EFFECTS OF ALCOHOLISM ON THE INDIVIDUAL AND FAMILY, AND HOW THIS AFFECTS ADHERENCE TO ANTIRETROVIRAL THERAPY AMONG PEOPLE LIVING WITH HIV/AIDS-CASE OF LOKORI IN TURKANA EAST

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DECLARATION

"I, Selina W. Mbuli do hereby attest that I am the sole author of this project and that its contents are the result of the readings and research I have done, and that all citation from other scholars has been acknowledged."

Signature…….

Date…07/01/2022…….

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I am grateful to the Congregation of the Sisters of Mercy-an International Congregation of Religious Women (I am a member of this Congregation) dedicated to the service of the poor and the Marginalized who have formed me in to the person I have become today.

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Special thanks to each and every one of you and I wish you all FULNESS OF HEALTH and WELL BEING

DEDICATION

I dedicate this work to all our clients (PLWH/A) in our clinics encouraging them to own up this slogan, “It starts with ME” and to take small and steady steps, radically committing to stop HIV spread…living one day at a time until No man, woman or child is infected with HIV.

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LIST OF ABBREVIATIONS

AA	Alcoholic Anonymous
AIDS	Acquired Immuno-Deficiency Syndrome
ART	Antiretroviral Therapy
ARVs	Antiretrovirals or Antiretroviral Drugs
AUDIT	Alcohol Use Disorder Identification Test
CCC	Comprehensive Care Clinic or Centre
CDC	Centers for Disease Control and Prevention
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immuno-Deficiency Virus
IDPs	Internally Displaced Persons
MOH	Ministry of Health
NACC	(Kenya)National AIDS Control Council
NASCOP	National AIDS & STI (Sexually Transmitted Infections) Control Program
OIs	Opportunistic Infections
PLWH/A	People Living with HIV/AIDS
TCG	Turkana County Government
UNAIDS	United Nations Program on HIV/AIDS

ABSTRACT

Background

Acquired Immunodeficiency Syndrome (AIDS) continues to be a challenge to the world with current (UNAIDS-2020) global estimates of close to 38 million people living with HIV/AIDS.

The discovery of Anti-Retro-Viral drugs (ART) in the 1990s transformed HIV/AIDS from a death sentence and a dark reality to a chronic condition that is manageable though not curable.

Great milestones have been achieved and there is heightened awareness to demystify the pandemic and more people have come out in the light and joined the fight to wipe-out HIV from the face of the earth.

However, successful long-term treatment of HIV/AIDS requires very strict adherence of highly active anti-retro-viral therapy (HAART) of at least 95%.

Back in 2014, when the UNAIDS' most ambitious fast-track strategy of 95:95:95 became the talk of town, it was like a distant dream for people on the ground in this part of the world (Lokori-Turkana East) who are still battling with issues of HIV related stigma and discrimination, alcoholism, gender disparity and ART non-adherence among others.

This strategy aimed to end the pandemic by 2030. It meant that 95% of all people living with HIV/AIDS (PLWH/A) know their HIV status i.e. are diagnosed through counselling and testing; 95% of those who know their HIV status are linked to care and are started on ARVs and the last 95% meant that 95% of all those who are on ART achieve viral suppression therefore they cannot pass on the virus to others-thus ending the pandemic.

That being the case, it meant that strict adherence to ART becomes a key factor in achieving viral suppression and stopping HIV infection.

This research paper therefore seeks to investigate the effects alcohol might have on the individual and family and how these might affect ART adherence.

There are studies available that show that non-adherence to therapy is widespread among patients with chronic diseases and there are many reasons to that including substance abuse, ignorance, pill burden, drug side effects among others. This research pays close attention to the role alcohol plays in relation to ART non-adherence and the dangers it poses on the individual and society.

The knowledge generated will be useful in the fight against HIV new infections but more so in the fight against the development and transmission of regimen resistant HIV strains which may result from poor ART adherence. It will help to support intervention strategies for Counselors and ART Providers as well as future recommendations to funding agencies and sponsors.

A possible breakthrough is envisioned in the form of setting up of Alcohol-Focused Adherence Counseling as part of the package to all clients prior to initiating ART and in subsequent clinic visits in all Comprehensive Care Clinics within the region, capacity building and support supervision of all clinic care workers/ ART adherence counsellors and regular AA Group Training/therapy sessions for follow-up and continuum of care.

Design

The study used the ex Post Facto design to examine how an independent variable

(alcoholism) present prior to the study, affects a dependent variable (ART adherence).

It was carried out in Lokori Primary Health Care Projects' Catchment Population which includes the main Comprehensive Care Centre and its seven outreaches.

Data was collected using questionnaires and 'one-on-one' interviews with 150

clients living with HIV/AIDS who were on antiretroviral therapy.

Results

Results indicated that majority of clients who were consuming alcohol missed their clinic

appointment date, did not collect their monthly supply of Antiretroviral drugs and had

adherence grade of below the optimum accepted levels for viral suppression.

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CHAPTER ONE

INTRODUCTION

The study investigates the effects of alcoholism on the individual and family and how this affects Antiretroviral Therapy (ART) adherence among adults living with HIV/AIDS who are undergoing HIV care offered in Lokori Primary Health Care (PHC) Project's Catchment area, Turkana East-Sub County.

Turkana East sub-county is one of the seven sub-counties of the Large Turkana County. Turkana county is situated in the North Western Part of Kenya bordering Ethiopia and S. Sudan to the North, Uganda to the west and the Kenyan Counties of Baringo and Samburu to the south and east respectively. Turkana East measures about 12,000 km sq. and is home to about 151,000 inhabitants who are drawn from the purely nomadic, semi-nomadic and settled communities. The main socio-economic activity is pastoralism and a handful of households who live by the River Kerio do small scale farming using irrigation canals.

Lokori PHC is a Faith Based Institution under the Catholic Diocese of Lodwar and it is classified as one of the high-volume HIV care facilities in Turkana. Clients are drawn from the purely Nomadic, Semi-nomadic or the settled communities as well as people from down Country Kenya who are residents in Lokori mainly Government employees, Teachers Service Commission (TCS) employees, Non-Governmental Organizations (NGO) and Parastatal personnel or business people and IDPs

1.1 Background of the study

Although COVID-19 has shaken the world immeasurably since last year and in ways disrupted HIV routine care, Acquired Immunodeficiency Syndrome (AIDS) still remains one of the worst epidemics the world has ever witnessed. The global estimates (UNAIDS, 2020) show that close to 38 million People are living with HIV/AIDS (PLWH/A) and in 2019 alone about 690,000 people were reported to have died of AIDS-related illnesses.

Two thirds of the global population who are PLWH/A live in Sub-Saharan Africa.

Global Statistics: Global HIV/AIDS Statistics-Facts on Sheet / UNAIDS 2020

38 million people living with HIV/AIDS

25.4 million People (PLWH/A) accessing Antiretroviral Therapy (ART) (Jun 2020).

12.6 million PLWH/A still awaiting to start ART

1.7 million New HIV infections

'Gender based Violence (GBV)and inequalities continue to drive the epidemic', notes Ms Winnie Byanyima (UNAIDS Executive Director)-UNAIDS Global Report 2020

Kenya is one of the six high burden Countries in Africa with about 1.5 million PLWH/A by end of 2017 (National AIDS Control Council-NACC,2018 Report.)

The National HIV prevalence rate stands at 4.9%

The top five high prevalence counties in Kenya with a prevalence of more than 9% were: Homa Bay, Kisumu, Siaya, Migori and Busia.

HIV Burden in Turkana County:

Turkana County had a prevalence rate of 6.8%-NACC, 2018 Report.

This reality is a wake-up call bearing in mind the relatively small average general population density of the County and its Sub-Counties of 10 persons per km sq.

For instance: According to Kenya Population and Housing Census (KPHC), 2009 results, the County population stood at 855,399 and was projected to be at 1,427,729 in 2017. This projection is based on a population growth rate of 6.4% assuming constant mortality and fertility rates.

Lodwar town itself (the County's headquarters) has a higher population density and has been categorized as a high-risk zone (HRZ) for HIV transmission due to the following factors:

- Myriad of night activities ranging from fish mongers, traditional beads, mats and basket traders
- Numerous travelers (truck drivers and transporters) en-route to Ethiopia and South Sudan.
- The bulging Refugee Population at the Kakuma Camp (mainly from war-torn South Sudan, Somalia, DR. Congo, Rwanda and Burundi).

- Big influx of homeless individuals (Internally Displaced People – IDPs) from down Country Kenya following the 2007/2008 post-election violence (PEV). Lodwar had at least three registered IDP camps.

The above realities pose significant challenges in the fight against HIV/AIDS in Turkana County.

With all the above realities in mind, we now look at alcohol and note what effects it might have on the individual and family in relation to fighting HIV/AIDS through strict adherence to Antiretroviral therapy in Turkana.

Alcohol is a drug and its consumption at elevated levels has been experienced in all parts of the world with worrying negative outcomes. In Africa alcohol is so far the most popular drug of abuse and is generally used and abused by men and women of all ages.

We can therefore assume that some HIV infected individuals who are on antiretroviral therapy (ART) do consume alcohol.

Alcohol (Ethanol) is a Central Nervous System (CNS) depressant.

It exerts its effects by several mechanisms and binds directly to the GABA receptors (gamma-amino butyric acid) in the CNS, causing sedation and also directly affecting cardiac, hepatic and thyroid tissues.

Large amounts of alcohol consumed rapidly or chronically can cause respiratory depression, coma, and death.

A mild alcohol withdrawal syndrome includes:

tremors, weakness, headache, sweating and gastro-intestinal symptoms. Symptoms usually begin within six hours of cessation.

Some patients have generalized tonic-clonic seizures called alcoholic epilepsy but usually not more than two seizures in short succession.

Hallucinations without other impairment of consciousness follow abrupt cessation from prolonged, excessive alcohol use, usually within 12 to 24 hours.

Hallucinations are typically visual but may also include auditory illusions with vivid and frightening dreams. The syndrome may resemble schizophrenia.

Delirium tremens refers to life threatening autonomic instability that occurs in severe withdrawal.

Alcohol impairs one's judgment, removes inhibitions and can contribute to risky behavior such as irresponsible sex and spread of HIV infection.

In 2014, MOH-TCG officials working closely with International Rescue Community in Turkana identified a local brew called "kaada" as a contributor to the rising number of new infections with many drinkers of the brew suspected to engage in risky sexual behavior.

In this particular community, alcohol is consumed liberally during monthly celebrations to welcome the full moon, at traditional weddings, rites of passages and during victories such as after successful raids.

Recently, a thick alcoholic brew made from maize flour or millet has been used as food (to 'hold the tummy') when there is no food available.

The discovery of antiretroviral therapy (ART) in the 1990s transformed HIV/AIDS from a death sentence to a chronic condition that is manageable though not curable. Antiretroviral drugs delay progression to AIDs.

They are essential for improving and maintaining physical health of the infected person, reducing HIV viral load and reducing morbidity (illness) and mortality (deaths) among people living with HIV/AIDS.

However, for ART to work effectively so as to achieve maximum viral suppression, the individual must strictly adhere to the ART. This means that the drugs in their right combinations must be taken at the right time, in correct dosages and at the required frequency, every single day for the rest of the person's life. For example: Drug X must be taken orally, twice per day (12 hourly) every single day-for life!

Other instructions related to ART must likewise be adhered to strictly.

For example:

- avoidance of alcohol and other substances of abuse,
- testing and treatment of spouse,
- use of condoms to protect self from re-infection or to avoid infecting other people,
- nutrition and

- Other lifestyle changes that promote health and wellbeing.
- Availability of a treatment buddy and if possible disclosure to spouse / partner /close family for psycho-social support

With this awareness, it would be interesting to find out whether alcoholism does affect ART adherence among those on treatment.

1.2 Statement of the Problem:

A number of people have researched on alcoholism and demonstrated its devastating consequences on the individual's physical health (leading to organic damage like liver cirrhosis or brain damage). Others have looked at alcohol and family and demonstrated increased cases of domestic violence and break up – divorce or separation and yet others have looked at alcohol and its effects on economy and education contributing to poor performance in schools due to absentee alcoholic teachers.

There are other studies that have demonstrated a direct relationship between alcoholism and increased rates of HIV transmission.

However, there is little research done on alcoholism and its effects on ART adherence. This knowledge gap if filled could be useful in the fight against HIV/AIDS and more so the transmission of HIV resistant strains developing due to poor ART adherence.

Thirdly, for counselors and ART providers, it might open an opportunity to look into the possibility of alcohol – focused adherence counseling, training for health care workers / ART Adherence

counselors as part of the package for running CCCs and setting up of AA support groups among others.

1.3 Objectives of the study

1.3.1 Broad objective

The main objective of this study is to determine whether there is a relationship between alcohol consumption and ART adherence.

1.3.2 Specific objectives

i. To identify behaviors of concern among alcoholics that could negatively affect ART adherence.
ii. To find out the factors which make patients on ART to engage in alcohol consumption.
iii. To establish the contexts under which patients on ART miss their daily doses.
iv. To examine effects of alcoholism on family bond/spousal relationship and whether this may reflect on adherence to ART.

1.4 Research questions

Based on the above objectives, the following questions have been formulated:

i. Are there some behaviors of concern to ART that alcoholics exhibit?
ii. What factors make patients on ART to engage in alcohol consumption?

iii. What are the contexts under which patients on ART miss their daily doses?

iv. What are the effects of alcoholism on family bond/spousal relationship and in what ways does it affect adherence to ART?

1.5 Justification and significance

HIV/AIDS continues to be a threat to human existence with an overwhelming global estimate of 38 million PHWH/A, 2/3 of whom live in Sub-Saharan Africa. Kenya has a prevalence rat of 4.9% and about 1.5 million people living with HIV/AIDS. The number of new HIV infections is 44,789 with reported 23,902 AIDS related deaths. Turkana county was cited to have 21,343 PLWH/A and 403 new infections. (National Aids Control Council – NACC – Kenya HIV estimates, June 2018).

ART is a major step in the management of HIV/AIDS transforming it from a fatal disease to a manageable condition thus giving the infected a second chance in life, leading to improved quality of life and longevity. To achieve this, the ART must be strictly adhered to.

It is a life – long commitment which requires good discipline, strong will power and determination.

A person on ART needs a lot of positive self-talk, affirmation from self and others especially close family members in form of psycho-social support and encouragement.

Alcohol stands out as a major challenge in our society in many sectors. Studies have demonstrated its effects on families highlighting increased cases of domestic violence, poor parenting leading to dysfunctional families, poor school performance among others.

