**A STUDY TO DETERMINE FACTORS ASSOCIATED WITH NON-ADHERANCE TO SCHEDULED MEDICAL FOLLOW UP APPOINTMENTS AMONG HIV PATIENTS IN UASIN GISHU COUNTY, MOIBEN SUB COUNTY, CHEPKOILEL LOCATION. IN THE MONTH OF DECEMBER 2019**

**By**

**SIMON KIBET**

**H132/0533/2016s**

**A research dissertation submitted to the department of public health, school of health sciences in the partial fulfillment for the award of Bachelor of Science (public health)**

# Declaration

I hereby declare that this thesis is original except for source material explicitly acknowledged and this piece of work or part of the piece of work has not been submitted for more than one purpose. This assignment is in accordance with the university guidance on good academic conduct. There is no assistance of any other person except those permitted with the university or specific assessment guidelines for the piece of work thereby no irregularity in any means whatsoever.

Student name; SIMON KIBET

Student no: H132/0533/2016s

Signature……………………. Date………………………….

Lecturer: MADAM ANITTA OTTARO

Signature …………………… Date …………………………

# Dedication

With gratitude and greatness, I would like to dedicate this piece of work to my parents who made necessary efforts for their endless support both financially and in kind. Also cohorts in the field and policy makers too. Nevertheless, the lectures who contributed both directly or indirectly. God bless all.

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# ACRONYMS AND ABBREVIATIONs

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| --- | --- |
| **AIDS -** | Acquired Immune Deficiency Syndrome |
| **ART -** | Anti-retroviral Therapy |
| **ARV -** | Anti- retroviral |
| **CCC -** | Comprehensive Care Clinic |
| **CD4+** | Cluster of Differentiation 4 |
| **DAART** - | Directly Administered Antiretroviral Therapy |
| **FDC -** | Fixed Dose Combination |
| **HAART -** | Highly Active Anti-retroviral Therapy |
| **HIV** - | Human Immuno-Deficiency Virus |
| **KDHS -** | Kenya Demographic Health Survey |
| **MoH-** | Ministry of Health |
| **MTCT -** | Mother to Child Transmission |
| **NGO -** | Non-Governmental Organization |
|  |  |
| **PI -** | Protease Inhibitor |
| **PLWHA -** | People Living With HIV and AIDS |
| **PMTCT** - | Prevention of Mother to Child Transmission |
| **TB** - | Tuberculosis |
| **UNAID -** | United Nations Agency for International Development |
| **USAID -** | United States Agency for International Development |
| **UVLD**- | Undetectable viral load |
| **VCT -** | Voluntary Counseling and Testing |
| **WHO -** | World Health Organization |
| **WRP -** | Walter Reeds Project’s |

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# DEFINTION OF TERMS

|  |  |  |
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| **Adherence** |  | Adherence to ART is taking all ARV pills in the correctly prescribed doses at the right time and in the right way observing any dietary restriction. |
| **Age** |  | This refers to the number of years that an individual has lived since date of birth. |
| **HIV** |  | This refers to a progressive immune deficiency caused by infection of CD4+ T cells with the human Immunodeficiency virus (HIV). |
| **CD4+** |  | This refers to an antigen maker of helper/inducer T cell that recognizes antigens bound in class II MHC protein. |
| **Co-treatment** |  | Treatment of two or more infections simultaneously. |
| **Incidence** |  | The incidence of a disease is defined as the number of new cases that occur during a specified period of time in a population at risk for developing the disease. |
| **Optimal Adherence** | | Proportion of those who take their medication 2: 95% of the time |
| **Sub-optimal Adherence** | | Proportion of those who take their medication <95% of the time |
| **Prevalence** | | This refers to the number of affected persons present in the population at a specific time divided by the number of person in the population at that time. |
| **Undetectable viral load** | | When the virus is not detected in the blood after a laboratory test. |
| **Viral Load** | | Levels of virus found in the blood per 10 milliliters (mills/copies). |

# ABSTRACT

An antiretroviral therapy (ART) adherence of at least 95% has been proven necessary in order for treatment to be effective. Failure to meet this level results in poor immunological and virological outcomes. The objective of the study is to determine factors influencing non-

adherence to Antiretroviral therapy among HIV and AIDS patients visiting Chepkoilel sub location Hospital.Descreptive Cross sectional study was carried out at Chepkoilel location Hospital in Uasin Gishu county Kenya in December 2019. Patients in comprehensive care clinic meeting the inclusion criteria were selected using simple random sampling method. Both qualitative and quantitative methods of data collection was utilized, where structured questionnaire with open and closed type questions with an approximate number of participants will be selected using fishers *et-al* method. Key informant interviews for health care providers was conducted. Data was analyzed using SPSS software version 22. Data was presented using charts, graphs and frequency tables. Level of adherence was sub-optimal (83%). Taking ARV drugs without eating any food make patients suffer from side effects thus making them avoid taking the medication. Poverty contributes to lack of food. Stigma, negative perception, lack of family and community support is some obstacles to ART adherence. Long travel and distance to hospital for ART and poor weather is barrier to accessibility of ART during such rainy seasons hence a major hinder to optimal adherence. This study is set to be useful to other scholars doing studies in this area and for planning interventions and effective strategies for maximizing long-term adherence to ART for successful treatment of HIV and AIDS

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# 1.0 CHAPTER ONE: INRODUCTION.

## **1.1 Background information**

## **1.1.2 HIV and AIDS situation in the world**

The global commitment to control the effects of HIV and AIDS is being undermined by the

high speed at which the virus is increasingly spreading. approximately 78 million people worldwide have been infected with the HIV virus. Many of these people are in the developing nations with Sub-Saharan Africa bearing the greatest burden.

ART - Comprises administration of ARV drugs, counselling, prophylaxis and treatment of opportunistic infections and nutrition.

The global number of people living with HIV and AIDS2 (PLWHA) was estimated at 36.9 million by the end of 2013, while the global HIV prevalence for adults aged 15-49 years was 0.8 %. Sub-Saharan Africa remains the region most affected with nearly 1 in every 20 of the regions adult population infected with HIV, accounting for 25.8 million (24.0-28.7 million) or 70 % of the global number of people infected with HIV. Africa has the highest HIV prevalence at 4.8 %. Kenya is ranked forth globally in HIV pandemic with 1.6 million people infected (The Standard, Thursday August 11, 2016, p.5). Women represent 50 % of all adults living with

HIV globally. However, in Sub-Saharan Africa, 59 % of PLWHA are women.

The global number of new HIV infections recorded in 2013 was estimated at 2.0 million (

1.9-2.2 million) and a greater proportion, 1.4 million (1.2-1.5 million), of these new

infections occurred in Sub-Saharan Africa while 13,000 people were newly infected with

HIV in the Caribbean region bringing the total number of PLWHA in that region to 280,000. Worldwide, 240,000 children became newly infected with HIV in 2013.

About 39 million people have died of HIV-related illnesses across the globe since the early 1980s. The global HIV-related deaths amounted to 1.2 million in 2013. This was equivalent to a 35 per cent drop in AIDS-related mortalities as compared to 2005 when the highest deaths were recorded. AIDS-related deaths recorded in Sub-Saharan Africa during the same period dropped

by 39 % but the region still accounted for the highest number, 790,000 (670,000-990,000) or 74 % of all the global AIDS-related deaths recorded in 2013.

The effects of HIV on the Kenyan population has been enormous and the pandemic has

claimed the lives of at least 1.7 million people in the country since 1984 and about 33,000

people died of AIDS-related illnesses in Kenya in 2014. AIDS is the leading cause of death and disability among Kenyans aged between 10 and 24 years. A total of 2,531 youths aged between 15 and 19 years- most in secondary school died in 2013, followed by 2,398 between 10 and 14 years and 1,719 aged between 20 and 24 years. Ninety-eight adolescents get infected every day in Kenya while 14 die every day from AIDS related causes. Stigmatization from the community, teachers and peers is the biggest problem facing the adolescents living with HIV and AIDS.

