7.5%)
50+	2	2	4 (2%)
Total	72 (36%)	128 (64%)	200 (100%)

Marital status

The study findings indicate that 88.30% of the 188 respondents who answered this question were either married or have a sexual partner. From this percentage, 32.43% confirmed their partners to be negative and 64.86 % confirmed their partners were HIV positive and 2.70% did not know the status of their partner.

Level of education and employment

42% of the participants (n=192) never attended school. 28% (n=54) went up to primary level of education. 17% up to secondary, while only 13% tertiary. From these statistics lack of knowledge can be a contributing factor to poor adherence. See Figure 1.1



Level of income

The study findings reveal that the majority (70.97 %) of the 200 respondents were poor and earned less than K1000 per month. However, 22.45 percent of the respondents (n=45), who were mainly civil servants and small traders earned between K3000 to K5000 per month.

73.4% (n=147) stay over 4KM from the Health Facility and used bicycles as a major form of transport as many could not afford the costs of transport and nutritious diet which is important for a successful adherence program.

Disclosure of HIV status to others

From 100 respondents, the study findings indicate that 14.1% PLWHAs (n=14) were directly stigmatized by their family and friends which hindered their adherence to ART. The findings also suggest that adherence support was not possible under circumstances where PLWHA were discriminated against by their close relatives. Also 4% (n=4) of PLWHA subjected themselves to self-stigma. This makes patients to skip treatment due to failure to disclose.

Support system

At least 33.3% of the participants stated that they attended the clinics alone, and another 40% stated that, if they were unable to attend the clinic, they had no one to assist them with collecting the ARVs at the clinic. They then had to miss out on the prescribed doses until they were themselves once more able to visit the clinic. The rest of the participants felt generally supported by their relatives.

Feelings regarding the taking of ARVs

Majority of participants (86.60%) reported that they had accepted being informed of their HIV-positive status, and were comfortable taking ARVs. Below are some case narratives:

One participant stated: “I am feeling fine, because if I did not come to the clinic to take ARVs, I could not [be] living as I am now.” (Joseph, 26 years: Chisanga Urban)

Another participant said: “The reason why I was given this medication was because I was coughing too much. Now I am feeling better, and I like them.”

(Mary, 32 years: Kasama General Hospital)

Medication side-effects

43.33% of the participants reported side effects such as skin rashes, headaches, nausea, vomiting and dizziness. Concerned participants were supposed to attend the health facility immediately after stopping their medication but had to wait until they had transport money.

Knowledge regarding HIV/AIDS and the taking of ARVs

Despite the finding that the participants in the study tended to be well-informed about HIV/AIDS and ARVs, 10% of them declared during the interview that they knew nothing about ARVs, whereas another 10% of the participants stated they will be cured and will stop taking ARVs.

Interaction between patient and health care providers

Furthermore, from the findings of the study 10% of the participants declared that they were not comfortable with their health care provider's attitude towards them and waiting time but majority 90% stated that they were both satisfied.

Medication interaction with lifestyle and social habit

Participants indicated that they appreciated their medication for helping to maintain their wellness and survival. However, 3.33% of the participants declared that the time to take this medication was not practical as it collided with

the time to go to work or school. Others lifestyle such as drinking beer.

Discussion

The study intended to identify factors influencing adherence to ART treatment among adult PLHIV on treatment, in order to advise for appropriate strategies to improve adherence. In this study 36.19% of the respondents had poor adherence (less than 95%) which is lower than WHO recommendation which was 95% or more and study done on the levels of adherence required for virologic suppression (WHO, 2016).

In this study, factors like side effects of medication, family support system, feeling about taking ARVs, educational status, substance use and occupation had significant association with the level of adherence whilst sex, age, marital status and distance from the hospital had no significant association. This finding is slightly different from study done in University of Gondar Hospital in which age, disclosure of the HIV status, and knowledge of caregivers about ART medication, were independently significantly associated with adherence (Fain, 2009).

According to a study done in Debrebrihan Referral Hospital indicates that factors such as having emotional support positively encouraged ART adherence (Denis, 1995).

This study shows that 80 (36.19%) of the respondents missed at least two doses of ART medication and 34 (42.50%) of these missed greater than three doses this finding is different from the finding of study conducted in Debrebrihan Referral Hospital of Nigeria which shows 95.5% of the respondents took their ART treatment without missing doses (Remien, 2010).

Our study identified that 31 (14.03%) of the respondents complain the blame rejection of families and friends and 81 (36.65%) fear of stigma and discrimination of the society. This finding is somewhat similar with a meta-analysis which shows those patients' beliefs regarding HIV can positively or negatively affect treatment. Poor knowledge of HIV and benefits of ART has been associated with nonadherence to ART (WHO, 2004).

Barriers encountered to adherence to ART regimen

Factors such as distance from the health facility and feelings regarding the taking of ARVs, were found to affect the rate of adherence negatively. However, contrary to common expectations, participants with a good level of knowledge and those not experiencing side-effects seemed to be less adherent to their prescribed treatment. Due to the distance to the health facilities and the waiting time that the participants were required to spend there. Also, appointment interfered with their social habits, like work, school and drinking beer.

Conclusion

Generally, the level of adherence reported in this study was 80%, which is relatively high and supports the existing evidence that patients in resource-constrained settings could achieve better adherence. But, it also highlights the need to give attention to adherence of patients as 20% of the study participants reported suboptimal adherence. A number of factors that could affect adherence were analysed. Some of these factors, including WHO clinical stage, change of medication, and experience of illness in the past one month were associated with adherence of patients to ART. 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 missing clinic appointments were found to be significantly associated with adherence to antiretroviral therapy. Forgetfulness, being busy with other things, and running out of medication pills were identified as the most common reasons for the patients to miss their HIV medications. Thus, appropriate recommendations are made in the subsequent

section to address such multiple barriers across different dimensions.

Acknowledgements

Special thanks go to the University of Information and Communication, School of Humanities and Social Sciences and Project Planning Management Unit staff for the guidance during the research design, analysis and writing of this research paper. The Sinda District Health Office for giving permission to obtain and use the 2017 DHIS data set. All the supervisors and mentors for their support and guidance throughout the research.

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AUTHOR'S BIOGRAPHY



Mr. Patrick M. Mzyece is currently the Provincial Monitoring and Evaluation Coordinator at USAID (Right to care, EQUIP Project) in Zambia. He has 10 years' experience in HIV/AIDS health programming having worked for Center for Disease Research in Zambia (CIDRZ) as Provincial Monitoring and Evaluation / Data Coordinator and at Center for Disease Control and Prevention (CDC) as Data Specialist. He holds a Bachelor of Arts in Development Studies Degree from Zambian Open University, Diploma in Computer Studies from Evelyn Hone College. His main research interests include HIV/AIDS, Reproductive Health, Education, Sexuality and Contemporary Issues