Determining whether alcoholism contributes to poor adherence to ART can provide important information that can be used to develop policies and programs to improve HIV/AIDS care among PLWH/A and to improve their quality of life.

It can also open up opportunities to staff (ART providers) training on emphasis of alcohol focused adherence counseling to PLWH/A or even to re-think the possibilities of setting up rehabilitation services and support programs such as Alcoholic Anonymous (AA).

The study can also benefit relatives of care givers of PLWH/A.

Consequently, it can act as an authentic document to further consultation with stakeholders and funding agencies for continued support of programs that offer holistic support to PLWH/A.

Information about negative effects of alcoholism on ART adherence can help patients on ART and motivate them to seek for help on how to quit consuming alcohol and empower them to avoid risky behaviors that lure and tempt them to alcohol consumption.

1.6 Hypothesis:

There is a correlation between alcohol consumption and ART non-adherence among people living with HIV/AIDS who are on care.

1.7 Assumption

i. It is assumed that participants in this study who are beneficiaries of the program will be willing to cooperate.

ii. It is also assumed that people – both the affected and infected would be interested in finding solutions to improving adherence among PHWH/A who are on ART.

iii. Another assumption is that contracting HIV is a depressing reality and some people may engage in unhealthy behaviors such as alcohol consumption to mask this reality.

iv. Finally, people assume that clients open up more easily to their regular care provider/clinicians and take their advice and recommendations seriously.

1.8 Scope and Limitation of the Study

Scope

The proposed study covers Lokori PHC Catchment area in Turkana East Sub-County.

It targets 150 adult clients aged over 15 years who are on ART.

Why 15 years and above? In this particular community, people especially women marry when they are quite young particularly in areas where schooling for girls is not embraced.

Why no upper age-limit? Majority of the adult population is illiterate and establishing a chronological age may not be possible. It is not uncommon to encounter a real old looking man married to a 15 years old girl – may be as his 2^{nd}, 3^{rd} or even 4^{th} wife!

Selection of participants

The participants will be randomly selected e.g. on a busy clinic day, the first 20 clients to report for review and collection of monthly supply of ART will be picked on day one.

On the days that follow, every second client will be picked until the target number of 150 is realized.

Why Lokori area?

Lokori is a high-volume facility and one of the oldest and thriving CCC clinics in Turkana East

The Centre offers HIV care (ART)to clients from the three categories of inhabitants-settled, semi-settled and purely nomadic population through their monthly mobile clinics

It is also where the researcher is based for more than a decade and therefore the research findings are most relevant and will be used as first-hand information to re-evaluate and re-think way forward in offering holistic, need based care.

Limitations of the Study

Research findings about clients from Turkana East-Sub County cannot be generalized as true for all other areas within the Republic of Kenya or even the rest of Africa in general.

There are some unique characteristics that will only be encountered in Turkana.

For example: A Nomadic family-extended, polygamous, traditional and discordant! This family, cattle and all…settling in one location for about eight weeks and then moving on to a new location

where there is security, water and pasture. At the same time, the infected spouse is trying to adhere to his/her antiretroviral treatment and the affected members trying to be supportive. The ART Provider has to find ways to track their migration route in order to encounter the family in theirs next location for their monthly supply of ARVs.

Secondly, the harsh climatic conditions make both the infected and the affected vulnerable, their needs multiplied and sometimes such individuals are uncooperative and less interested in giving information to strangers such as researchers.

Finally, the poor infrastructure, expansive terrain and insecurity may pose a challenge and limit the interaction of the researcher with the clients and their ART Providers.

1.9 Definition of Terms and Abbreviations

AIDS	Acquired Immuno-Deficiency Syndrome
HIV	Human Immuno-Deficiency Virus
ART	Antiretroviral Therapy
ARVs	Antiretrovirals or Antiretroviral drugs.
HAART	Highly Active Antiretroviral Therapy
CCC	Comprehensive Care Clinic /Centre
OIs	Opportunistic Infections

IDPs Internally Displaced Persons.

AUDIT Alcohol Use Disorder Identification Test.

PLWH/A People Living with HIV/AIDS.

Alcoholism

A chronic and often progressive disease that includes problem controlling one's drinking, being pre-occupied with alcohol, continuing to use alcohol even when it causes problems, having to drink more to get the same effect (physical dependence), or having withdrawal symptoms when you rapidly decrease or stop drinking.

If you have alcoholism, you cannot consistently, predict how much you will drink, how long you will drink, or what consequences will occur from your drinking.

According to the DSM-5, a "substance use disorder describes a problematic pattern of using alcohol or another substance that results in impairment in daily life or noticeable distress."

As with most addiction problems, despite any consequences a person who has a problem with either alcoholism or drugs suffers, they will generally continue to use their drug of choice.

They may make half-hearted attempts to stop or cut back their use, usually to no avail.

The DSM-5 states that in order for a person to be diagnosed with a disorder due to a substance, they must display 2 of the following 11 symptoms within 12-months:

- Consuming more alcohol or other substance than originally planned
- Worrying about stopping or consistently failed efforts to control one's use
- Spending a large amount of time using drugs/alcohol, or doing whatever is needed to obtain them
- Use of the substance results in failure to "fulfill major role obligations" such as at home, work, or school.
- "Craving" the substance (alcohol or drug)
- Continuing the use of a substance despite health problems caused or worsened by it.

Psychological problems may include depressed mood, sleep disturbance, anxiety, or "blackouts'' or physical health problems such as liver cirrhosis among many.

- Continuing the use of a substance despite it having negative effects in relationships with others (for example, using even though it leads to fights or despite people's objecting to it).
- Repeated use of the substance in a dangerous situation (for example, when having to operate heavy machinery, when driving a car)
- Giving up or reducing activities in a person's life because of the drug/alcohol use
- Building up a tolerance to the alcohol or drug. Tolerance is defined by the DSM-5 as "either needing to use noticeably larger amounts over time to get the desired effect or noticing less of an effect over time after repeated use of the same amount."
- Experiencing withdrawal symptoms after stopping use. Withdrawal symptoms typically include, according to the DSM-5: "anxiety, irritability, fatigue, nausea/vomiting, hand tremor or seizure in the case of alcohol."

Prevalence:

It means extensiveness or commonness. Prevalence is a statistical concept referring to the total number of individuals in a population who have a disease or health condition at a specific period of time. It is usually expressed as a percentage of the population.

Incidence:

Is the number of new cases of a condition, symptom, injury or death that develop during a specific time period such as in a year.

Antiretroviral Therapy (ART)

Antiretroviral therapy is the comprehensive management of HIV, treatment, care and support often available at a Comprehensive Care Centre (CCC).

It includes the use of medications (ARVs-Antiretroviral drugs) for the treatment of infection by a specific type of virus, retrovirus, primarily HIV.

ART is recommended for everyone who has HIV. People with HIV should start ART as soon as possible. ART can not cure HIV but the use of these medication helps the infected persons to live longer, healthier lives.

Standard ART consists of at least three drugs for maximum suppression of the HIV virus and for stopping the progression of HIV to AIDS, thus helps reduce the risk of HIV transmission.

The main goal of ART is to reduce the person's viral load to undetectable level. i.e. the level of HIV virus in the blood of that person is too low to be detected by a viral load test**.**

Note. Those people with HIV who maintain an undetectable viral load through strict adherence to ART have effectively no risk of transmitting HIV to their HIV-negative partners through sex or mother to child transmission of HIV (MTCT)

Adherence to ART

ART adherence can be defined as a patient's ability to follow treatment plan, take medications at prescribed times, dosages and frequencies, follow instructions regarding food and other medications and make necessary lifestyle adjustments.

CD4 Count- Test that measures the number of CD4 cells in a person's blood.

CD4 Cells (also known as T-cells), are white blood cells that fight infections and play an important role in one's immune system. HIV attacks and destroys one's CD4 cells. Very low CD4 cell count will lead to HIV progression to AIDS

Opportunistic Infections (OIs)

Opportunistic infections are infections that are caused by bacterial, viral, fungal or protozoan pathogens that take advantage of a host with a weakened immune system.

Many of these pathogens do not cause disease in a healthy host that has a normal immune system.

OIs tend to occur more frequently and are more severe in those individuals with a weak immune system such as in HIV.

CHAPTER TWO

Theoretical Framework and Literature Review

2.1 Introduction

This chapter introduces the theories that inform the study topic thus throwing more light in to the subject matter.

Literature review enables the researcher to acquire full understanding of the topic and its research questions.

It looks critically at what has already been said / researched on, how ideas are related, the key issues surrounding the topic and seeks to identify gaps or areas of neglect.

These gaps form the basis on which the study is located and why it is justifiable.

2.2 Biological Theories

These theories indicate that genetics and other biological factors are involved in the development of alcohol dependence. Research has confirmed that some people especially men who have dependent family members have some kind of genetic predisposition to developing alcoholism. Such a person may have inherited certain genetic characteristics that put him/her at a higher risk of developing alcohol dependency if he/she drinks heavily.

There is evidence that certain kinds of brain chemistry are involved in addiction and other compulsion in some people (WHO, 2004). For example, brain chemicals such as dopamine and serotonin.

Low dopamine levels are associated with stress while high levels of the same leads to feelings of euphoria.

Alcohol intake can temporary increase dopamine level in the blood and thus makes the individual feel good. She/he may use alcohol again to get the same good feeling. Frequent heavy drinking leads to interference of brain function and brain chemistry impairment and other organ failure such as liver, pancreas and kidneys.

Heavy alcohol consumption coupled with poor nutrition worsens the liver and pancreatic malfunctioning.

These organs are vital for vitamin, protein and nutrient processing and once damaged the individual's health and nutritional status continues to be compromised.

This theory informs my study because when a person is diagnosed with HIV, they may feel down, lost and stressed. If they are alcohol depended, they may choose to go for it because of its rewarding feeling of pleasure/euphoria and indifference to pain.

They will keep on going for more to escape the painful feeling of facing the reality that they are actually HIV positive.

At the same time the huge amounts of alcohol they are consuming everyday have the potential of destroying their liver, pancreas and the kidneys.

Moreover, antiretroviral drugs are majorly metabolized in the liver and excreted through the kidneys.

If any of these vital organs is damaged or not functioning properly, the individual will develop toxicity and the ARVs will not function effectively and may worsen the situation or even lead of death.

Alcohol causes impairment of judgment, reduces reactivity, slows problems solving skills and generally depresses the brain and dulls its functioning.

Adherence to life-long ART requires a sound mind, self-control and a strong personal sense of responsibility and will power.

Therefore, if the brain is dulled by alcohol, adherence is compromised due to factors such as forgetting, laxity, carelessness, late home coming among others.

Under the influence of alcohol, a patient may confuse his/her doses or the drugs; they may either under or over-dose themselves, lose some pills or drop them in water or leave them along the road etc.

They may also engage in irresponsible sex behavior and this may put them in to risk of being re-infected or infecting others.

Most alcoholics have mismanaged their money and other resources. They may have constrained relationships with their spouses or / and children and may not have a committed buddy/family support system to remind them to take their pills

They will eat poorly, drink dirty water or contaminated soup in filthy places, sleep away from the comfort of their beds, may be somewhere in a drainage canal or in the open exposed to cold or rain and are highly susceptible to respiratory infections.

HIV and TB are correlated due to the lowered immunity and the activation of the 'gon-focus' (i.e. the primary infection).

Thus, when an already weakened lung is exposed to such carelessness, the fellow will most likely contract an infection.

2.3 The Health Belief Model (HBM)

2.3.1. Definition and Rationale for the Health Belief Model

The Health Belief Model (HBM) is used to understand why people accept preventive health services and why they do or do not adhere to other kinds of health regimens.

It was developed in the early 1950s, and has been used with great success in promotion of greater condom use, seat belt use, medical compliance/adherence, and health screening use among other behaviors.

It has been used across the health continuum, including disease prevention, early disease detection, and illness and sick-role behavior (Becker and Maiman,1975: Jantz and Becker, 1984)

It is among the most widely applied theoretical foundations for the study of health behavior change and is appealing and useful to many professionals' keen on behavioral change interventions such as psychologists, health educators, nurses, physicians etc.

The HBM is based on the understanding that a person will take a health-related action (i.e., use condoms or abstain from alcohol) if that person:

1. feels that a negative health condition (i.e., HIV, ART drug resistance) can be avoided,

2. has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition (i.e., using condoms will be effective at preventing HIV, adhering to ART will lead to effective viral suppression), and

3. Believes that he/she can successfully take a recommended health action (i.e., he/she can use condoms comfortably and with confidence, can abstain from alcohol and take his/her ARVs as recommended).

The Health Belief Model is a framework for motivating people to take positive health actions that uses the desire to avoid a negative health consequence as the prime motivation.

For example

HIV is a negative health consequence, and the desire to avoid HIV can be used to motivate sexually active people into practicing safe sex.

Similarly, the perceived threat of HIV progression to AIDS due to ART non-adherence can be used to motivate People living with the virus to adhere to their antiretroviral therapy to counter that progression.

In the same manner, the perceived threat of a heart attack can be used to motivate a person with high blood pressure into exercising more often.

It's important to note that avoiding a negative health consequence is a key element of the HBM.

The HBM derives from psychological and behavioral theory with the foundation that the two components of health-related behavior are

1) The desire to avoid illness, or conversely get well if already ill; and

2) The belief that a specific health action will prevent, or cure, illness.

Ultimately, an individual's course of action often depends on the person's perceptions of the benefits and barriers related to health behavior.

There are six constructs of the HBM.

The first four constructs were developed as the original tenets of the HBM.

The last two were added as research about the HBM evolved.

1. Perceived susceptibility - This refers to a person's subjective perception of the risk of acquiring an illness or disease. There is wide variation in a person's feelings of personal vulnerability to an illness or disease.

2. Perceived severity - This refers to a person's feelings on the seriousness of contracting an illness or disease (or leaving the illness or disease untreated). There is wide variation in a person's feelings of severity, and often a person considers the medical consequences (e.g., death, disability) and social consequences (e.g., family life, social relationships) when evaluating the severity.

3. Perceived benefits - These refer to a person's perception of the effectiveness of various actions available to reduce the threat of illness or disease (or to cure illness or disease). The course of action a person takes in preventing (or curing) illness or disease relies on consideration and evaluation of both perceived susceptibility and perceived benefit, such that the person would accept the recommended health action if it was perceived as beneficial.

4. Perceived barriers – These are one’s feelings on the obstacles to performing a recommended health action. The person weighs the effectiveness of the actions against the perceptions that it may be expensive, dangerous (e.g., side effects), unpleasant (e.g., painful), time-consuming, or inconvenient.