## **1.1.3 Antiretroviral therapy**

Antiretroviral therapy is seen as the first successful intervention in the fight against HIV. This

therapy entails the administration of antiretrovirals3(ARVs) drugs, counselling, prophylaxis

and treatment of opportunistic infections and nutrition. The advent of ART has transformed

HIV and AIDS into a chronic treatable condition for a significant proportion of PLWHA who

have an access to treatment. The goals of ART are 5-fold including clinical (prolongation of

life), virologic (reduction in viral load), immunologic (immune reconstitution), therapeutic

(limiting toxicity) and finally epidemiologic goal which is to limit rate of HIV transmission. ARVs are effective in suppressing HIV in the body to undetectable viral levels, improving quality of life for PLWHA, increasing life expectancy, preventing opportunistic infections, reduction of HIV progression to AIDS and reduction of HIV-related mortality.

Three in every four people on ART reside in Sub-Saharan Africa which also has the highest

cases of unmet ART needs. Antiretroviral had lowered the number of global AIDS-related

deaths from 2.6 million in 2005 to 1.6 million by the end of 2012 and averted close to 7.6

million deaths between 1996 and 2012, including 4.8 million in low and middle income

countries. Approximately 650,000 PLWHA were receiving ART in Kenya by the end of 2013. These figures illustrate the magnitude of the task to provide prevention, care and treatment and support services for all who need them and strongly indicate the need to come up with strategies to maximize long-term ART adherence to ensure success in scaling up ART programmers. However, most ART programs in Kenya and elsewhere in the world are facing adherence challenges.

## **1.1.4 Non- Adherence to ART**

Increased access to ART has been accompanied by increasing unsatisfactory adherence levels. observe that adherence to medication has become a major issue in the treatment of PLWHA and an important determinant of the outcome of highly active antiretroviral therapy4 (HAART). Clinical trials of ART incorporating measurements of adherence have found a link between variations in adherence and therapeutic outcome and non -adherence was frequently associated with failure to sustain maximal suppression of HIV in the blood of PLWHA. However, antiretroviral therapy programs in many countries across the world are faced with the challenge of lack of adherence Maintaining an optimal adherence level for a long term poses a significant challenge for both PLWHA and health care providers because adherence is a multidimensional concept which require continuous support of PLWHA and individualized medication programs that will help PLWHA adjust their treatment to their lifestyle.

Levels of adherence below 95% have been associated with failure to achieve complete viral

suppression in 61% of PLWHA across the globe thus exposing them to high risk of treatment

failure. Low levels of adherence can cause a rise in viral load and this may lead to the development of drug resistance strains of 4 HAART- A combination of two or more classes of ARV drugs.

Non-adherence to ART can result in adverse events and enormous costs for health care

Systems. Low levels of adherence can also create a crisis in public health institutions capable

of undoing the success already recorded in combating HIV through treatment.

promoting optimal adherence to ART and optimal treatment regimens is critical to maintaining virological suppression and thereby ensuring the global success of ART. WHO estimates an adherence rate of 50 per cent for long-term therapies for chronic conditions in developed countries. A review of various studies across the world reported non-adherence rates ranging from 50 to 70 per cent among PLHWA enrolled in ART in various parts of the world. The average rate of adherence to ART remains approximately between 60% and 70% in Africa. ART programs in Africa have retained about 60% of PLWHA at the end of two years of close observation. The major causes of drop-outs are death and loss to follow-up. The percentage of loss to follow-up varies widely across programs and ranges from 37 % to 44%.

A study conducted in Kenya reported PLWHA‟s ART adherence rate of 65% that achieving adherence is an interactive process where the ultimate responsibility for adherence to treatment rests with the PLWHA. It is a complex process influenced by factors both internal and external to the PLWHA and a process in which the PLWHA must confront and come to terms with those influences in a manner that is conducive to adherence.

Adherence is a dynamic and ongoing process that PLWHA negotiates each time a dose of medication must be taken. Achieving the required levels of adherence to ART involves multiple interventions because some of the factors which influence adherence to ART may be outside the PLWHA‟s sphere of influence. Although efforts to expand access to antiretroviral therapy have rightly focused on access to

affordable drugs, these medications may be of little value without careful implementation and

monitoring to ensure that optimal adherence to ART is realized. Without such careful

implementations, the distribution of drugs might be harmful not only because it would divert

scarce resources but also because future therapeutic options may be limited by the emergence

of drug resistant strains of HIV.

## **1.2 Problem statement**

To achieve effective treatment and realize the benefits of treatment, strict adherence to treatment instructions are very critical. Sticking to the treatment instructions for a long-term illness poses a great challenge to the patients (WHO, 2004). Just having medicine available cannot solve the HIV and AIDS problems. Worldwide, regardless of the illness or treatment many people do not take their medications correctly. A significant proportion of all hospital admissions and mortality are due to drug non-adherence. In a survey in U.S.A by Stone (2000), 21 % of AIDS patients who were on ARV drugs had missed a dose in 24 hours while 34 % had skipped a dose in 3 days. Kenya has made tremendous strides in scaling up ART. However, anecdotal evidence is suggesting certain problems that contribute to defaulter rate, for instance it is said that some men use their partners ARVs irrespective of their status. A few patients may sell all or part of their ARVs for profit (NACC Kenya, 2008). There is a possibility that defaulter rate is high among the youth and children under care of elderly. In Kenya adherence is high but still sub optimal (UNAIDS/WHO.2006, NACC Kenya, 2007).

A study in Mombasa Kenya by Sarna *et al.* (2005) showed that ART adherence rate among patients under directly administered antiretroviral therapy (DAART) program was greater than 95% compared to sub optimal rates < 95%) for patients who were not under DAART program. There have been a high number of patients with HIV related complications admitted to Chepkoilel location hospital, while others are taking their ARV but the viral load still remain higher as 2000000 copies/ml and these patients are traced to be ART defaulters. Therefore, this study aimed at determining all the possible factors that influence non-adherence HAART among PLWHA despite psychosocial and spiritual counseling provided

## **1.3 RESEARCH QUESTIONS.**

## **1.3.0 Broad research question.**

What are the barriers to adherence of HIV patients to clinic appointments in Uasin Gishu county, Moiben sub-county, Chepkoilel location?

## **1.3.1 specific research questions.**

1. How does poverty influence non-adherence to ART among HIV/AIDS patients?
2. Does patients’ perception towards ART hinders adherence to the ARV regimen among HIV/AIDS patients?
3. How do accessibility of ARV influence adherence to ART regimen among HIV/AIDS patients?

## **1.4 HYPOTHESIS.**

Null hypothesis was used in this study. It was projected that there was no relationship between Poverty, Accessibility of ARV, patient’s perception towards adherence to ART in HIV patients attending chepkoilel dispensary. If proper awareness and education was given to patients non adherence cases will be reduced

## 1.5 OBJECTIVES.

## 1.5.1 Broad objective.

To determine factors associated with non-adherence to scheduled medical follow up appointments among HIV patients in Uasin Gishu county, Moiben sub county, Chepkoilel location.

## **1.5.2 Specific objectives.**

* + 1. To identify how poverty influence non-adherence to ART among the AIDS patients?
    2. To establish patient perceptions towards adherence to ART among AIDS patients
    3. To determine how accessibility of ARV influence adherence to ART among the

HIV/AIDS patients

## **1.6 JUSTIFICATION OF THE STUDY.**

Despite patients' understanding the consequences of non-adherence to medication, adherence rates were sub optimal (WHO, 2004, Sharon *et al.,* 2006). Long-term adherence interventions are needed for durable effect, particularly in chronic diseases such as HIV (Sharon *et al.,* 2006). Antiretroviral therapy lowers viral load only when treatment regimen is fully adhered to. Human immuno-deficiency virus (HIV) poses a unique challenge due to its rapid replication and mutation rates hence very high levels of adherence (greater than 95%) are required to achieve long-term suppression of viral load (Paterson *et al., 2000).*

While it is known that patients in Lusaka Zambia used to skip treatment doses due to lack of food (Chishimba and Zulu, 2004) such information is lacking in the Kenyan population. This study was conducted at chepkoilel Hospital where interventions such as Directly Administered ART have not been implemented fully. Moiben sub county and its environs exhibited huge variations in poverty across divisions or locations, people have dedicated their farms to commercial crop plantation and abandoned food crops. A number of clients travel as from other counties seeking HAART services. However, factors underlying such differences and why the long distance have not been explored. Therefore, this study seeks to provide information on factors that influence non-adherence to ART. The information will be useful to other scholars doing studies in this area and for planning interventions and effective strategies for maximizing long-term adherence to ART for successful treatment of HIV and AIDS.

# 

# CHAPTER 2: LITERATURE REVIEW

## **2.0 Introduction**

Adherence to antiretroviral therapy (ART) is well recognized to be an essential component of individual and programmatic treatment success. Higher levels of adherence are associated with improved virological and clinical outcome (Paterson *et al., 2000;* Orell *et al.,* 2003). Near perfect pill taking (values exceeding 95%) are desirable in order to maximize the benefits of ART (Paterson *et al.,* 2000; Gross *et al.,* 2001). This means taking the correct dose of drugs at the right times and observing any dietary restrictions (Paterson *et al.,* 2000; Carter, 2005). Anything less than this leads rapidly to the development of viral resistance and hence to much earlier treatment failure (Paterson *et al., 2000).*

Adherence to ART is challenging, because patients need almost perfect adherence of at least 95 percent to keep viral load at undetectable levels as long as possible and to maintain the functionality of the immune system. A recent data-analysis of adherence levels found that a pooled estimate of only 77 percent of people taking antiretroviral medications in sub-Saharan Africa adhered to the regimen. Overall, there are little data on the adherence levels reached at health facilities providing routine ART services. Missing even only one tablet in a week translates to only 92.8 % adherence (Republic of Kenya, MoH, 2004). A person who takes ARVs erratically will receive only marginal benefit, but will suffer similar side effect and will potentially limit their future treatment options. It is important that all patients can demonstrate an understanding of this before starting treatment. A patient who stops taking ARV entirely will rapidly lose any benefit they may have received in terms of increased immunity as the virus flourishes and CD4+ cells are destroyed. Patients must be made aware that ARV treatment is a life-long treatment. Educating a patient effectively and assessing their understanding can be time consuming and labor intensive, but it is never time wasted. Simply giving a prescription at the first visit without sufficient adherence counseling is clinically negligent, but unfortunately this is a common practice (Republic of Kenya, MoH, 2004).

Antiretroviral therapy providers that do not seriously address the complex issue of adherence will fail in their objective of helping their patient. At the public level this may cause the development of multi drug resistant strains within the population they serve and which would have dire public health implications. Adherence is therefore central to the success of ART (Republic of Kenya, MoH, 2005). Non-adherence to ART might involve a person missing one dose of a given drug, missing a dose of all the three drugs, missing multiple doses, not observing the time intervals, not observing the dietary restrictions, not taking the correct dose of any drug *(KITSO* Manual, 2000; Cater, 2005). Non-adherence can lead to poor clinical, immunological and virological outcomes. At an individual level the consequences of non–adherence include: incomplete viral suppression, continued destruction of the immune system and decrease of CD4+ cell count, progression of disease, emergence of resistant viral strains and limited future therapeutic option and higher cost for individual treatment which translates to higher program cost (Republic of Kenya, MoH, 2005). Proper education of patients before the initiation of and during ART is important for the success of adherence. Strategies such as education should cover basic information about HIV and its manifestations, the benefits and side effects of ARV medications, how the medications should be taken and the importance of not missing any doses. Adherence assessment should be combined with adherence counseling at each visit.

**2.1 Measurement of ART Adherence**

Researchers who have tried to measure ART adherence have realized that there is no gold standard by which adherence can be quantified (Farmer, 1999). The many methods employed by different studies include: pill counting, electronic drug monitoring (EDM), pharmacy refill records, biochemical markers and other self-reporting techniques such as visual analogue and recall method.

The relative accuracy of adherence measures ranks from physician assessment and self - assessment being the least accurate to pill counting being intermediate and EDM being the most accurate (Gill *et al.,* 2005). Electronic drug monitoring more accurately predicts undetectable viral load (UDVL) than self-report or pill count. Its main advantages are that it provides data on the timing of doses taken and permits monitoring over long periods.

Since adherence can be known precisely, the link between adherence levels and UDVL can be established with a high degree of confidence. Arsten *et al.* (2001) noted that patients whose EDM data indicated high adherence (above 90%) were far more likely to achieve UDVL than patient’s self -reporting the same level of adherence. Other studies had similar results on the relationship between UDVL and EDM -rated adherence. Paterson *et al.* (2000) observed UDVL in 80% of those with above 95% adherence, while in a trial conducted by Kirkland *et al.* (2002) mean adherence was 94% with 85% of the patients achieving UDVL. However, no single measure is appropriate for all settings or outcomes. It has been found that the use of more than one measure of adherence allows the strength of one method to compensate for the weakness of the other and to more accurately capture the information needed to determine adherence levels (Vitolins *et al.,* 2000). Non-Adherence to ART can be influenced by various factors as follow

## **2.1.1 Poverty**

There is evidence in the pioneering studies on adherence in resource-poor settings to suggest that medication-related costs are one of the main barriers to ART adherence. For instance, a metaanalysis of 10 studies conducted in poor countries by (Ivers et al 2005) found that the cost of treatment was a major obstacle to treatment.

But the relationship between food and medication extends even further beyond the income argument. Some classes of antiretroviral drugs (such as Saquinvair and Nelfinavir) actually cause [adverse side effects](http://download.springer.com.ezpprod1.hul.harvard.edu/static/pdf/808/art%3A10.1007%2Fs10461-01305474.pdf?auth66=1419030542_076a67c8ae5a0a77a3cbd3fbe2299ec5&ext=.pdf) when taken without food, such as nausea, vomiting, and stomach pain. On the other hand, other classes of drugs (such as Didanosine and Indinavir) cause side effects when taken with food, such as [increased appetite.](http://www.ncbi.nlm.nih.gov/pubmed/25096293) For patients living in poverty, reducing these negative side effects naturally become priorities in the context of scarce food and income. In this case, non-adherence seems more convenient and advantageous to the patient. (Park, 2015)

Malnutrition impairs metabolic functioning including absorption, storage, and utilization of nutrients which further compromises the immune system (Ivers et al. 2009). Food insufficiency in developed countries has the same adverse impacts observed in developing countries. For example, a study conducted in San Francisco showed that one in three marginally housed people living with HIV/AIDS were severely food insecure. Furthermore, those persons who were food insecure demonstrated lower T-cell (CD4) counts, poorer medication adherence, and incomplete suppression of HIV replication compared to individuals who had adequate food (Weiser et al. 2009).

## **2.2.2 Patients’ perception towards ART**

A number of interview-based studies exploring patients’ reasons for refusing HAART identified the potential importance of patients’ beliefs about antiretroviral treatment. Patients reported a number of negative perceptions about HAART, including fears about side effects, concerns about the need for strict adherence, inconvenience and practical problems associated with the regimen, distrust of conventional medicines, fear of long-term damage to body organs, and the perception that there is no reason to start in the absence of symptoms. Similar beliefs have emerged in studies of adherence, where non-adherence was linked to doubts about treatment efficacy, concerns about side effects and long-term toxicities, scheduling demands and personal capacity to adhere, concerns about the impact of HAART on self-identity, and the possibility that taking treatment might lead to disclosure of the individual’s HIV status. Indeed, one reason why previous interventions to facilitate adherence have met with only limited success is that they have failed to utilize theory based methods for identifying and addressing the main perceptual barriers (e.g. beliefs, attitudes). (Lipincott & Wilkins, 2007).