5. Cue to action - This is the stimulus needed to trigger the decision-making process to accept a recommended health action. These cues can be internal (e.g., chest pains, wheezing, etc.) or external (e.g., advice from others, illness of family member, newspaper article, etc.).

6. Self-efficacy - This refers to the level of a person's confidence in his or her ability to successfully perform a behavior.

2.3.2 Health Belief Model: Major Concepts

The table below is a modification from “Theory at a Glance: A Guide for Health Promotion Practice" (1997)

Concept	Definition	Application
1. Perceived Susceptibility	One's belief/opinion of the chances of getting a condition	• Define population(s) at risk and their risk levels e.g., in case of HIV and ART therapy-those individuals who continue to consume alcohol, miss their drugs and eat poorly. • Personalize risk based on a person's traits or behaviors • Heighten perceived susceptibility if too low
2. Perceived Severity	One's belief of how serious a condition and its consequences are	• Specify and describe consequences of the risk and the condition e.g. acquiring TB or other OIs due to ART non-adherence.
3. Perceived Benefits	One's belief in the efficacy of the advised action to reduce risk or seriousness of impact	• Define action to take — how, where, when e.g.-Abstain from alcohol and other substances of abuse, adhere to your ART medications, eat a well-balanced diet, drink plenty of clean water, and enjoy a good night’s sleep. • Clarify the positive effects to be expected. e.g. increased CD4 Counts & Viral suppression leading to very low viral load, improved immunity, minimal or no opportunistic infections, improved general health.

		• Describe evidence of effectiveness
4. Perceived Barriers	One's belief in the tangible and psychological costs of the advised behavior	• Identify and reduce barriers through reassurance, incentives, and assistance
5. Cues to Action	Strategies to activate "readiness"	• Provide how-to information • Promote awareness • Provide reminders
6. Self-Efficacy	Confidence in one's ability to take-action	• Provide training, guidance, and positive reinforcement

In relation to HIV/AIDS, the Health Belief Model suggests that PLWH/A on care will choose to engage in health promoting behaviors, choose to adhere to their Antiretroviral drugs, abstain from alcohol and unsafe sex if they perceive they are susceptible to getting re-infected with HIV or contracting resistant strains, and that if this happens the seriousness of it could lead to being debilitated by the disease, getting organ failure and/or risking death from opportunistic infections.

2.3.3. Limitations of Health Belief Model

There are several limitations of the HBM such as:

- It does not take in to account behaviors that are performed for non-health related reasons like social acceptability.
- Environmental and / or economic factors that may prohibit or promote the recommended action are not factored.

- It assumes that everyone has access to equal amounts of information on the illness or disease.

2.4. The Theory of Planned Behavior

The Theory of Planned Behavior (TPB) started as the **Theory of Reasoned Action** in 1980 to predict an individual's intention to engage in a behavior at a specific time and place.

The theory was intended to explain all behaviors over which people have the ability to exert self-control.

The key component to this model is **behavioral intent.**

Behavioral intention is the perceived likelihood of a person carrying out a certain behavior.

The Theory of Planned Behavior (TPB) has been used successfully to predict and explain a wide range of health behaviors and intentions including smoking, drinking, health services utilization, breastfeeding, and substance use, among others.

The TPB states that behavioral achievement depends on both motivation (intention) and ability (behavioral control).

It distinguishes between three types of beliefs - behavioral, normative, and control.

It has six constructs that collectively represent a person's actual control over the behavior.

1. **Attitudes** – Refers to a person's individual feelings and evaluation of the behavior-favorable or no, good or bad?
2. **Behavioral intention** – refers to motivational factors that influence a given behavior. The stronger the intention to perform the behavior, the more likely the behavior will be performed.
3. **Subjective norms** - refers to the belief about whether most people approve or disapprove of the behavior (significant other's approval or disapproval)
4. **Social norms** - This refers to the customary codes of behavior in a group or people or larger cultural context. Social norms are considered normative, or standard, in a group of people.
5. **Perceived power** - This refers to the perceived presence of factors that may facilitate or impede performance of a behavior. Perceived power contributes to a person's perceived behavioral control over each of those factors.

6. **Perceived behavioral control** - This refers to a person's perception of the ease or difficulty of performing the behavior of interest. i.e. one's belief in self-do they believe that they can successfully carry out this behavior?

Example: Practicing Safe Sex by PLWH/A

Concept	**Definition**
Behavioral Intention	I intent to practice safe sex every time I have sex-intercourse
Attitude	Practicing safe sex is a good thing for me to do
Subjective Norm	Practicing safe sex is supported by society and my Health care (ART) provider
Perceived Behavioral Control	I have places I can go to get guidance and supply of condoms

2.4.1. Limitations of the Theory of Planned Behavior

Below are some limitations to TPB

- It assumes the person has acquired the opportunities and resources to be successful in performing the desired behavior, regardless of the intention.
- It does not account for other variables that factor into behavioral intention and motivation, such as fear, threat, mood, or past experience.
- While it does consider normative influences, it still does not consider environmental or economic factors that may influence a person's intention to perform a behavior.
- It assumes that behavior is the result of a linear decision-making process, and does not consider that it can change over time.

2.5. Literature review

Scientists confirm that alcohol use is highly prevalent globally with numerous negative consequences to human health including HIV progression in PLWH/A.

They have learned that alcohol use and abuse can contribute to the spread of HIV/AIDS and affect treatment for infected individuals.

Vegenas, P., et al (2015) in the Systematic review of The Impact of Alcohol Use and related disorders on the HIV Continuum of care puts emphasis on a sequence of targets for intervention that can result in viral suppression and which ultimately benefits the individual and the society.

Alcohol consumption has been associated with HIV disease progression but the nature of this progression is poorly understood.

Abusing alcohol or other drugs can impair judgment, leading a person to engage in risky sexual behavior.

People who drink heavy may delay getting tested for HIV and, if they do test positive, they may postpone seeking treatment.

Alcohol use and abuse may make it difficult for infected individuals to follow the complex medication regimen that is often prescribed to treat HIV/AIDS.

Alcohol abuse and dependency can contribute to conditions such as liver disease and other disorders that have an impact on the progression of HIV infection.

All of these factors increase the likelihood that an infected person will infect others or will go on decline to develop AIDS.

Studies have shown that patients who stick to a careful medication regimen (i.e. taking several medications at specific times throughout the day) may live from 20-40 years with HIV and do not always die of AIDS-related illnesses.

People with HIV are now living longer and healthier lives.

Nonetheless, many challenges remain in preventing both infection with the virus and progression of the disease.

One of the many factors that thwart efforts to prevent the spread of the infection and the treatment of the infected patient is the use of alcohol by those who are at risk of infection or who are already infected.

Scientists are gaining better understanding of the complex relationship between alcohol consumption and HIV infection.

An interesting American study examined the influence of patient's beliefs about alcohol and ART Adherence. 85% of the participants in that study believed that alcohol and ARVs should not be mixed. Furthermore, alcohol was found to affect adherence through a decision to skip (forgo)ART doses when drinking rather than through drunken forgetfulness.

Use of alcohol is frequently implicated as a factor in non-adherence to HAART although there have not been many efforts to systematically evaluate findings across studies.

It may be assumed that people who consume alcohol may not seriously commit to adhering to ART or may forget to keep their appointments, forget to take their drugs or take their drugs inappropriately due to alcohol influence.

Monti et al. in his study on alcoholic behavior and training refusal skills postulates that,
as drinking increases in severity over time, there appears to be a “funneling” effect or ‘’narrowing’’ of social relationships. Individuals begin to eliminate sober friends, and their peer group becomes populated with others who support and reinforce continued drinking. Being with such individuals and former drinking buddies increases the risk of relapse through multiple avenues such as:

(1) Overt and covert pressure to drink;

(2) Conditioned craving associated with people, places, activities, and emotional states

related to past drinking;

(3) Increased positive outcome expectancies about the effects of drinking; and

(4) Increased access/availability of substances

The above being the case, the alcoholic individual on ART will spend most of the time with his/her drinking buddies who are enablers and who will never challenge them. He/she will avoid being in the presence of their family or well-intentioned friends who might remind them of the risks

they are exposing themselves to. They will miss their appointments, give excuses, come home late and drunk and pick fights with those who challenge them.

Most often, such individuals will go to bed hungry and are unlikely to remember to swallow their medications.

2.5.1 Alcohol and HIV: A Complex Relationship

People infected with HIV are nearly twice more likely to use alcohol than people in the general population.

Moreover, studies have shown that up to 50% of adults with HIV infection have a history of alcohol problems.

Understanding how alcohol influences HIV is vital, both in treating those infected with HIV and in stopping the spread of the disease.

Alcohol use and HIV link is an important and complex phenomenon whose intricacies need thorough study.

Research shows that alcohol has numerous effects, both direct and indirect

Alcohol can increase how fast the virus grows, leading to higher viral load in the body. Those high concentrations, in turn, can increase the spread of the disease.

In one study, women receiving antiretroviral therapy (ART) who drank moderately or heavily were more likely to have higher viral loads, making it easier for them to spread the virus to others.

ART itself can be problematic in people who drink alcohol.

The Liver:

A major cause of illness and death among HIV-infected patients that has emerged since the advent of ART is liver disease.

Antiretroviral medications not only are processed in the liver, they also have toxic effects on the organ, and some drug combinations can lead to severe toxicity in up to 30% of patients who use them.

These patients are left with the grim choice of continuing ART to prevent the progression of the virus to AIDS—thereby risking further liver damage—or stopping ART to prevent liver damage and progressing to AIDS.

Further, a large proportion of people with HIV also are infected with hepatitis C (HCV).

Alcohol abuse and dependence significantly increase the risk of liver damage both in people with HIV alone and those core-infected with Hepatitis C.

ART / Alcohol Interaction:

Research suggests that alcohol may interfere directly with ART medications, essentially blocking their effectiveness.

It has been found that patients who drink are nine times more likely to fail to comply with their medication regimens compared with sober patients.

When HIV-infected drinkers fail to take their medications or do not take them correctly, it can lead to a higher viral load and an increasing likelihood that the virus will become resistant to the therapy.

ART, alcohol consumption, and HIV infection can be harmful in other ways as well.

HIV patients typically experience declines in organ function earlier in life than do uninfected people. And because people with HIV tend to drink heavily well into their middle and older years, these organs are even more at risk of injury.

For example:

The Heart:

Both HIV infection and certain types of ART medications increase a person's risk of heart disease, because:

- They change the balance of different fats—such as cholesterols—in blood,
- Induce inflammation, and
- Affect the blood-clotting process.

Both excessive alcohol use and infection with hepatitis C virus further enhance the risk.

Likewise, medication used in treatment of high cholesterol can be particularly harmful when taken by patients with liver damage from alcohol abuse or hepatitis C virus.

Heavy alcohol consumption (more than six drinks per day) has been linked to heart disease in HIV-infected people.

Therefore, reducing alcohol consumption or totally abstaining from the substance has great benefits for the individual not only to improve ART effectiveness but also for improved organ function and general wellbeing.

The Lung:

Another organ impacted by alcohol use and by HIV infection is the lung.

Patients who drink or who have HIV infection are more likely to suffer from pneumonia and to have chronic conditions such as emphysema.

Scientists do not yet know if alcohol and HIV together raise the risk for injury to the lung.

However, studies using animals suggest that this combination does indeed increase the risk for problems.

Lung infections remain a major cause of illness and death in those with HIV, and chronic alcohol consumption has been found to increase the rate at which viruses infect lungs and aid in the emergence of opportunistic infections.

The Brain:

Advances in imaging techniques have revealed another organ at risk for HIV and alcohol injury—the brain.

In studies comparing patients with alcoholism, HIV infection, or both, people with alcoholism had more changes in brain structure and abnormalities in brain tissues than those with HIV alone.

Patients with HIV infection and alcoholism were especially likely to have difficulty remembering and to experience problems with coordination and attention.

Those with alcoholism whose HIV had progressed to AIDS had the greatest changes in brain structure.

Another study by Samet J, Horten, and companions surveyed 349 HIV infected persons with a history of alcohol problem at 6-month interval.

267 were on HAART.

Interviews assessed recent adherence to HAART and past month alcohol consumption.

The relationship between adherence to HAART and alcohol consumption at baseline and at each subsequent 6-month follow up interval was investigated using a multi-variable longitudinal regression model while controlling for potential confounders.

Their findings showed that of the 267 patients on HAART, alcohol consumption was the most significant predictor of adherence.

Better adherence was associated with recent abstinence from alcohol.

These findings show that alcohol consumption does negatively affect HAART adherence. The study did not identify what specific factors about alcohol that resulted to non-adherence.

It would be interesting to know if alcohol focused adherence counseling at baseline could have made any difference.

Implications of HAART non-adherence for HIV progression are well document and they include adverse consequences for the individual as well as Public health.

Example:

Factors such as a reduced CD4 counts, increased viral load, recurrence of opportunistic infections, increased frequency of hospitalization, poor performance and general ill-health.

Others include: Increased rates of transmission and risks of resistance.

These are serious consequences that cannot be ignored and priority and support should be given to any HIV/AIDS research that seeks to identity and make recommendations to barriers to HAART adherence.

Another frequently studied correlation of HAART non-adherence is substance abuse. Historically most attention focused on injection drug use but studies focusing on alcohol have been increasingly emerging.

A focus on drinking behavior in the context of HAART is important for the following reasons: -

- Alcohol use is prevalent among HIV positive individuals and many patients and care givers do cite alcohol as a reason for non-adherence.
- There is evidence to suggest a significant influence of alcohol on markers of immunological functioning and viral suppression.

Since alcohol drinking is a modifiable behavior, interventions targeting alcohol use among PLWH/A have the potential to improve disease management and delay its progression.

Although alcohol use has been associated with HAART non-adherence in numerous studies, the nature, strength and consistency of this association remains unclear, and the question whether adherence is progressively compromised as drinking levels increase has not been systematically evaluated.

Finally, although the association of alcohol and non-adherence is reliable, it does not show the causal nature of this association.

The cognitive impairment that acute intoxication causes may interfere with one's capacity to plan for or remember dosing requirements but more information is needed.

Alcohol users might have reduced access to HAART due to financial crisis.

They may use alcohol to mask negative feelings related to HIV and/or may skip doses due to perceived side effects from toxic interactions.

Thus, identifying alcohol as associated with HAART non-adherence is not enough.

There is need for intervention that addresses alcohol use in the context of HAART, bearing in mind that a well-informed client/patient, whose rapport with her/his ART provider is a trusting one will most likely adhere to their HAART guidelines and hence achieve better outcomes.