Findings indicate that patients’ perceptions of the necessity for HAART may not be consistent with the clinical imperative for treatment. We therefore need a better understanding of why patients remain unconvinced about their personal need for HAART. Research in other illnesses has identified the importance of patients’ common-sense understanding of their illness in this respect and the degree to which the treatment offer is consistent with their underlying beliefs about the illness. Common-sense beliefs about medicines are strongly influenced by subjective experiences of the illness, including symptoms. (Lipincott & Wilkins, 2007). Some patients have the perception that ART disrupts their routine or having a chaotic schedule, finding HAART too inconvenient or difficult to incorporate and difficulties coordinating adherence with work, family or care giving responsibilities at home. Difficult to balance the numerous strict dietary requirements associated with HAART; sleeping through a dose. Forgetfulness causing someone to miss doses is mentioned as a challenge not only by no adherent participants but even by those recorded at the facility as having adherence levels of above 95%. (Castro, 2005; Mills *et al.,* 2006).

A client who is more knowledgeable about HIV, the importance of maintaining the recommended adherence levels would tend to follow all the instructions regarding medication intake as compared to the client with no such information. In addition, negative beliefs regarding efficacy of HAART may also influence ART adherence behavior resulting to non-adherence (Paterson, 2010). Poor adherence has also been associated with patient’s desire to avoid embarrassing side effects (like sweating) in certain situations such as on a date or at a job interview (Burgos *et al.,*1998).

## **2.2.3 Accessibility to ART**

The effect that the ARV accessibility on ART adherence should not be under-estimated. Accessibility factors that impact on adherence include: proximity to the patients’ home or place of work; the expense of getting there (Nakiyemba *et al.,* 2005). Long distances to health facilities impact on adherence. Despite the fact that adherence is said to be 90% amongst people taking ART in Sub-Saharan and Africa, transportation over long distances from/ to health facilities remains an important barrier to sustain adherence to medications (Charurat *et al*., 2010; Rougemont *et al*., 2009; Ware *et al*., 2009; Bennet *et al*., 2008). A study done in Addis Ababa found that it took up to two hours for patients to walk to the nearest health facility to receive treatment (Demisse, Lindtjorn & Berhane, 2002). Transportation difficulties, according to Mills *et al*. (2006), were often the major interference to adherence.

An average clinic visit in South Africa consumes a [full working day,](http://ebooks.cambridge.org/chapter.jsf?bid=CBO9781139062404&cid=CBO9781139062404A045) oftentimes even longer because patients tend to attend clinics far away from their homes so as to minimize the likelihood of being identified by community members. For those who can afford to lose a day’s paycheck and can also afford the transportation costs (which present a larger burden for those who live in rural areas compared to urban areas), it is often [hard to negotiate time off](http://uir.unisa.ac.za/handle/10500/4970) from work to get prescriptions, mainly because they do not want to disclose their HIV status to employers out of fear of discrimination. With soaring unemployment rates ([24% as of 2014)](http://www.tradingeconomics.com/south-africa/unemployment-rate) and widespread food insecurity, few patients are willing to risk their jobs, especially when only [one in five households](http://www.ncbi.nlm.nih.gov/pubmed/21730994) in the country currently meets its dietary energy needs.

**3.0 CHAPTER THREE: STUDY METHODOLOGY**

## 

## **3.1 BACKGROUND INFORMATION OF STUDY AREA**

## **3.1.1 POSITION AND LOCALITY**

Uasin Gishu county is situated in the mid-west of Kenya’s Rift Valley and shares common borders with Trans Nzoia county to the north, Elgeyo marakwet county to the east, Baringo county to the south east, Kericho county to the south, Nandi county to the south west and Kakamega county to the north west.

It lies between longitudes 34 ˚ 54’ east and 35 ˚ 37’ west and latitudes 0 ˚ 03’ south and 0 ˚ 55’ north. The county is named after the Ilwuasinkishu maasai clan who initially used the area for grazing. Moiben sub county is located along the Eldoret-Iten highway with Kimumu ward along the way

## **3.1.2 AREA**

It covers an area of 3,392.2km² with 476.3km² under forest cover according to the 2019 Kenya population and housing census. Eldoret is the main city and major six urban centers include Burnt forest, Matunda, Turbo, Moiben, Kesses and Kapseret

## **3.1.3 ADMININSTRATIVE UNITS**

The county is divided into five sub-counties namely; turbo, Soi,Aainabkoi, Kesses and Kapseret. The sub divisions are further sub divided fifty-one locations and ninety-seven sub locations

## **3.1.4 POPULATION**

According to the 2019 population and housing census, the total population of Uasin Gishu county stood at 894,179 with a population growth of 3.8%, the total population is projected to grow to 1,211,853 by 2009.population density is 267 persons per square km. In 2012, the population age group between 0-14yrs was 41.4% while the economically active age group of between 15-64yrs accounted for 55.7% and those above 64yrs accounting for 2.9% of the total population

## **3.1.5 CLIMATE**

Uasin Gishu county experiences high and reliable rainfall which is evenly distributed throughout the year. The average rainfall ranges from 624.9mm to 1,560.4mm with the wettest months occurring between the months of April and May and the driest months occurring between January and February. It has a cool and temperate climate, with annual temperature ranging between 7 ˚C and 29 ˚C

## **3.1.6 ROAD NETWORK AND INFRASTRUCTURE**

Uasin Gishu has a total of 1,266kms of road network comprising of over 300kms of tarmac roads, 549kms of gravel and 377kms of earth roads. It also boasts 179kms of railway line with 8 railway stations. In addition, there is an inland contain depot, the Moi international airport and two airstrips

## **3.1.7 EDUCATION AND LITERACY**

As at 2007, the county had 771 primary schools with an enrollment of 184,954 pupils and a teacher to pupil ratio of 1:42.1. There were 158 secondary schools with an enrollment of 14,712 students and a teacher to pupil ratio of 1:30.9

The county has over 14 tertiary institutions with 2 public universities (Moi university and university of Eldoret),2 private universities and constituent colleges of major universities

## **3.1.8 FINANCIAL SERVICES**

It has a branch of central bank of Kenya,21 commercial banks,108 urban and 4 rural success and 5 major micro-financing institutions.

## **3.1.9 HEALTH**

There are a total of 125 health facilities spread across the county. The county has one referral hospital, one district hospital,2 sub-district hospitals,88 dispensaries,23 health centers and 10 others

## **3.1.10 ECONOMY**

Uasin Gishu main economic activities are large scale wheat and maize farming. Agriculture supports over 80% of the rural population. Other activity is livestock farming, horticulture and sports tourism

## **3.1.11 TOP TEN DISEASES**

Malaria -16%

Respiratory tract infections -14%

Pneumonia -12%

Diarrhea -10%

HIV/AIDS -8%

Skin infections -6%

Malnutrition -4%

Tuberculosis -2%

Urinary tract infections -1%

Dysentery -1%

## **3.2 STUDY DESIGN**

A descriptive cross-sectional study was used to determine factors associated with non-adherence to scheduled medical follow up appointments among hiv patients

## **3.3 STUDY AREA**

The study was carried out in Chepkoilel location, Moiben sub county, Uasin Gishu county.

## **3.4 STUDY TIME**

Dec 2019

## **3.5 TARGET POPULATION**

The target population was all people living with HIV/AIDS on HAART.

## **3.6 STUDY POPULATION**

According to Parahoo (1997), population refers to “the total number of units from which data can be collected”, such as individuals, artifacts, events or organizations. Conferring to Burns and Grove (2003) population is all elements that meet the criteria for inclusion in a study. The study population included all HIV/AIDS patients 18 years and older on ART attending Chepkoilel hospital in Uasin gishu County.

## **3.7 SAMPLING TECHNIQUE**

Simple random sampling technique was used to determine the area of study

## **3.8 SAMPLING METHOD**

Simple random sampling

## **3.9 SAMPLING PROCEDURE**

Simple random sampling was used to come up with the first respondent, after which snow balling was used to come up with the next or subsequent respondents

## **3.10 SAMPLE SIZE DETERMINATION**

The sample was determined using Fisher *et al* formula (1998). The assumptions were that the sample is representative; the sampling error is small, the sample is viable in the context of funds available for the research study, systematic bias was controlled in a better way and results from the sample study was generated.

n= Z2pq

d2

Where; n= desired sample size (if target population is more than 10,000)

Z= standard normal deviation and the required confidence level usually set at 1.96.

p= proportion of HIV and AIDS patients on ARV treatment who did not adhere. Adherence of ART is at 95%

q= 1 – p

d= the level of statistical significance set at 0.05. Thus the sample size will be calculated as follows; n= (1.96)2 x (0.5) x (0.05)

(0.05)2

n= 384.16

Since the population is less than 10,000, sample size is calculated as follows;

Nf = n

1 + n/N

Where;

Nf = desired sample size (when population is less than 10,000).

n= desired sample size if target population is greater than 10,000. N= estimate of the population size

Nf= 384

1 + 384/2500

= 333

Hence minimum sample size is 333 respondents (approximately 333 respondents to take part)

## **3.12 SELECTION CRITERIA**

## **3.12.1 INCLUSION CRITERIA**

The inclusion criteria comprised of HIV/AIDS patients who had started ART and were willing to participate in the study. The benchmark of adherence was to be set at the day the patient had started on ARV treatment because even missing one dose of ARV drugs in a week translates to only 92.8% adherence, which is sub optimal (Paterson *et al, 2000).*

## **3.12.2 EXCLUSION CRITERIA**

**were:**

1. PLWHA who had not started ART but on care

1. PLWHA on ART who didn’t consent to participate in the study.

## **3.13 DATA COLLECTION TOOLS**

Pens

Pencils

Rubbers

Scientific calculator

## **3.13.0 Study Variables**

## **3.13.1 Dependent variable**

Was non-adherence to ARV treatment.

3.13.2 Independent variables will be:

Sex, age, and marital status, household size, level of education, occupation, food, transport cost, patients’ perceptions such as believe and attitude, distance between home and health facility

## **3.14 DATA COLLECTION TECHNIQUE**

Questionnaire

## **3.15 DATA ANALYSIS**

Analysis of data was done by processing the data, that is editing, coding, classification, tabulation, then statistical and descriptive analysis

## **3.16 DATA PRESENTATION**

The data collected was presented by use of graphs, pie charts, and tables

## 3.17 MINIMISATION OF ERRORS

A pilot survey was done to pretest the questionnaire for validation for easy interpretation of the results

## **3.18 ETHICAL CONSIDERATION**

Letter and permission was sought from the university Vice chancellor through the head of department Public health.

Then at the county level, permission of acceptance was sought from the county director of preventive and promotional services, then director of education of the county thereafter to the respective sub county public health officer who will refer me to his juniors and other policy makers and community owned resource persons of which I will work with them till the end of the data collection.

# CHAPTER 4: RESEARCH FINDINGS

## **4.0 Introduction**

Following the collection of data in the field by use of questionnaires, data was analyzed by the researcher as per the objectives of the research. This correlates the research objectives and the goal of the research project. Data was analyzed using the SPSS software version 22 as stated in the research methodology. Data interpretation was therefore done by use of graphs and pie charts to visualize the results of the findings and data collected.

A total of 68 respondents were used in the study but 65 questionnaires were completed and returned to the researcher. Out of 65 respondents, 27 were men while 38 were women. This translates to 95% of the respondents which is a significant figure according to Mugenda and Mugenda (2009) book which suggests 50% and above of the respondents is healthy for the results. The commendable response rate is attributed to the active role of the researcher in encouraging the respondents on the importance of filling the questionnaire.

### **4.0.1 Determining Proportion of AIDS Patients on ARV who adhered to Treatment**

In this study, ARV users were asked about their adherence level and how many times they missed to take their drugs as required. The beginning of the scale is associated with complete adherence in the past month, while the end is associated with complete lack of adherence. The patient's mark was then measured using a rating of 5 and translated into percentages. Also the patient’s files were looked at the level of adherence checked, most of the patients presented a good adherence level of (>95%), but some patients showed poor adherence.

# Table 1: Distribution of Adherence level at Chepkanga Hospital

|  |  |  |
| --- | --- | --- |
| adherence level | Number | % of adherence |
| 0-1 | 54 | 83 |
| 2-5+ | 11 | 17 |
| 65 | 100% |

Non-adherence rate was 17 % (11) indicating that ART adherence rate was 83% (54). This means that the level of ART adherence in the study area is sub-optimal (<95%).

83

17

0

20

40

60

80

100

Adhere

Non-Adhere

**% of adherence**

% of adherence

# Figure 1: Distribution of respondents according to adherence to ART

**.**

## **4.1 Demographic characteristics of the respondents**

The respondents comprised of 27 male and 38 female respondents, with 31% in the age bracket of 18-20years, 26% between 30-39, 25% between 20-29years, 11% between 40-49years. 5% between 50-59years and 3% above 60years.Most of them were married, that’s 51% of the respondents, 28% of the respondents were still single while 8% and 11% were divorced and widowed respectively**.** 25% of the respondents had 2 children, 22% of the respondents both had 1 and 3 children. A small percentage had more than 4 children while 20% of them had no child. As far as education is concerned a number of them had acquired basic education and knowledge, with 49% of the respondents having reached primary level, 31% of them reaching secondary level, a small number of 8% attained college and university education, still 20% of them never got the chance to access any education. According to the age interval, the most clients were of age is between 30-39 years with a percentage of 34% followed by the age of 20-29 years with 26% and then age between 18-20 years with 22%. Clients over 60 years reported the lowest number with 3%. This finding agrees with the finding of Jones *et al.* (1999) and Abah *et al.* (2004) that age of respondent influences adherence to ART. Adherence to treatment according to findings of this study was high (81%) among respondents in the age bracket 30-39 years. The trend showed that adherence to ART increased with increasing age and decreased as the age advanced beyond 60 years.

# Table 2: Distribution of respondents according to demographic characteristics

|  |  |  |
| --- | --- | --- |
| **Characteristics** | **N=68** | **%** |
| Sex/ Gender of participation:  Male female | 27  38 | 42  58 |
| 65 | 100 |
| Age  18-20years  20-29years  30-39years  40-49years  50-59years  60+ | 14  17  22  7  3  2 | 22  26  34  11  5  3 |
| 65 | 100 |
| Marital status  Single  Married  Divorced  Widowed/widower  Co-habiting | 18  33  5  7  2 | 28  51  8  11  3 |
| 65 | 100 |
| Number of children  0  1  2  3  4  5 | 13  14  16  14  6  2 | 20  22  25  22  9  3 |
| 65 | 100 |
| Education level  None  Primary  Secondary  College/university | 8  32  20  5 | 12  49  31  8 |
| 65 | 100 |

WOMEN,

58

MEN, 42

**SEX**

# Figure 2: Distribution of respondents according to gender

22

26

34

11

5

3

0

5

10

15

20

25

30

35

40

**Age of Respondent**

# Figure 3: Distribution of respondents according to age

## **4.2 Assessing Poverty**

Assessing of poverty on how it influences adherence level of ARV among patients was done by collecting information from them. They had varying responses and also similar ones again. The main occupation of the respondents varied with 25 (39%) unemployed, doing part time jobs, seasonal jobs in farms picking tea leaves and working people’s farm. The other 15(23%) and 16(25%) were employed and self-employed respectively. This finding indicates that respondents who were employed adhered much more than unemployed respondents.

From the interviews, most of the respondents 86% said that they are the sole breadwinners in their families and households. Whereas the other 14% were supported to get food by their respective families, friends and relatives. The income of most the respondents ranged from 1000 -5000 Ksh monthly, this is 45% of the total respondents. Followed by 23 (35%) respondents who earn between 0 -1000kshs, this shows that most people really have problem getting money to support themselves and also purchase food to be taken along with ARV. A population of 20% of the respondents can manage to raise over Ksh 5000 monthly. From the open interview with the patients, most 36 (55%) responded that it’s not easy for them to purchase any other medication over the counter because of money constraints, while the other 29 (45%) responded that they at least purchase other basic medications in the local pharmacy.