An interesting finding was in a recent study whereby alcohol/adherence intervention did not influence drinking but nonetheless led to improved adherence, decreased viral load and increased CD4 counts.

The study did not highlight what in this group of individuals led to such noticeable improvement in adherence and their biological markers.

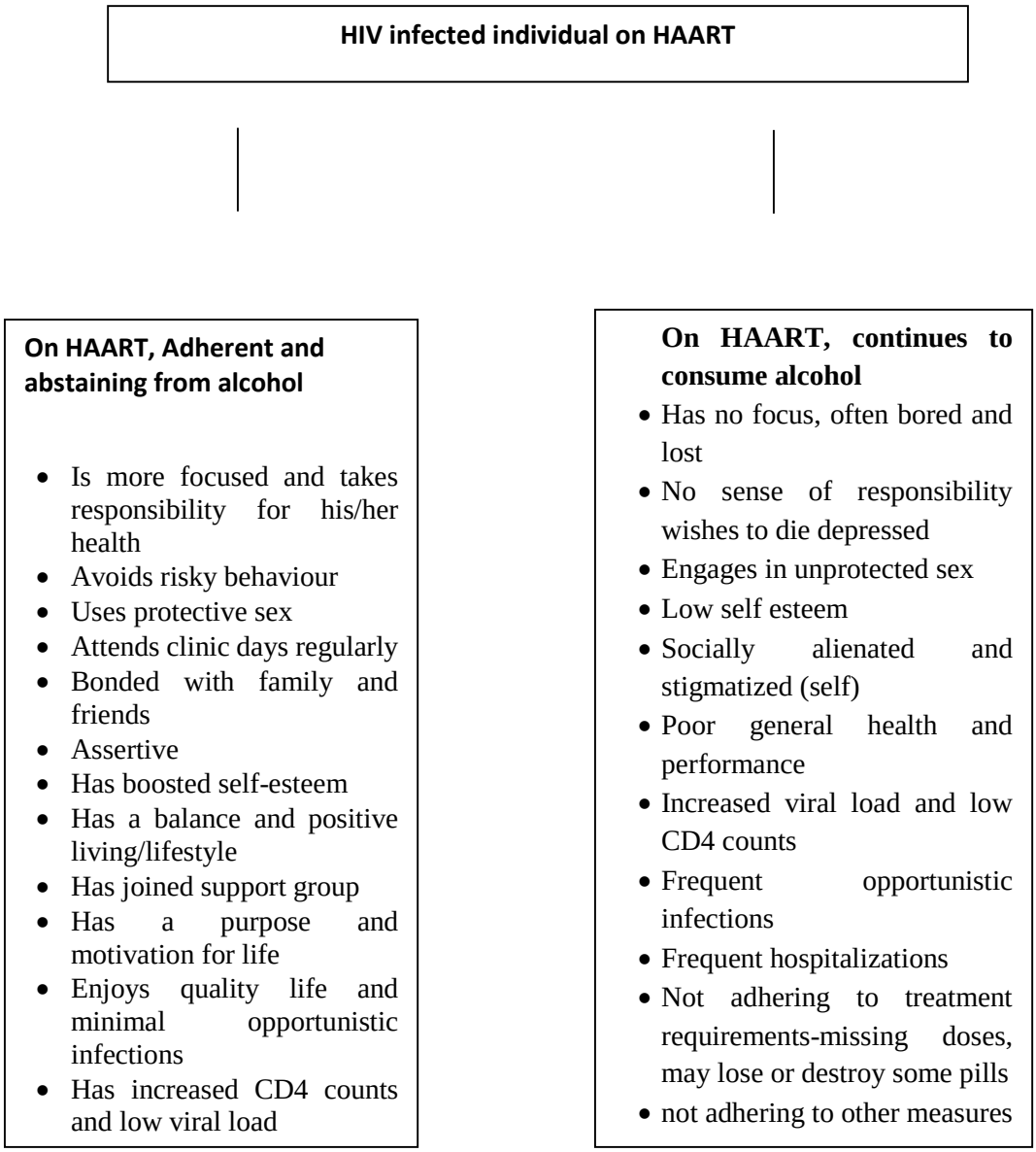
It could have been that although the interventions did not change the individuals drinking habits but having had the information about risks etc. made those individuals more vigilant and cautious

of the choices they were making. It may have been a case of the many benefits of making informed choices and taking responsibility over one's actions.

Nonetheless, this factor needs to be researched and verified.

2.6. Conceptual Framework

Conceptual Framework



Interventions

- Alcohol focused adherence counseling
- Assertive training and cognitive reconstruction
- Change attitude – HIV is not a death sentence. HAART gives great hope and is successful if adhered to strictly
- Rehabilitation facilities such as AA
- Join psycho-social support group for peer support
- Involve treatment buddy and next of kin to be encouraging and reminding them when to go for medication and when to swallow them
- Food and nutrition/livelihood support / household economic strengthening for economically challenged clients
- HIV/HAART education to PLWH/A
- Empowerment and promotion of rights of marginalized people to minimize discrimination and vulnerability

CHAPTER THREE

3.0. RESEARCH METHODOLOGY

3.1. Introduction

This Chapter gives an overview of the nature of the research to be undertaken and describes the procedures that will be followed in conducting the study.

These discussions include:

The research design, the target population, the location of the study, the sample size, sampling method to be used, criteria for exclusion as well as tools to be used in the study to collect data and a description of how that data will be analyzed to yield results.

Finally, it highlights the ethical considerations that must be put in place before the researcher embarks on her study.

3.2. Research Design

The research design that will be used in this study is the Ex Post Facto design which will examine how an independent variable, present prior to the study, affects a dependent variable.

In an ex post facto study, the independent variable is causing changes in a dependent variable.

It looks at prior variables present in a participant.

In the case of this study, the prior variable is alcoholism in a person living with HIV/AIDS and it (alcoholism) is the independent variable. The dependent variable is ART adherence in this particular individual. Lammers and Badia (2005) asserts that ex post facto research also known as non-experimental research is similar to a true experiment because it compares two or more groups

of individuals with similar backgrounds who were exposed to different conditions as a result of their natural histories.

This research design will help the researcher to look back and examine how the independent variable (Alcoholism in a PLWH/A on ART) present prior to the study affects a dependent variable (ART adherence).

It will help the researcher to tease out possible antecedents that have happened in the past and that are quite unique to this target population.

In this research design groups with qualities that already exist are compared on some dependent variable. Also known as "after the fact" research, an ex post facto design is considered quasi-experiment because the subjects are not randomly assigned – they are grouped based on particular trait or characteristic and are analyzed and compared in regard to independent and dependent variables.

Ex Post Facto designs do not use random assignments. They use pre-existing characteristics in the participant. Researcher purposely puts people in a particular group based on some prior characteristic or trait.

In this study, the participants must be PLWH/A, inhabitants of Lokori, Turkana East-Sub County and must be adults on ARVs.

3.3. Location of the study

The study will be carried out in Lokori, Turkana East-Sub-County which is located in the Northern region of the Republic of Kenya.

3.4. Target Population

The participants in this study must be men or women aged above 15 years who are HIV positive. They must be people on ARVs and must be residents of Lokori, Turkana East-Sub-County.

3.5. Sample Size

The study targets 150 clients-men and women (PLWH/A) aged above 15 years who are on ART.

3.6. Sampling Type

Sampling refers to a section of population that participates in research.

The sample should be representative of the population.

In this study, the sampling type used will be **purposive sampling method**.

Purposive sampling method means that participants are picked on the basis of their typicality depending on the researcher's judgment that they will best serve the purpose of the study.

In this study, purposive sampling method will ensure that all the participants selected are HIV positive clients (PLWH/A) and that they are all on ART and are registered for care in our program.

3.7. Research Tools/Instruments for Data collection

The two variables being tested in this study are:

(i) Adherence to ART-dependent variable

(ii) Alcoholism-Independent variable.

3.7.1. Adherence Testing Tools:

Direct methods:

One-on-one interview with the clients (PLWH/A) on their routine monthly clinic visit.

Biological Markers such as:

Clinical assessment of the client's general condition to rule out presence of OIs.

e.g. look for presence of oral thrush, fever, body swellings (boils, rashes, sores etc.)

Indirect methods:

Interviews

Self-reports

Pill counts

Counter checking in the ART attendance daily activity register (DAR), and pharmacy records

CD4 Counts and Viral Load assays.

ART adherence level is calculated as follows:

%adherence is equal to the number of doses a patient should have swallowed, minus the number of doses they missed, divided by the number of doses the patient should have taken, multiplied by one hundred.

i.e. % adherence = $\frac{\text{No. of doses of HAART patient took}}{\text{No of prescribed doses of HAART}} \times 100$

Grading of Adherence:

A=100% B=95% C=90-94% D=<90%

Note: Optimum adherence to ART is based on the commonly used cut off >95% adherence.

3.7.2. Pill Count:

Patient is asked to bring back the drug stock during every clinic visit or they count stock at home before clinic visit and report to the ART provider.

Spot checks could also be done at home by Adherence Counselors or Home-based Care givers.

The total number of tablets of each type in stock is recorded.

3.7.3. Testing of Alcoholism:

AUDIT (Alcohol Use Disorder Identification Test).

This is the tool to be used in this study.

It screens for excessive drinking and related risks and has been found to have increased level of validity and reliability.

AUDIT maximum score = 40.

Cut off score for hazardous/harmful drinking = 8 for men and

= 6 for women

Alcohol drinkers' types are:

1) Non-drinkers
2) Non-problem drinkers-AUDIT scores: Men = 1-7; Women = 1-5.
3) Problem drinkers-AUDIT scores: Men =8-40; Women = 6-40

Test for hazardous drinking and mild dependence is based on AUDIT questionnaire.

Note: See AUDIT Test Questionnaire Copy in the Appendix.

The alcohol consumption groups could be classified as:

1) Light drinkers = 1-2

2) Moderate drinkers = 3-4
3) Binge drinkers = > 5

Other materials /tools: include-stationary- paper and pens, patient's medical records, pharmacy and daily activity register (DAR) in the CCC, thermometer and weighing scale.

3.8. Procedures for Data Collection

1. This study is a quantitative research and will therefore involve use of numbers, counts and measures of pills (ARVs) and amounts of alcohol consumed by clients respectively.

2. It will also involve looking at client's appointment cards and checking if they have missed their appointments, look at their clinical markers-CD4 counts and Viral Loads as indicated in their patient's registers. Other vital signs such as body weight and body temperature will be noted.

   NB

   A significant drop in body weight or presence of fever may be suggestive of a likelihood of opportunistic infections (OIs) and may be an indication of poor adherence.

3. One-on-one interviews with each client as happen routinely during their monthly clinic visit will be done.

   This includes self-reports of:

   - missing doses,
   - having taken alcohol,

- had unprotected sex or
- Presence of clinical symptoms such as losing weight, coughs, fever, diarrhea etc.

3.9. Data Analysis

After data collection, analysis will be done quantitatively in respect to the study topic. The data will be edited, classified, and tabulated and then analyzed using statistical tests available in the Statistical Package for Social Sciences (SPSS) text editor. This is to ensure credibility, reliability and objectivity of the information gathered.
Summary will be done using descriptive statistics and presented in form of graphs, pie charts and tables.

3.10. Ethical Considerations

Ethical guidelines will be observed to protect the interests of participants and safeguard them, so as to recognize any conflicting concerns that may arise (Marshall & Rossman, 2010).
The guiding principles on ethics prescribe the principles the researcher should observe while carrying out a research (The Dublin Institute of Technology, 2009).

In this study, the participants will be made aware that the research is first and foremost for academic reasons/purposes but it would also enable us as care givers and ART Providers to identify gaps to improve our care provision to our clients.

Clients will be assured of confidentiality and anonymity. Thus, there will be no reference to clients by their names especially in written form.

Flick et al (2007) indicated that, at the time of accessing the participants with the view to gather information, it is very important to have some kind of an agreed contract that should be signed by both the respondent and the researcher. They further stated that the consent form should clearly spell out the topic, purpose of the research and expectations from the participants and that the

issues of confidentiality and anonymity be guaranteed. Also, that the issue of the possibility of withdrawing at any stage by the respondents and whether results will be given or not to the participants should be stipulated as well (Flick et al).

In this respect, every client selected for the study will sign a consent form after an explanation of the purpose and nature of the study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

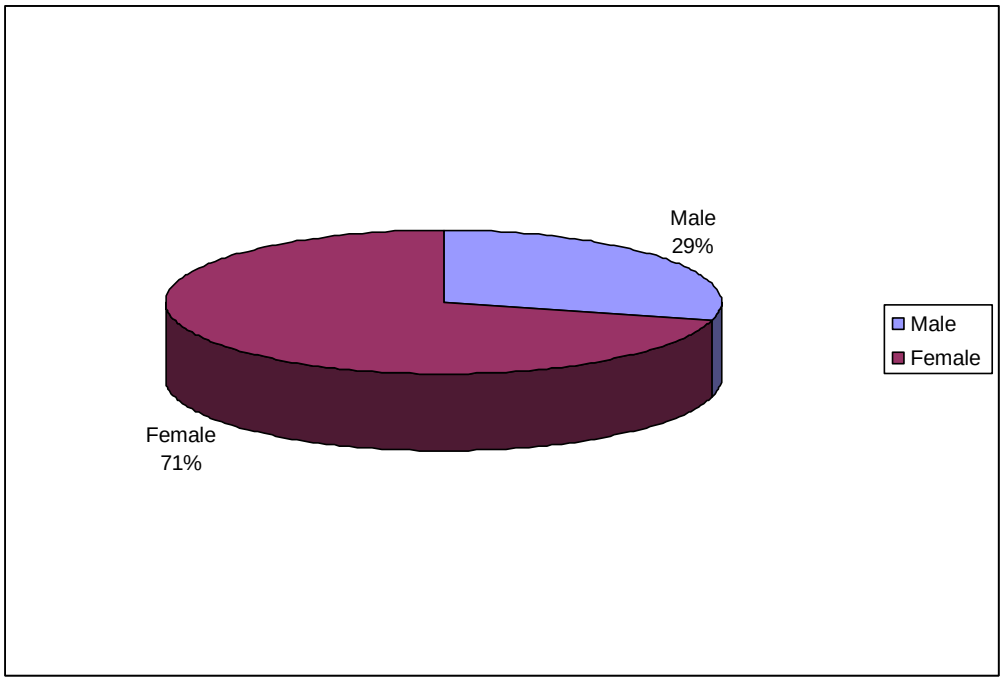
The analysis, presentation and interpretation of the study findings has been done in accordance with the data collected from the field. Data from 150 respondents were analyzed, presented and interpreted.