# Table 3: Distribution of respondents according to poverty

|  |  |  |
| --- | --- | --- |
| **Poverty information** | **N=68** | **%** |
| Main occupation:  Student  Employed  Business/self  Sick leave  Unemployed | 3  15  16  6  25 | 5  23  25  9  39 |
| 65 | 100 |
| Breadwinner:  Client  Others | 56  9 | 86  14 |
| 65 | 100 |
| Approx. Monthly Income (Ksh)  0-1000  1000-5000  5000-10000  10000-20000  20000-Above | 23  29  8  3  2 | 35  45  12  5  3 |
| 65 | 100 |
| Ease of buying medication  Yes  No | 29  36 | 45  55 |
| 65 | 100 |

5

23

25

9

39

0

5

10

15

20

25

30

35

40

45

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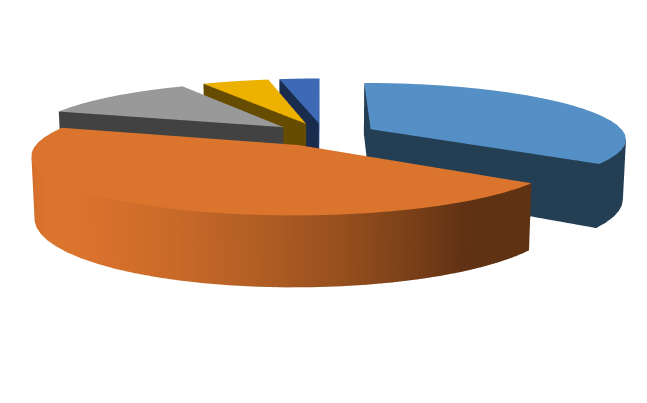
**t**

**s**

**occupation**

**Occupation Type**

# Figure 4: Distribution of respondents according to occupation



**35**

**%**

**45**

**%**

**12**

**%**

**5**

**%**

**3**

**%**

**Monthly Income**

0-1000

1000-5000

5000-10000

10000-20000

20000-

Above

# Figure 5: Distribution of respondents according to Monthly Income Food and nutrition

49% of respondents mainly purchased food for their households, 40 % got their food from household farm and 8 % got their food from relatives and friends, while 3% received from welfare, well-wishers and NGO.

Interviews found that those who got food from their farm were able to adhere to ART than those who mainly purchased food because they were food secure. One patient interviewed said “*I spent all the money I earn daily on food because of a large family; we eat the basic food (ugali, vegetables and milk if available). Sometimes it’s hard to get the money because of body weakness*”

Majority of respondents 46 % were able to afford two meals in a day. Those who could afford three and one meal in a day were 33 % and 22% respectively. This means the underlying population was not fully food secure.

**Table 4: Distribution of respondents according to food security and nutrition**

|  |  |  |
| --- | --- | --- |
| **Food and Nutrition Security** | **N=68** | **%** |
| Main source of food  Purchase  Household farm  Relatives/friends  Welfare/NGO support | 32  26  5  2 | 49  40  8  3 |
| 65 | 100 |
| Money used to buy food daily in household(Ksh)  0-100  100-300  300-600  600-1000 | 22  27  13  3 | 34  42  20  5 |
| 65 | 100 |
| Meals afforded in a day one two three | 19  29  17 | 29  45  26 |
| 65 | 100 |
| Ease of balancing between ARV and required food yes no | 30  35 | 46  54 |
| 65 | 100 |

49

40

8

3

0

10

20

30

40

50

60

**Source of Food**

% of Respondents

# Figure 6: Distribution of respondents according to source of food

22

46

33

One

Two

Three

0

10

20

30

40

50

**M**

**e**

**a**

**l**

**s**

**A**

**f**

**f**

**o**

**r**

**d**

**e**

**d**

**Number of meals taken in a day**

% of Respondents

# Figure 7: Distribution of respondents according to number of meals taken in a day

## **4.2 Assessing patients towards Attitude/ Perception towards ART**

Most patients (98%) had a positive attitude toward ART and they all approved ART for management of AIDS. Majority of respondents 77 % said that they did not avoid friends or relatives and neither did friends or relatives avoid them during ARV treatment. The rest of the respondents 23% suffered from stigma.

Majority of clients 68% reported to having support in ARV medication, while 32% of the clients claimed to get less or no support in their medication making them have a tough task in adhering to their drugs. For those who received support in their medication, a big number 48% were supported by a family member, 36% were assisted by spouses, and 14% got support from close friends, whereas 2% got support from others. The support they got included remind to take drugs at the right time, moral support and assurance of getting better, the supporters also reminded them of appointments dates and checking on theirs drugs

Most respondents 59% were optimistic towards ART and admitted that their CD4+ count (indicated on patient’s card) improved after taking ARV drugs for at least one month; 26% said they had no more frequent sickness.19% of respondents who included guardians or parents of HIV/AIDSpositive children and they mentioned normal growth of the children and them as a benefit of ART to the child.

Patients had different views and perceptions on the role of ARV on the clients’ bodies. 63% of the clients had in mind that the ARV is used cure HIV/AIDS, 19% of them believe that the drugs are for reducing the progression of HIV, 8% of the respondents said that the ARV drugs reduced the pain caused by the infections, whereas 11% of them didn’t know the exact role of the drugs, they just took them because they are told its necessary.

# Table 5: Distribution of respondents according to Perception towards ART

|  |  |  |
| --- | --- | --- |
| **Attitude/ Perception towards ART** | **N=68** | **Percentages %** |
| Opinion regarding ART therapy:  Approve  Disagree  Undecided | 39  16  10 | 60  25  15 |
| 65 | 100 |
| Avoidance of friends or relative  No  Yes | 50  15 | 77  23 |
| 65 | 100 |
| Support on ARV medication:  Yes  No | 44  21 | 68  32 |
| 65 | 100 |
| Person who supports:  Spouse  Family member  Friend  Other | 16  21  6  1 | 36  48  14  2 |
| 44 | 100 |
| Positive health perception of ARV  No  Yes | 22  43 | 34  66 |
| 65 | 100 |
| Benefits from using ARV drugs  Gained more weight/energy  No more frequent sickness  Growing normal now | 8  11  24 | 19  26  59 |
| 43 | 100 |
| Views on the use of ARV drugs  Curing  Reducing pain  Reducing progression of HIV I don’t know | 41  5  12  7 | 63  8  19  11 |
| 65 | 100 |

23

77

0

10

20

30

40

50

60

70

80

90

YES

NO

**% of respondents**

**Avoids or avoided by relatives/friends**

**Patients avoiding Relatives Friends**

# Figure 8: Distribution of respondents according to whether they suffered stigmatization

29

8

25

0

5

10

15

20

25

30

35

Lack of time

Poor weather (rainy)

Lack of transport means

**%**

**o**

**f**

**R**

**e**

**s**

**p**

**o**

**n**

**d**

**e**

**n**

**t**

**s**

**Benefits of using ARVs Drugs**

**Benefits from using ARV Drugs**

Figure 9: Distribution of respondents according to Benefits from using ARV drugs

## **4.3 Assessing how accessibility affect adherence**

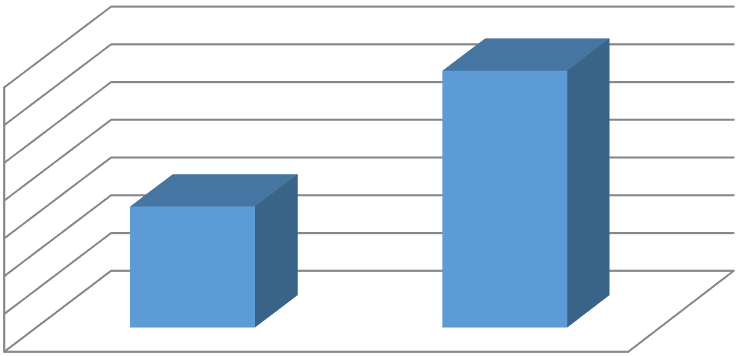
From the study 68% were not very far from the hospital, they came from within the Moiben sub county and surrounding locations such as Chepkoilel, Marura and Kuinet. Whereas 32% of the respondents came from within Uasin Gishu. Those who came from far said they have to wake up early so as make to the hospital, some of them would even arrive late to the hospital when the doctors and caregivers are gone. For those patients who came from far Stigmatization also led some participant to access medical treatment at clinics that are far from their homes to avoid being seen by people known to them when they go for follow-up appointments.

*“…I come for treatment here because I did not want people in our area to know that I am on ARTs but now I am getting it difficult with transport money, I want to go back to the nearest clinic.* (Unemployed female 28yrs).

Twenty-five percent and 28% use Matatu and boda-boda (Motorcycle) respectively to reach hospital, sometime they lack money or even means of transport aren’t available, they end up missing appointments to pick ARVs hence not adhering fully. Most of the clients had different reasons for missing appointment date they are supposed to go to the clinic to refill their ARV drugs, checked viral loads, CD4 count and adherence counseling. 29% of the respondents reported to lack time to come and pick the drugs because some were occupied in their works and other activities, making other come late when the drugs are over. 8% of the respondents blamed on the poor weather during some seasons of the year, they said during rainy season mostly it’s hard for them to come to the clinic when raining because the roads may be impassable.

# Table 6: Distribution of respondents according to accessibility of ART

|  |  |  |
| --- | --- | --- |
| **Accessibility to ART** | **N=68** | **%** |
| Distance to hospital, far?  Yes  No | 21  44 | 32  68 |
| 65 | 100 |
| Means of transport to hospital  Matatu  Private car  Boda Boda Walking | 16  0  18  31 | 25  0  28  48 |
| 65 | 100 |
| Ever missed appointment date?  Yes  No | 34  31 | 52  48 |
| 65 | 100 |
| Reason for missing appointment:  Lack of time  Poor weather (rainy)  Lack of transport means  Lack of transport fare  Other | 19  5  16  14  10 | 29  8  25  22  15 |
| 65 | 100 |



0

10

20

30

40

50

60

70

Yes

No

32

68

**% of respondents**

**Is Distance to hospital far far? Far far?**

**Distance to Hospital**

# Figure 10: Distribution of respondents according to the distance to hospital

**25**

**28**

**48**

0

10

20

30

40

50

60

Matatu

Boda boda

Walking

**Transport Means to Hospital**

# Figure 11: Distribution of respondents according to transport means

0

5

10

15

20

25

30

35

Lack of time

Poor weather (rainy)

Lack of transport means

Lack of transport fare

Other

**Reasons for missing Appointment**

**% of Respondents**

Figure 12: Distribution of respondents according reasons of missing appointment

# CHAPTER 5: DISCUSSION OF RESULTS

# 5.1 Assessing Poverty

This finding suggests that lack of enough food influenced non- adherence to ART. The more meals one could afford in a day the more that patient adhered to ART. Patients reported that when they take their treatment having not eaten any food they suffered from dizziness and therefore it was difficult to take ARV medicine without food. In fact, among respondents who could only afford one meal a day 71% did not adhere to ARV treatment. This finding was supported by a study on HIV -patients in Lusaka Zambia who used to skip treatment doses due to lack of food (Chishimba and Zulu, 2004).

From a close interview patients reported that lack of food contributed to ART non adherence. *"Once I take this medicine I feel dizziness, therefore when I have not taken any meal I can hardly take this medicine. A* 36-year-old *female patient quipped".*

*"These medicines make me feel hungry most of the time I can even take four meals in a day when there is food so that I can cope with this medication. A 40-year-old male patient said".*

Sufficient nutrition for patients on ART is very crucial because it boosts their immune system, which helps them to cope with medication. That way the patient is able to tolerate the side effects especially the undesired side effects.

These findings are supported by studies on HIV -patients in South Africa and USA among whom those who lacked education did not adhere to ARV treatment (Rodriguez *et al.,* 2000; Wolf and Cecilia, 2001; Abah *et al.,* 2004; Stone, 2004, this because those who are literate will have more knowledge on adherence and also can follow the prescription of various drugs accurately

# 5.2 Patient’s perception towards ART and ARV

This was an indication that stigma was still high in the study area. This finding was supported by another study on AIDS patients among whom 67.65% reported fear of disclosure (Mills *et al., 2006).* At one study site one respondent mentioned that having a cordial relationship with health care provider really improved her adherence treatment. Respondent who were open and had told friends and family members their HIV-status were supported during ARV treatment. Employers were also not supportive. This finding agrees with studies in USA and Belgium that positive interpersonal relationship made adherence to ARV treatment successful (Mills *et al.,* 2006).

Interviews found that some patients at one point had preferred traditional medicine because of the belief that traditional medicine could cure HIV, which is not true. These patients could alternate ARV drugs and traditional medicine or abandon ARV medicine and take traditional medicine for some time. This was dangerous because of drug interactions. Three patients said that they consulted spiritual healers, they were prayed, believed they got healed and abandoned ARV treatment. They later got very ill and resumed to ARV treatment but they had already defaulted. Therefore, religion also influenced non-adherence to ART.

# 5.3 Assessing how accessibility affect adherence

Distance, transport, and finance, were found to be barriers to adherence. Some participants reported travelling long kilometers in order to access the health services. A study in Addis Ababa found that patients walked for up to two hours before reaching the nearest health facility (Demisse, Lindhtjorn & Berhane, 2002).

Poor weather was also cited as cause for some patients 8% to fail to beat the appointment schedule, especially during rainy seasons, roads may be impassable, some feel weak to walk while raining. According to Veenstra, Whiteside, Laloo and Gibbs (2010) in Southern Africa there is a huge range of different crisis that can potentially undermine ART treatment. For example, the 2008 floods in Mozambique are known to have contributed to several health-related problems including poor access to health care.

# CHAPTER 6: SUMMARRY,

# CONCLUSIONS AND RECOMMENDATIONS

# 6.1 Overview of summary, conclusions and recommendations

This chapter sums up the findings of the research; outlines the implications of the study findings; conclusions based on the research findings; recommendations and suggestions for further research.

# 6.2 Summary of findings

The study set out to establish the factors that influence non-adherence to antiretroviral therapy among AIDS patients. The study demonstrates that the research questions and objectives had been met. The study findings indicated that the level of adherence (83%) in Chepkanga health Centre, Uasin Gishu County is sub optimal (less than 95%).Females accounted for the highest number of respondents with most in the age bracket of 30-39 years old. Most of the respondents were married, this shows that married people can adhere easily because they can remind each other to take their ARV, even if they are discordant couples.

Most of the people didn’t have formal employment; this means they struggled to get income to support their families and themselves. A great percentage of the patients were the breadwinners for their household. This finding indicates that respondents who were employed adhered much more than unemployed respondents. This finding suggests that lack of enough food influenced non- adherence to ART. The more meals one could afford in day the more that patient adhered to ART and those who got food from their farm were able to adhere to ART than those who mainly purchased food because they were food secure.

Most patients (98%) had a positive attitude toward ART and they all approved ART for management of AIDS. Majority of respondents 77 % said that they did not avoid friends or relatives and neither did friends or relatives avoid them during ARV treatment. This finding found that some of the patients still had stigmatization and fair of disclosure, but the rest were accepted by their families and community, from that they had great support leading to go adherence. The study findings indicated that most patients had positive perception of ARV, with good health outcome such as growing big and less frequent illnesses.

32%percent of the patient reported comes from far the hospital, while the rest were not that far. This study found that the patients who came from far accounted for highest percentage of non-adherents of ART. Another finding is that stigmatization also led some participant to access medical treatment at clinics that are far from their homes to avoid being seen by people known to them when they go for follow-up appointments. The study also found out that poor weather also hindered accessibility of ART by some patients 8% who failed to beat the appointment schedule, especially during rainy seasons, roads may be impassable, and some feel weak to walk while raining

# 6.3 Conclusions

Level of adherence (83%) was sub-optimal but comparable to other developing countries.