4.2 Demographics

150 People Living with HIV/AIDS (PLWH/A) who are on antiretroviral drugs and continuing care in Lokori, Turkana East Sub-County participated in this study.

Out of the 150 participants, 106 (70.7%) were female while 44(29.3%) were male.

Figure 4.1: Male and female participants in the study



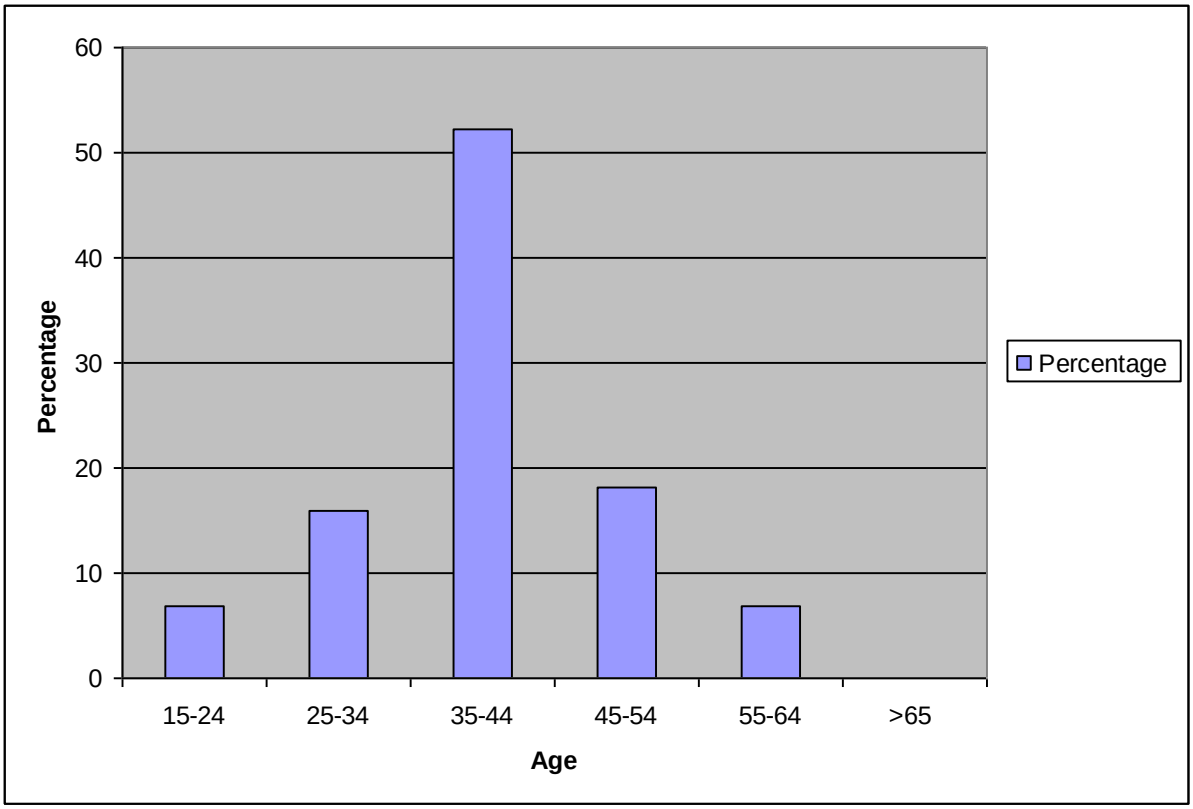
The table below shows the grouped frequency distribution of participants ages

4.2.1 Male and Female Age group distribution

Table 4.1 Male Age group distribution

Age group	**Frequency**	**Cumulative frequency**	**Percentage**
15-24	3	3	6.8
25-34	7	10	15.9
35-44	23	33	52.3
45-54	8	41	18.2
55-64	3	44	6.8
>65			
		44	**100**

Figure 4.2 Male Age group distribution



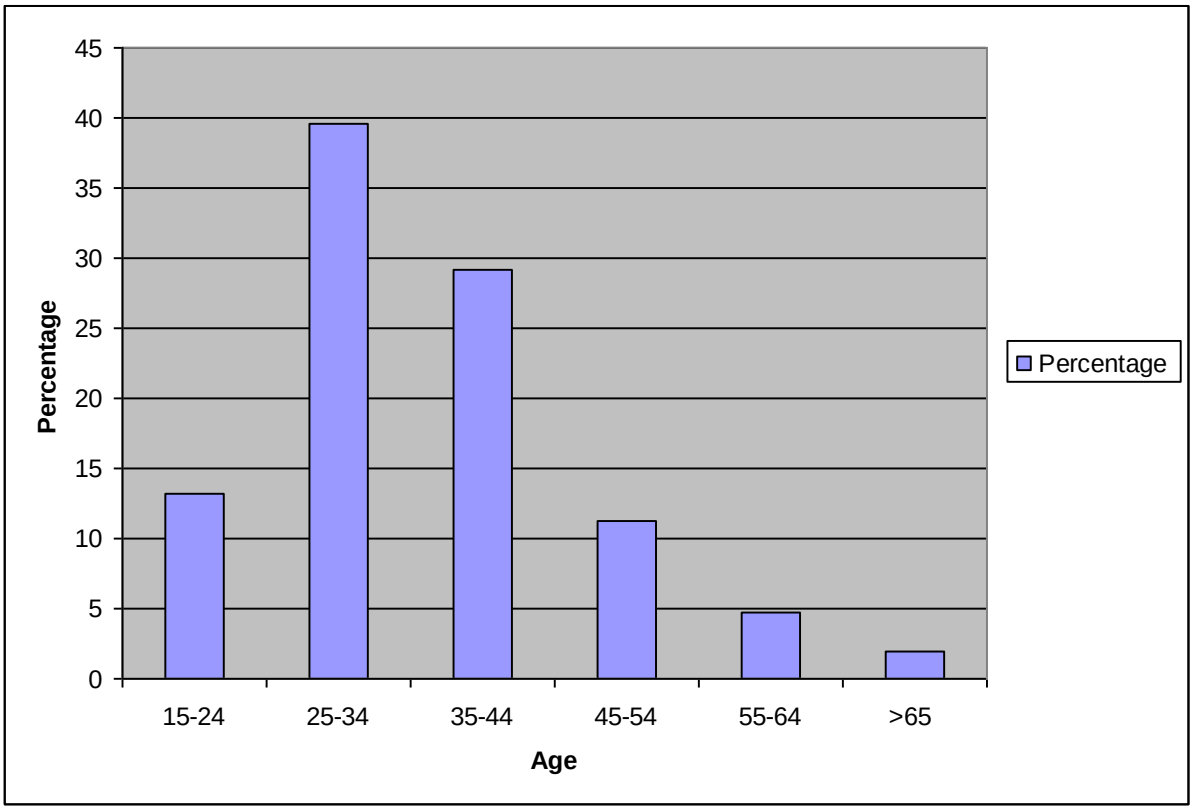
Among the male participants in the study, majority were aged between 35-44 years i.e. 52.3% while those aged between

15-24 were only 6.8%. There were no male participants aged above 65.

Table 4.2 Female Age group distribution

Age group	**Frequency**	**Cumulative frequency**	**Percentage**
15-24	14	14	13.2
25-34	42	56	39.6
35-44	31	87	29.2
45-54	12	99	11.3
55-64	5	104	4.7
>65	2	106	1.9
Total			**100**

Figure 4.3 Female Age group distribution



Findings reveal that a big number of the females who participated in this study (46 out of 106 i.e. 39.6%) were aged between 25–34 years while 29.2% were aged between 35-44 years. A significant percentage of women in the study i.e. 13.2% were young women aged between 15-24 years. Only 1.9% of the women participants were aged above 65 years.

4.3 Investigating if Clients kept their clinic appointment:

Note:

Keeping the appointment entails turning up on the booked date, availing for medical review and collection of monthly supply of ARVs.

Male Clients:

59.1% (26 out of 44 men on anti-retroviral therapy-ART) kept their appointment.

i.e. they turned up for their appointment on the date they had been booked to come for medical review and to collect their monthly supply of ARVs.

This was confirmed by counter – checking from their appointment cards and the daily activity and client booking register.

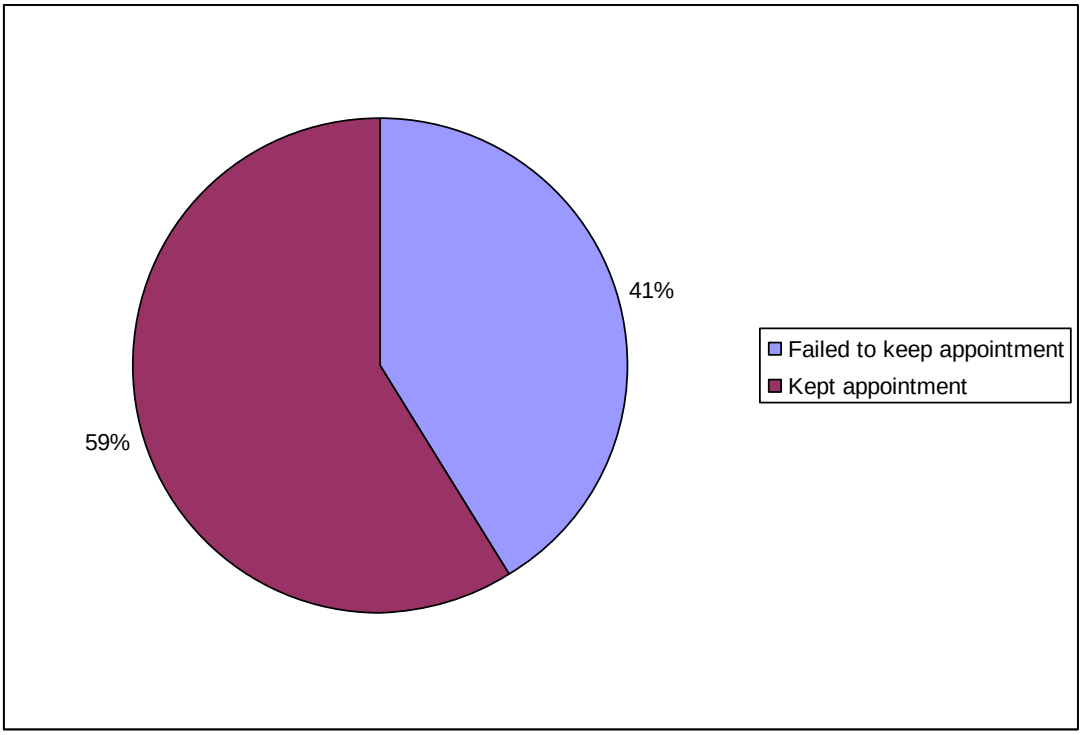
40.9% (i.e. 18 out of 44 men on ART in the study) did not keep their appointment date.

They came a day or two or weeks after the appointment.

They gave varied reasons for their failure to turn up.

The reasons will be discussed later in this chapter.

Figure 4.4 Investigating if the male clients kept their appointment



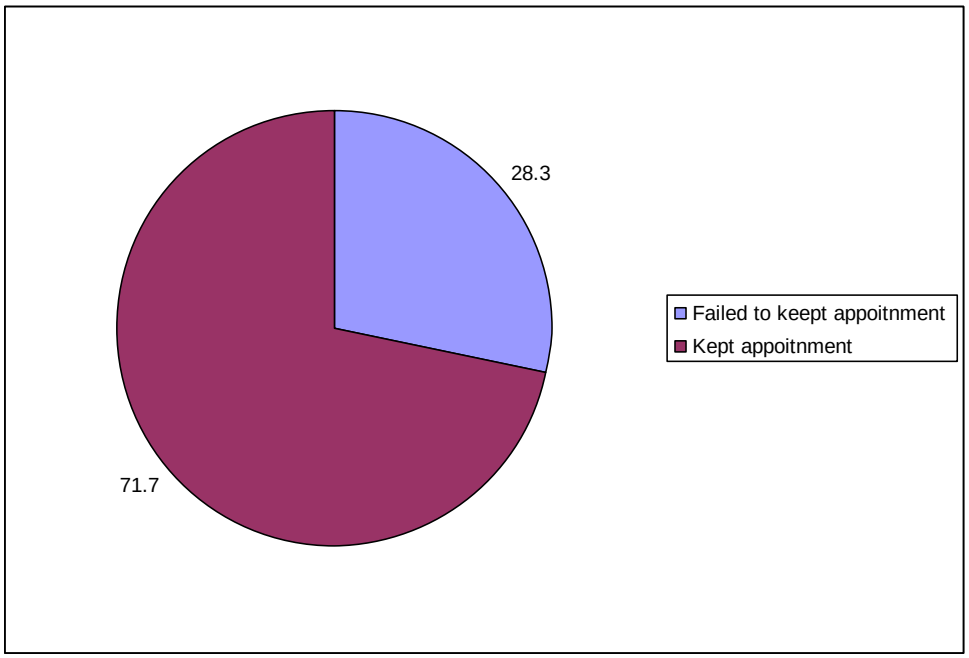
Female Clients:

106 females participated in the study i.e. 70.7% of the total population.

76 out of 106 females (71.7%) kept their clinic appointment and came for medical review and collection of monthly supply of ARVs.

1 Female withdrew from the study half way through the one-on-one interview and 75 females participated to the end.

Figure 4.5 Investigating if the Female Clients kept their appointment



4.4 Adherence Testing:

Adherence testing was done by counting pills that clients brought as balance from the previous supply and also going by self-reports.

Confirmation was done by counter-checking with the pharmacy ART register and the prescriber's comments.

Pills were counted and Adherence graded as follows:

$$\text{Adherence\%} = \frac{\text{No. of pills actually taken}}{\text{No. of pills prescribed}} \times 100$$

Grading of Adherence:

A = 100% B = 95% C = 90-94% D = 90%

Note: Optimum ART Adherence = > 95%

4.4.1 Pill Count among the male and female Clients who Kept their Clinic Appointment:

Male clients:

26 out of 44 men kept their appointment i.e. 59.1%.