1. Taking ARV drugs without eating any food made patients suffer from side effects thus making them avoid taking the medication. Poverty contributes to lack of food
2. Stigma, negative perception, lack of family and community support are some obstacles to ART adherence
3. Long travel and distance to hospital for ART and poor weather is barrier to accessibility of ART during such rainy seasons hence a major hinder to optimal adherence

# 6.4 Recommendations

To enhance ART adherence, the study recommends to the Ministry of Health and other stakeholders to:

1. Develop strategies to ensure food security in households with people living with HIV and AIDS and enhance home farming.
2. Intensify health education campaigns against stigma and promote family and community support for people living with HIV and AIDS.
3. Encourage those travelling from far to try and access the ART services from nearby health facility
4. Empower the PLWHA economically through creation of employment and business opportunities as well as safety net programs to enable them purchase medication for opportunistic infections and food and also pay transport costs to the health facilities that provide ART.

# 6.5 Further Study

1. Study should be done to establish why stigmatization is still influencing patient’s perceptions.
2. Study on nutritional values needed for adherence of ART among the poor people.

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# APPENDIX I Consent Form

Hello, my name is Simon Kibet. I am an undergraduate student doing BSc Public Health at JARAMOGI OGINGA ODINDA UNIVERSITY OF SCIENCE AND TECHNOLOGY, Bondo. Today I am here to carry out a study on treatment among HIV - patients. The information you give is important and therefore kindly be sincere in your responses. I assure you that the information you give will be handled with total confidence and at no time will you be required to identify yourself by name. In order to take part, you must have started treatment. Kindly answer the questions as completely and as clearly as possible. You are free to choose either to participate or not to participate.

Do you agree to participate in the study? No [] Yes []

If Yes,

Signature………………………………………………. Date…………………………………

# APPENDIX II

## Quantitative Data Collection Tool (Structured Questionnaire)

Structured interview guide for the HIV and AIDS patients who are on treatment.

**(A) Basic Information**

1. Date of interview…………………………………….
2. Code of the interview………………………………

**(B) Socio-Demographic Information**

1. Sex/ Gender of participant (1) Male [] (2) Female []
2. Age in years:

18-20 years []

20-29 years []

30-39 years []

40-49years []

50-59 years []

60+ []

1. What is your current marital status?

(1). Single (not married and not living with a partner) []

(2) Married (monogamous/polygamous) []

(3). Separated (currently not living together but not divorced) []

* + 1. Divorced []
    2. Widowed/widower []

6) Co-habiting (not married but lives with a partner) []

6). Number of children……………………………….

6.1 Age of the last born……………………………….

7 What is your level of education?

1. None []
2. Primary education Stud 1- 8 []
3. Secondary education form 1- IV []
4. University/college education []
5. Adult education []

**(C) Poverty Information**

8). What is/was your main occupation in the last month?

1. Student []
2. Employed full time []
3. Employed part time []
4. Business/self-employed. [ ]
5. Sick leave []
6. Unemployed []
7. Others (specify) ……………………………………….

9). Who is the breadwinner in your family? ………………………………..

10). What’s the approximate monthly income?

0 – 1000 KS []

1000 – 5000 KS []

5000 – 10000 KS []

10000 – 20000 KS []

20000 – Above []

Do you find it easy to buy other medications? Yes [] No [] Food and Nutrition Security.

11) What is the main source of food for your household?

1. Purchase (market/grocery) 4) Welfare/NGO support []
2. Household farm/garden 5) Other (specify) ……………….
3. Relatives/friends

12). What percent of food currently consumed is from the source mentioned above? ……. %

Don’t know []

13). About how much money in Kenya Shillings do you usually spend on buying food for one day in your household? ………………. don’t know []

14). How many meals do you afford to take in day? (1). One [] (2). Two [] (3). Three []

15). Do you find it easy to balance both the ARV with the required food? Yes [] No []

**(H) Attitude/Perceptions towards ART**

16). What is your opinion regarding ART therapy 1) Approve [] (2) Disagree []?

(3) Undecided []

17). If disapprove what are the reasons? ……………………………………………………..

18). Do you avoid friends or relatives because of your illness? No, [] Yes, []

19). In the last one month did you have any family or community member who supported

(reminded or encouraged) you to take your ARV medications? No, [] Yes, [] 20). If yes, who was the person who supported you? (Check one response only)

1. Spouse []
2. Immediate member of family (specify) []
3. Nurse []
4. Doctor []
5. Social Worker/Community Health Worker []
6. Friend []
7. Other specify ………………………………………….

21). Do you think that ARV will have a positive effect on your health? No, [] Yes, []

22). What benefits have you gained from using ARV drugs (1) Gained more weight/energy []

2). No more frequent sickness [] (3) growing normally now [] 23). In your own view what are ARV drugs used for?

1. Curing []
2. Reducing pain []
3. Reducing progression of HIV []
4. I don't know []

**E. Accessibility to ART**

24). Is it far from home to get to the hospital? Yes [] No []

25). Where is your home ………………………………………………….

26). Which means of transport do you use?

Matatu []

Private Car []

Boda boda []

Walking []

27). Have you ever missed an appointment day? Yes [] No [] 28). If yes, what was the reason?

Lack of time []

Poor weather (rainy) []

Lack of transport means []

Lack of transport fare []

**Thank you for taking time to participate in this interview**

# APPENDIX III WORK PLAN

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CODE | ACTIVITY |  | SEPT | OCT | NOV | DEC | JAN | FEB | MAR |
| 1. | INTRODUCTION TO RESEARCH |  |  |  |  |  |  |  |  |
| 2. | THEORY LITERATURE REVIEW |  |  |  |  |  |  |  |  |
| 3. | PROPOSAL WRITING |  |  |  |  |  |  |  |  |
| 4. | APPRAISAL OF THE STUDY |  |  |  |  |  |  |  |  |
| 5. | DATA COLLECTION |  |  |  |  |  |  |  |  |
| 6. | DATA ANALYSIS |  |  |  |  |  |  |  |  |
| 7. | REPORT WRITING |  |  |  |  |  |  |  |  |
| 8. | REPORT PRESENTATION |  |  |  |  |  |  |  |  |
| 9. | REPORT SUBMISSION |  |  |  |  |  |  |  |  |

# APENDIX IV

# BUDGET

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S/NO. | ITEMS | UNIT | QUANTITY | UNIT COST(KS) | TOTAL COST(Ksh) |
| 1. | **STATIONERIES;** |  |  |  |  |
|  | Ball pens | PCS | 6 | 20 | 120 |
|  | Pencils | PCS | 5 | 10 | 50 |
|  | Erasers | PCS | 5 | 20 | 100 |
|  | Ruler(30 centimeter’s) | PCS | 1 | 20 | 20 |
|  | Marker pens | PCS | 5 | 60 | 300 |
|  | Ruled papers | REAM | 1 | 300 | 300 |
|  | Photocopying papers | REAM | 1 | 600 | 600 |
|  | **SUB TOTAL** |  |  |  | 1,490 |
|  |  |  |  |  |  |
| 2. | **TYPING AND PRINTING** |  |  |  |  |
|  | Typesetting | PGS | 30 | 30 | 900 |
|  | Photocopying | PGS | 50 | 3 | 150 |
|  | Internet browsing | MINUTES | 150 | 2 | 300 |
|  | Flash disk | PCS | 1 | 850 | 850 |
|  | Computer printing | PGS | 30 | 10 | 300 |
|  | Spiral binding | BOOKLET | 4 | 150 | 600 |
|  | **SUB TOTAL** |  |  |  | 3,100 |
|  |  |  |  |  |  |
| 3. | **PERSONAL ALLOWANCES** |  |  |  |  |
|  | Transport | DAYS | 24 | 60 | 1440 |
|  | Lunch | DAYS | 24 | 300 | 7200 |
|  | Airtime | DAYS | 6 | 100 | 600 |
|  | **SUB TOTAL** |  |  |  | 9,240 |
|  | **GROSS TOTAL** |  |  |  | 13,830 |
|  | **CONTIGENCIES (30%)** |  |  |  | 4,149 |
|  | **GRAND TOTAL** |  |  |  | 17,979 |