Table 4.3 Pill Count among the Men who Kept their Clinic Appointment

ART adherence Grade	Frequency	Cumulative frequency	Percentage
A	18	18	69.2
B	3	21	11.5
C	5	26	19.2
D			
Total			**100**

Figure 4.6 Pill Count among the Men who kept their Clinic Appointment

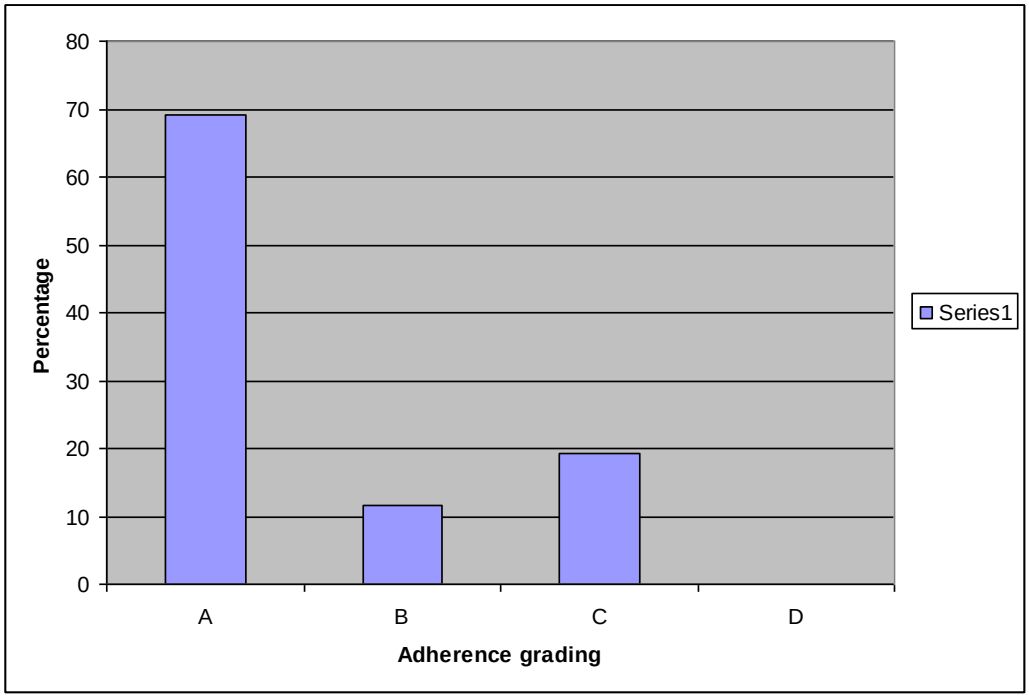


Table 4.3 and Figure 4.6 above demonstrate pill count among males who kept their clinic appointment.

The results show that 69.2% of the men who kept their appointment did not miss to swallow their pills and they had achieved 100% adherence which is excellent.

11.5% of the men in this category also achieved ART adherence grade B which is >95%.

In total, 80.8% of men who kept their appointment swallowed their medication appropriately and achieved the recommended optimum adherence of > 95% for viral suppression.

There was no male in this category who scored less than 90% ART adherence.

Female Clients:

Table 4.4 Pill Count among the Female Clients who kept their Clinic Appointment

ART adherence Grade	Frequency	Cumulative frequency	Percentage
A	61	61	81.3
B	6	67	8
C	2	69	2.7
D	6	75	8
Total	**75**		**100**

The results reveal that 81.3% of the female clients who kept their clinic appointment and came to collect their ARVs on time achieved excellent ART adherence grade of A i.e. 100%.
8% of the women in this category achieved grade B which is also commendable.
In total 89.3% of the women in this study who kept their appointment achieved the recommended optimum ART adherence of over 95%.

Those who scored grade C and D were 2.7% and 8% respectively. This is below the recommended optimum adherence for viral suppression.

4.5 Pill Count among Clients who DID NOT Keep their Clinic Appointment

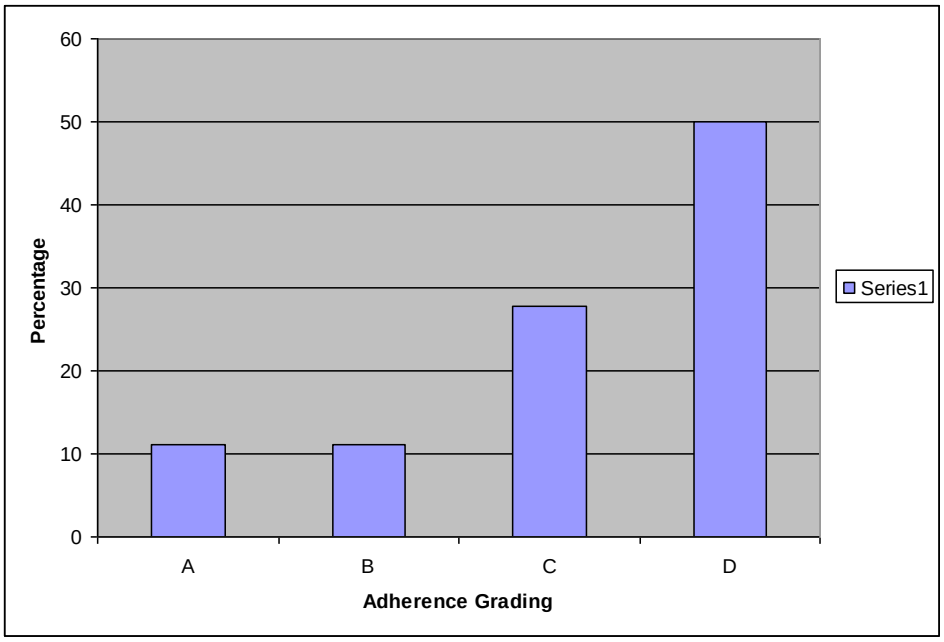
Male Clients:

Pills for the 18 male clients who did not keep their appointment date were counted and graded. The findings are demonstrated in table 4.5 and figure 4.7 below.

Table 4.5 Pill Count among the Males who DID NOT Keep their Clinic Appointment

ART adherence Grade	Frequency	Cumulative frequency	Percentage
A	2	2	11.1
B	2	4	11.1
C	5	9	27.8
D	9	18	50
Total			**100**

Figure 4.7 Pill Count among the Males who DID NOT Keep their Clinic Appointment



The above results reveal that 50% of the male clients who missed their appointment date had adherence grade of D i.e. less than 90%.

This is a significant and alarming finding because ARVs work best at optimum adherence whose cut off point is >95%.

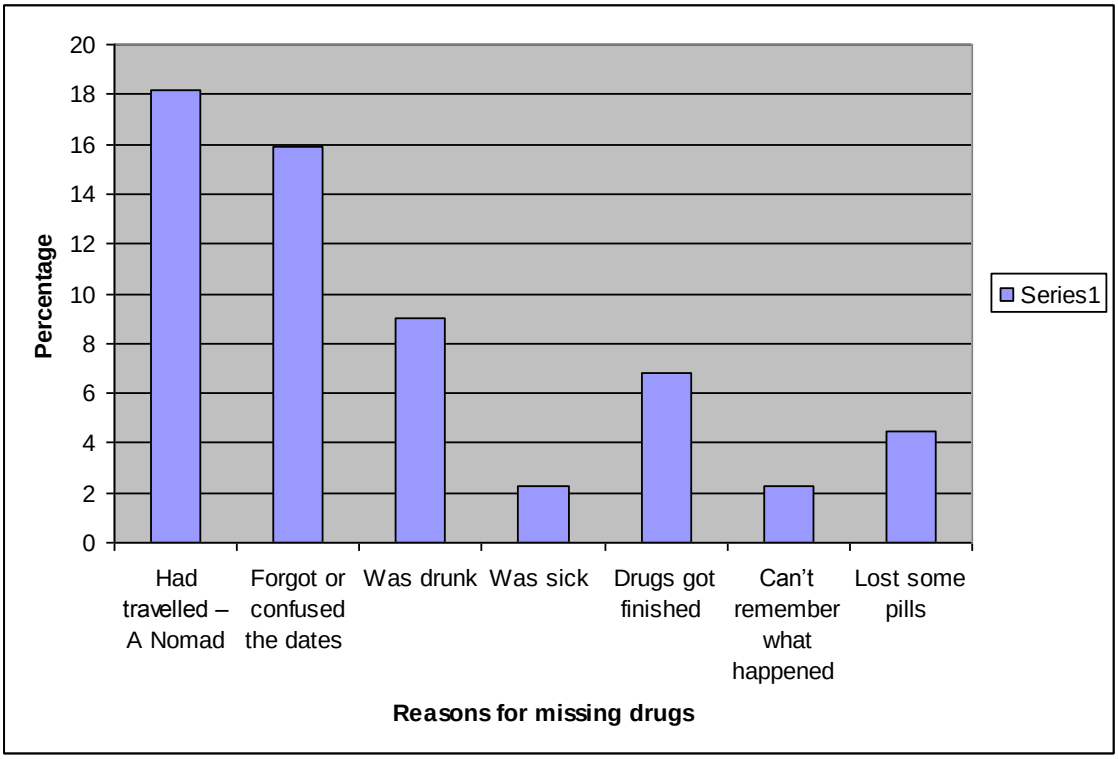
It shows therefore that 14 out of 18 men (i.e. 77.8%) who missed their appointment date fall way below the optimum adherence for Anti-retroviral drugs i.e. those who scored adherence grade C and D.

4.6 Reasons for Missing Drugs among the Male Clients

Various reasons were given by the male clients for missing their appointment and for failure to swallow their pills.

They included the following;

Figure 4.8: Reasons for missing drugs among male clients



41% of the male clients had no issues with adherence or alcoholism. They were graded >95%. Most clients who alleged to have forgotten to come for the ART supply, to swallow their pills or those who said they had confused their dates were also found to be consuming alcohol.

In addition to this group, the men who missed their appointments or who did not swallow their pills because they were nomads and had travelled with their flock (18.2%) were also found to be consuming alcohol while in the fields.

This group (nomads who had travelled and failed to come for the ART refill) did not travel with their wives and when they had sex, they did not use protection

4.7 Adherence testing for female clients who DID NOT keep their appointment

There were 30 female clients who failed to honor their clinic appointment date.

Table 4.6 Pill Count among the Female clients who DID NOT Keep their Clinic Appointment

ART adherence Grade	Frequency	Cumulative frequency	Percentage
A	2	2	6.7
B	9	11	30
C	4	15	13.3
D	15	30	50
Total			**100**

Figure 4.9 Pill Count among females who DID NOT keep their appointment.

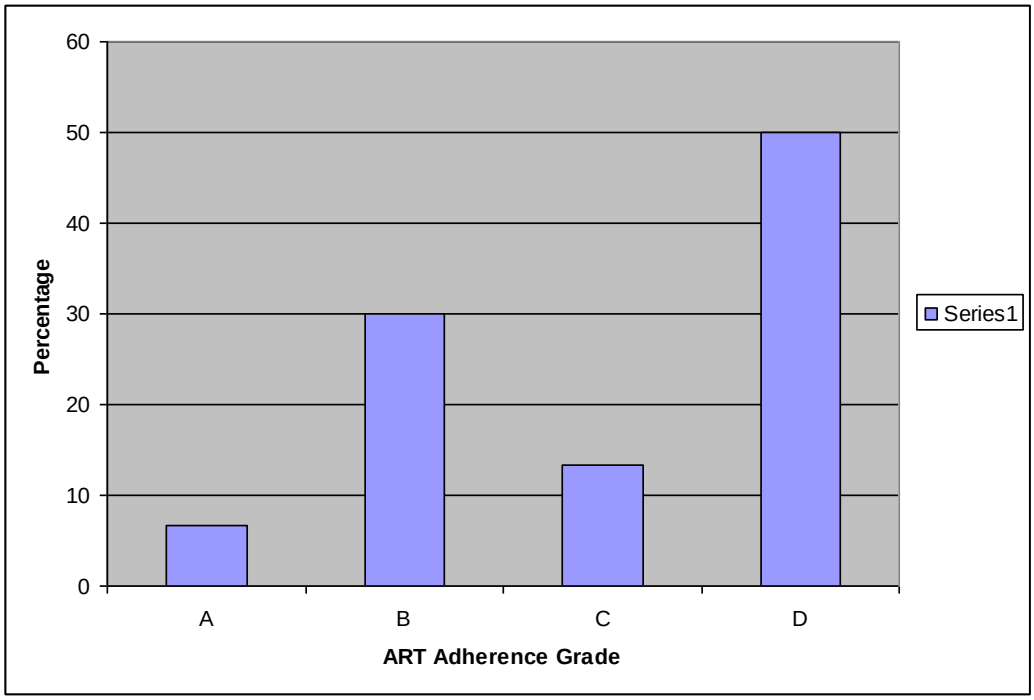


Table 4.6 and Figure 4.9 above demonstrate results of adherence grading among the female clients who did not keep their clinic appointment.

The results reveal that 50% (half of the entire population of the female clients who did not keep their appointment date and who did not turn up for medical review or collection of their monthly supply of ARVs scored a D grade in adherence to ARVs i.e. below 90%.

6.7% of the female clients in this category scored grade A (100%) while 30% scored Grade B.

In total 63.3% of all clients in this category scored below the recommended optimum adherence grade of above 95%. This therefore means that the female clients who did not keep their appointment and did not collect their drugs on time also failed to swallow their pills as prescribed. The women gave varied reasons as to why they did not turn up on the booked appointment date or why they failed to swallow their pills. Some of these reasons are listed below;

- Had not eaten – had no food
- Pills not available
- Lost her pills
- Forgot to swallow pills
- Forgot clinic/review date
- Is illiterate therefore could not read appointment date on the patient's card and there was no young person to check date for her.
- Had travelled- a nomadic family
- Was busy
- Confused her drugs. Took them twice daily instead of once per day
- Another one took drugs once per day instead of twice per day
- Was hospitalized and abandoned her own ARVs
- Was bereaved and busy with funeral and burial ceremonies
- Moved away from home – moved in haste and did not pack her drugs
- Had a very sick relative in hospital and she didn't think of herself
- Was drunk
- Had domestic wrangles and was fed up (depressed)
- Taken drugs randomly – alcohol related
- No permission from work. Due to stigma did not disclose to her boss why she needs to visit the clinic and yet she looks healthy.

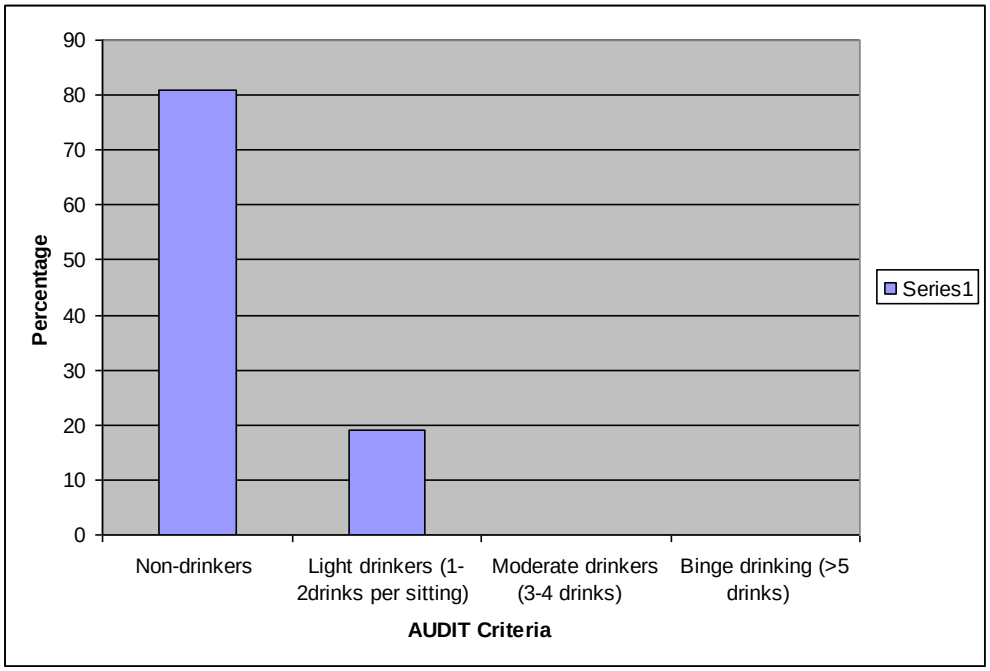
4.8 Alcohol Testing

4.8.1 Alcohol testing among the male clients who kept their clinic appointment.

Using AUDIT criteria, the clients were categorized as follows;

AUDIT Criteria	Frequency	Cumulative frequency	Percentage
Non-drinkers	21	21	80.8
Light drinkers (1-2drinks per sitting)	5	26	19.2
Moderate drinkers (3-4 drinks)			
Binge drinking >5 drinks)			
Total	**26**		**100**

Figure 4.10 Alcohol Testing among males who kept their appointment



The findings in this category reveal that, out of the 26 male clients who kept their appointment and came to collect their drugs, 80.8% where non-drinkers and only 19.2% were light drinkers. There were no moderate or Binge drinkers among the males in this category.

4.8.2 Alcohol Testing among the Male Clients who DID NOT Keep their Appointment

They were 18 out of 44 and were categorized as follows;

AUDIT Criteria	Frequency	Cumulative frequency	Percentage
Non-drinkers	3	3	16.7
Light drinkers (1-2drinks per sitting)	5	8	27.8
Moderate drinkers (3-4 drinks)	7	15	38.9
Binge drinking (>5 drinks)	3	18	16.7
Total	**18**		**100**

These statistics show that only 3 male clients (16.7%) who did not turn up for their appointment and therefore did not collect their ARVs were non-drinkers.

The rest were consuming alcohol i.e. 15 out of 18 men.

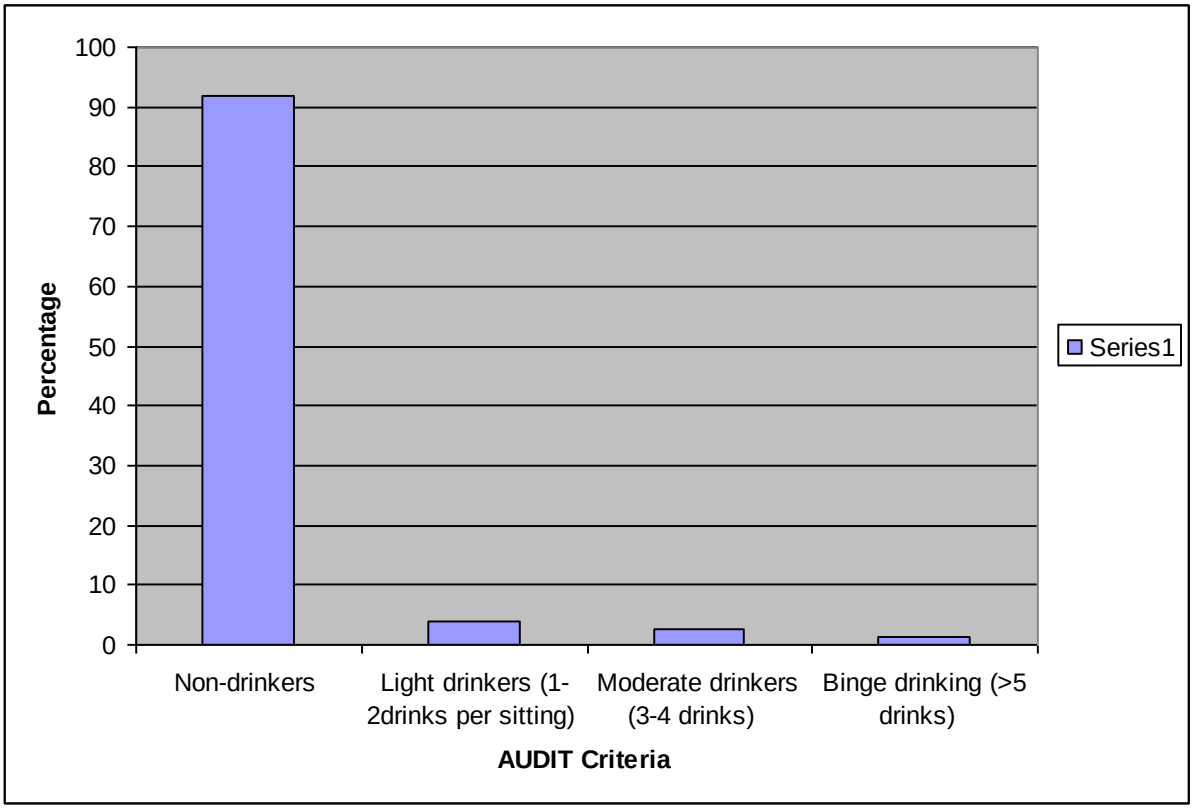
This translates to 83.3% of male clients living with HIV/AIDS on ARVs who did not turn up for their clinic appointment and who consequently did not collect their medication (ARVs) on the appointment date were consuming alcohol.

27.8% of them were light drinkers while 38.9% and 16.7% were moderate and binge drinkers respectively.

Table 4.7. Alcohol testing among females who kept their appointment

AUDIT Criteria	Frequency	Cumulative frequency	Percentage
Non-drinkers	69	69	92
Light drinkers (1-2drinks per sitting)	3	72	4
Moderate drinkers (3-4 drinks)	2	74	2.7
Binge drinking (>5 drinks)	1	75	1.3
Total	**75**		**100**

Figure 4.11 Alcohol Testing among Females who kept their appointment.



According to these results it is evident that majority of the female clients who kept their appointment and came to collect their drugs were non-drinkers i.e. 92%.

4% females were light drinkers.

2.7% were moderate drinkers while only 1.3% were binge drinkers.

Table 4.8 Alcohol testing for females who DID NOT keep their appointment

AUDIT Criteria	**Frequency**	**Cumulative frequency**	**Percentage**
Non-drinkers	20	20	66.7
Light drinkers (1-2drinks per sitting)	3	23	10
Moderate drinkers (3-4 drinks)	5	28	16.7
Binge drinking (>5 drinks)	2	3	6.7
Total	**26**		**100**

Figure 4.12 Alcohol testing among females who DID NOT keep their appointment

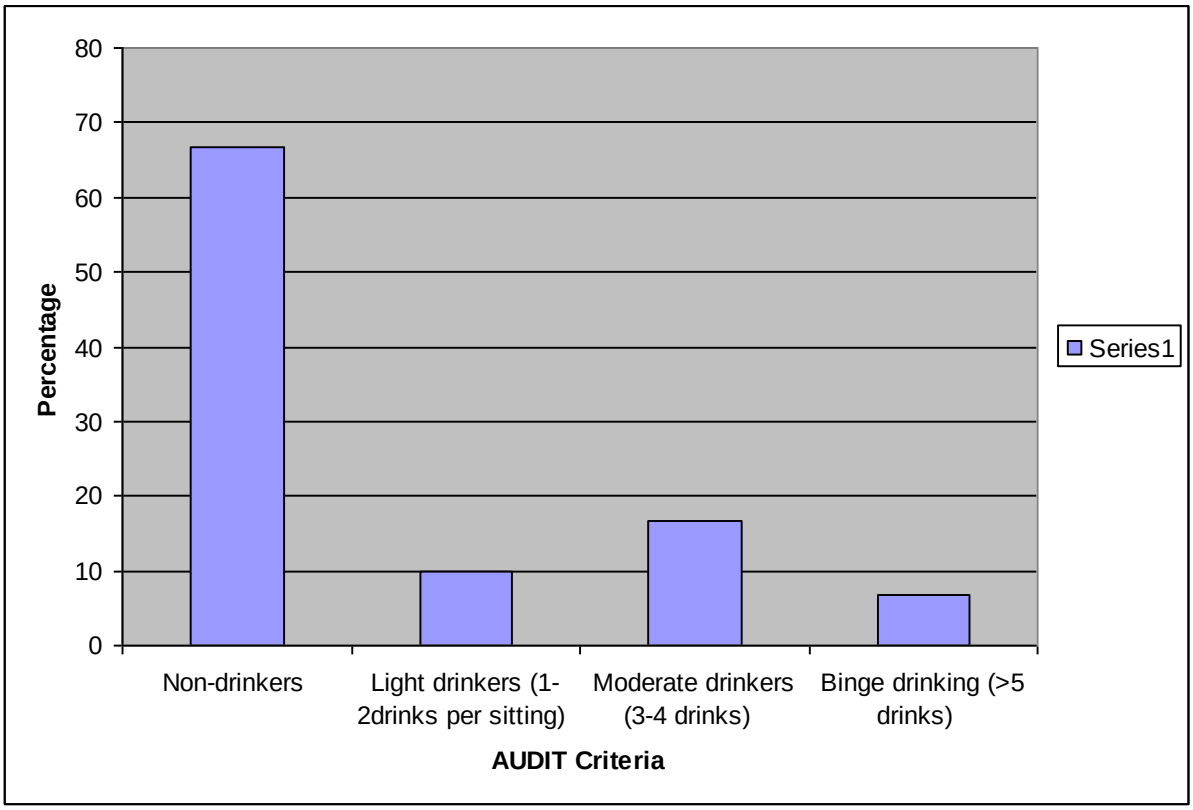


Table 4.8 and Fig 4.12 above show that, 66.7% of the female clients who did not keep their appointment were non –drinkers, while 33.4% of them were consuming alcohol.

Out of these 33.4%, 10% were light drinkers while 16.7% and 6.7% were moderate and binge drinkers respectively.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter draws a conclusion based on the findings of the study and further makes recommendations in areas that require interventions in order to improve ART adherence among adults living with HIV/AIDS in Lokori, Turkana East Sub-County citing the major contributing factor.

To draw this conclusion, the researcher used one-on-one interviews as well as questionnaires to gather information from clients who were purposively sampled.

i.e. Clients were picked on the basis of their typicality depending on the researcher's judgment they will best serve the purpose.

Clients had to be residents of Lokori in Turkana East, with a HIV positive status and on antiretroviral drugs who were being followed up in Lokori CCC.

5.2 Summary of the Findings

The main objective of the study was to determine whether there is a relationship between alcohol consumption and ART adherence.

The study also sought to identify some behaviors of concern among alcoholics that could negatively affect ART adherence.

It further sought to establish the contexts under which clients on ART missed their daily doses.

Based on the study findings, it was found that both male (77.8%) and female (63.3%) clients who missed their clinic appointment, those who did not turn up for medical review and monthly supply of ARVs had adherence of below the optimum recommended grade for viral suppression. They scored adherence grade of C and D. i.e. < 95%

In addition, majority of the individuals in this category (males 80.8% and women 92%) were found to be consuming alcohol.
The study further confirmed that most of the clients (both male-59.1% and female-71.7%) who kept their clinic appointment, had excellent adherence grades of > 95%.

It further established that this same group of individuals who kept their appointment date were non-alcohol drinkers.

Another interesting finding was the significant percentage of men with poor adherence who were found to be Nomadic pastoralists (18%).
This meant that the men travelled with their flock and were unable to come back to the clinic for their supply of ARVs unless the appointment date coincided with their migration calendar.

The study also found out that there are other factors apart from alcohol consumption that contribute to ART non-adherence particularly among individuals in Turkana East.
Top on that list was food insecurity.
Due to harsh climatic and economic conditions, a significant number of clients struggle to put food on the table.
Apparently, ARVs are very strong medicines and some have side effects such as drowsiness and gastric irritation especially when taken on an empty stomach.
As a result, some clients deliberately choose not to swallow their pills when they have not eaten and this compromises the ART adherence and outcome.

5.3 Conclusion

Based on the above findings, the study concludes that there is a strong relationship between alcohol consumption and ART adherence and that alcohol is one of the main factors that contribute to poor adherence to ART among adults living with HIV/AIDS on care in Lokori, Turkana East Sub-County.

Behaviors such as forgetting appointment dates, forgetting to swallow pills, losing some pills or coming home late were found to be more common among men who consumed alcohol in this study.

The study further concludes that in this target population, there are other significant factors too that contribute to the same. Top on that list is food insecurity and a nomadic lifestyle.

5.4 Recommendations

In view of the findings, the following recommendations are therefore proposed;

1) Alcohol-focused adherence counseling for all HIV positive clients prior to initiating ART This could be part of the package during pre-ART counseling sessions.
2) All ART Providers need to have Alcohol and Substance Use Counseling Competencies in order to reach out more to their clients with empathy and understanding.
   It would be helpful to set up Alcoholic Anonymous (AA) support group centers affiliated to the health facilities so that needy and willing clients can join.
3) Community awareness and acceptance that alcohol indeed is a disease and that those in addiction need community and family support
4) More Creative and Innovative ways of reaching out and ministering to nomadic clients so as not to totally distort their routines but at the same time be able to meet their health needs Example:
   Train “Expert Clients” and peer counsellors among the Nomadic population to carry out continuous health/adherence counseling and form support groups among the nomadic clients so that they can remind each other when and where to go for their monthly supplies of ART.

5) Include nutritional support to needy clients so that they do not miss on their pills because they have not eaten.
6) Strengthen support groups among all clients and the buddy system so that each client has a treatment buddy who reminds them of the appointment date and those within families can be reminded when to swallow pills.
7) Fight stigma and discrimination at all levels so that clients are free to disclose their HIV positive status without fear of being stigmatized and ostracized.
8) Continuing staff education and updates on current trends and issues in HIV/ART management.
9) Staff support/Self Care/ Health and Wellness programs/ 'Caring for the Care giver' in order to prevent or manage work-related stress and burn out.

5.5 Suggestions for further study

The study focused on effects of alcohol on the individual and family and how this affects ART adherence among adults living with HIV/AIDS in Lokori, Turkana East Sub-County.

Further study is recommended on factors affecting ART Adherence among Children and Adolescents.

Another study highly recommended is to investigate competencies among ART providers in relation to Alcohol Focused Adherence Counselling and what is needed to bridge the gap.

UNISE 1476 IT - CASE STUDIES 2021

CASE 01/2021

**Olina-not her real name, CCC registration number xxxxx tested positive for HIV 14 years ago during a routine screening for pregnant women for prevention of mother-to-child-transmission of HIV (PMTCT). She was started on anti-retroviral drugs (ARVs) after several sessions of adherence counselling. Her husband, a Police Man and a heavy drinker declined to take the test. Her pestering him to take the test vexed him and in anger, he started to drink even more and to physically assault her. In denial he stopped coming home to her and took another wife whom he infected with HIV. He blamed Olina for going for the test and for testing positive. He even accused her of bringing the virus home.

Afraid that the other family members will get to know her HIV status (fear of stigma and discrimination), Olina did not cease exclusive breastfeeding at the recommended six months. She also stopped giving the baby the recommended prophylaxis she had received from the clinic for PMTCT.

She stopped taking her ARVs all together and started consuming alcohol.

Her beautiful baby did not get to see her second birthday!

Olina had no time to mourn her baby. She was busy proving herself to her family and relatives.

She soon got pregnant again. Afraid that the other women will get to know her status, she was not keen on monthly attendance of clinic fearing to be registered for PMTCT support group for HIV positive pregnant mothers on ART. She decided to relocate, changed her residence and address. The ART providers in the CCC (Adherence Counsellor and defaulter tracers could not find her whenever they made the village house to house visits).

She lost her second baby at eight months.

This last experience woke her up.

Olina returned to care. She joined a Psycho-social support group for clients with poor adherence to HAART and those struggling with alcoholism. This group met regularly every two weeks and offered psycho-social support to the members. She found new friends who had similar struggles and was empowered to form and sustain new healthier habits.

She got an opportunity to express her grief and mourn the loss of her husband and two daughters. She slowly walked the journey of forgiving her tormentors who blamed and stigmatised her for being HIV positive.

She joined the “Micro-finance/ Table Bank initiative for livelihood support and has since got employment at the local Sub-County office as a house-keeper.

Olina is now one of our “Mother-Champions / Mentor Mother” who assists the ART Providers in our CCC to support clients who have issues related to poor ART adherence, HAART Defaulters, Alcoholics on HAART and encouraging pregnant mothers to show up early for health education and for prevention of mother to child transmission of HIV (PMTCT).

CASE 02/2021

**Rika – not her real name, is a brilliant young woman and a Health- Care Worker who is physically challenged. She is a charmer and kind of like breath of fresh air in her company. She is married to a Primary School Teacher.

When she tested positive for HIV, hell broke loose!

She got in to drinking a very strong local brew called “Chang’aa”

She fought with everybody and hated everybody.

Rika disowned her three young children and dispersed them to her relatives and did not care what they ate, where they slept, whether they schooled or what went on as far as their well-being was concerned.

Her husband could not take it any longer so he moved on and took another woman.

Friends and colleagues of Rika did not give up on her and tirelessly went to visit her and to support her.

After many attempts, Rika was enrolled to care and treatment with HAART.

aPNS (sexual partner notification) revealed that her husband was HIV positive as well as her last-born baby boy. Both were enrolled to care and treatment.

Rika’s co-wife escaped the virus and left the couple but not without spreading the “juicy” news of how HIV positive ‘these three poor creatures’ were and how soon they were all going to die!

Rika was depressed and she continued drinking the strong brew often forgetting to swallow her ARVs or to administer those of her baby.

Her husband seemed to do well but was working far away from home.

During one of her brighter days, Rika was invited to a “Peer Educator’s Workshop on alcohol and poor ARV Drug adherence. She seemed to like that training very much and was soon speaking in forums promoting alcohol abstinence for people on ARVs, PMTCT mother’s groups and strongly condemning HIV/AIDS related stigma and discrimination.

Today, Rika is a “Mentor-Mother” and a champion who is passionate about supporting other mothers faced with challenges similar to hers.

She still struggles with alcohol, relapsing from time to time. She is virally suppressed and so is her son who is now 11 years old and doing very well in school.

CASE 03/2021

**Aria-not her real name was married to **Vester (not his real name) and they had six children.

Three years ago, we conducted a RRI (Rapid Response Initiative-a heighten HIV counselling and testing for intensive elicitation of positive persons in the community) in their village and both tested HIV Positive.

At that stage, Vester was sickly. He was referred to our clinic and was found to have Pulmonary Tuberculosis (PTB). He was started on treatment for TB which was very successful. At the same time Aria and Vester were counselled and consented to start antiretroviral therapy (ART). Both brew and consume alcohol. The family started experiencing conflict springing from the quest “who brought HIV home?” and blaming each other.

They continued to consume alcohol, miss their clinic appointments, skip swallowing their pills and over time their general condition began to deteriorate.

Aria left her husband and married another man, a non-suspecting migrant worker who had another wife back at home. She did not disclose to her new lover her HIV positive status because of fear of stigma and discrimination.

She took her medication erratically and highly secretively. Her CD4 counts dropped and her viral load that was previously non-detectable started to rise.

She became pregnant and did not adhere to the protocol for PMTCT of HIV

Currently, she is enrolled to a Psycho-social support group for enhanced adherence counselling (EAC), alcohol and substance abuse support group and PMTCT group.

It is hoped that she will continue giving her baby the recommended drugs to prevent Mother-to-child transmission via breast milk, practice exclusive breastfeeding for six months then cease.

Her baby is now HIV exposed infant (HEI) and is being monitored for early infant diagnosis (EID)

Aria is categorised as an unstable client and is being closely monitored. She gets enhanced adherence counselling (EAC) every clinic visit.

Her second husband has been identified through aPNS (sexual partner notification). He too tested positive but disclosed that he has been on ARVs for some years secretly. He takes alcohol but his

adherence to ART is satisfactory. He was found to be virally suppressed. Through sexual partner notification, the health care worker was able to reach his other wife who tested HIV negative. They have been counselled as discordant couple and she is on close follow up.

CASE 04/2021

**Tina-not her real name is a 32-year-old mother of three. She is a person living with HIV/AIDS (PLWH/A) for the last eight years. She drinks heavily and takes her ARVs poorly. Her marriage is unstable due to recurrent domestic conflicts with her HIV negative husband.

Efforts to talk to this discordant couple on risks of exposure to HIV through sexual intercourse and our proposal for them to use pre-exposure prophylaxis and protected sex fell on deaf ears because of ignorance, illiteracy and strong cultural beliefs from both parties.

The man beliefs that the woman cannot infect him since for several years they have lived together and she hasn't done so! He refuses to imagine that she contracted HIV when she was still married to him (infidelity on the side of woman is unforgivable). He refuses to use protected sex and to use prep since he is not sick!

Tina is drinking heavily and perhaps engaged in irresponsible sex behaviour.

Her children were neglected and malnourished. Thankfully, two of Tina's children are HIV negative and her last-born baby who is 4-year-old is HIV positive. The three are being taken care of by their maternal grandmother (Tina's biological mother) who is frail and partially blind.

At the moment, Tina is battling multi-drug-resistant TB (MD-RTB) and is on isolation as per the treatment protocol. Currently, there is a multi-disciplinary team (MDT) taking care of her and constant on-going consultation.

The challenges paused by the case of Tina are:

- Suspected treatment failure (STF) due to poor adherence to HIV/TB drugs
- Stigma and discrimination
- Alcoholism
- Depression and despair
- Tina's baby could also face poor drug adherence since the care taker (elderly, frail and partially blind) grandmother may not give the right doses to the baby, may forget, confuse or mix up the drugs.

We have engaged a community health Volunteer (CHV) who goes to Tina's grandmother's house every morning for directly observed treatment (DOTs) to ensure that the elderly lady is giving the baby the drugs as required. He also brings nutritional support to both the baby and the granny.

CASE 05/2021

**Ipoo-not her real name is the fourth and the last wife of Turkut and they live far in the interior villages of our catchment area some 98km from our static site in Lokori. They are purely nomadic, migrating from place to place in search of pasture and safety. They have a huge herd of camels, goats, donkeys and sheep. She, her co-wives and husband can be considered wealthy traditionally and they look very well.

We encountered Ipoo during one of our mobile outreach clinics in to the interior villages. To meet these families, we have a team of community-link persons who monitor the nomadic families on their migratory tracks and patterns and guide us on where to link up with them for care.

Prior to our visit, community mobilization is done by community health workers (CHW) and community health volunteers (CHV)and the village heads. They agree on a venue, usually by the river-side ("Langa") which is cooler and has a bit of green trees to shelter the gathering from the scorching desert sun. It was during such visits that our team encountered Ipoo.

She was attending Ante-Natal Care services for the first time even though it was her second pregnancy. Her first pregnancy was taken care of by a traditional mid-wife and it was uneventful.

This time round, Community health workers seemingly caught up with this family with the good news that Health care workers from Lokori will visit their village or its neighbourhood monthly for Ante-natal care for expectant mothers, immunization for babies and other health related issues.

First encounter requires every pregnant mother to be screened for HIV and syphilis among other things. If she is found HIV positive, PMTCT Protocol of management follows which includes:

- Linkage to care and treatment with ART
- Testing of spouse and other sex partners-in the case of Ipoo it was her husband and her three co-wives and any other sex partner in that web who might be revealed by any of the parties.
- It also includes testing of her other baby
- Encourage hospital delivery to minimise chances of HIV exposure to the new born during delivery
- Bring home ARVs (Nevirapine and Zidovudine syrups) for the unborn baby to be administered as soon as the baby is born and to continue as per the recommendations
- Education on the breastfeeding protocol for HEI (HIV Exposed Infants)
- And to be notified when blood for PCR for EID (Early Infant Diagnosis) is to be drawn.

All this information is best given to the couple in question.

The dilemma for Ipoo was:

Stigma-both self-stigma and from the large polygamous family and community

Questions like, “how do you walk home with medications for a whole month and you are not sick...not to mention medications for an unborn baby?” This is an abomination. In fact, we do not even buy clothes or gifts for a baby that we have not yet seen leave alone keeping drugs in waiting!”

Ipoo’s Co-wives would certainly be over-curious

How does the Health Care worker encourage Ipoo’s co-wives to take the HIV test without exposing Ipoo?

What about Turkut? She was frozen at the thought that he too needs to be tested. “Who would be the one to face that “lion”? “Should he turn HIV negative, I know he will eat me alive” She said.

She disclosed that Turkut drinks, and when he does he is fierce!

“There is no way I will go home with these medicines”. That was her parting shot!

The Heath care workers had a tough time accompanying her.

She missed her two subsequent clinic visits and all the time our heath care team where trying to trace her.

Thankfully she was traced in a different area where her family had re-located. She was accompanied by her eldest co-wife, who doubled as her best friend and mentor. Ipoo interestingly looked very well and at peace. She had managed to disclose her HIV status to her co-wife / friend who by now had consented to be Ipoo’s treatment buddy. With the help of her PMTCT Nurse and adherence counsellor, Ipoo’s family have been tested (Turkut and his three wives) i.e. Ipoo’s co-wives and Ipoo’s first baby. All have turned HIV negative. She is now eight months pregnant and has a birth plan to protect her baby from HIV exposure before, during and after delivery.

The Health Care team is keeping a close eye on her. Meanwhile her husband needs to sober up and embrace the care available for discordant couples so as to protect himself and his other wives.

APPENDIX 1: QUESTIONNAIRE

ONE-ON-ONE INTERVIEW

Client……Age……. Gender……Body Temperature……Body Weight……

1) Date of Encounter……

2) Booked Appointment Date……...

Note any discrepancy

Kept appointment? YES…….
NO…… (Tick where appropriate)

3) Clinical Signs and Symptoms to rule out presence of Opportunistic Infections (OIs)

Fever

Lymph node swellings

Diarrhoea

Skin manifestations

Oral thrush

Cough / TB

Weight Loss

Others-Specify……

4) Biological Markers

i. Latest CD4 Counts……. Previous CD4 Counts…….

ii. Latest Viral Load…….. Previous Viral Load……..

5) Adherence Testing

Self-Reports

When did you last miss your pills?

If once, kindly tell me the day/ date……

Missed several doses / days?……

I would like to invite you to share with me what happened that you missed swallowing your drugs.

Example (Tick where appropriate)

- Had travelled
- Forgot
- Came home late
- Was sick
- Had not eaten
- Others-Specify……

Pill Count:

Count the number of pills the client brought as balance from the last month's supply.

Counter-check with her pharmacy register what is his/her expected balance and do the calculation.

$$\text{Adherence \%} = \frac{\text{No. of pills taken}}{\text{No. of pills prescribed}} \times 100$$

Grade Adherence as follows and circle your findings

A = 100% B = 95% C = 90-94% D = < 90%

Optimum Adherence = > 95%

6) Interview for Alcohol Consumption

When was the last time you took alcohol? Indicate day / date……

Note if it was a once off experience or habitual drinking…….

What was going on?……

Example

- Victory party
- Full moon community celebrations
- Wedding
- Routinely
- Was hungry
- Was angry/ upset
- Others-specify……

Kindly quantify how much you took / have been taking per day

……

(Display commonly used mugs and jugs calibrated to estimate quantities).

Use **AUDIT** Criteria to categorize the client as follows

Light Drinkers = 1-2 drinks

Moderate Drinkers = 3-4 drinks

Binge Drinkers = > 5 Drinks

APENDIX 2: AUDIT or Alcohol Use Disorders Identification Test

A test for hazardous drinking and mild dependence

Used to detect alcohol problems experienced within the last year

8 or more scores indicate harmful drinking behaviour

Take the AUDIT Test

1. **How often to you have a drink containing alcohol?**
   (0) Never (Skip to 9-10)
   (1) Monthly or less
   (2) 2-4 times a month
   (3) 2-3 times a week
   (4) 4 or more times a week

2. **How many drinks containing alcohol do have on a typical day when you are drinking?**
   (0) 1 or 2
   (1) 3 or 4

(2) 5 or 6
(3) 7,8, or 9
(4) 10 or more

3. **How often do you have six or more drinks on one occasion?**
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

4. **How often during the last year have you found that you were not able to stop drinking once you had started?**
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

5. **How often during the last year have you failed to ado what was normally expected from you because of drinking?**
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

6. **How often during the last year have you been unable to remember what happened the night before because you had been drinking?**
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

7. **How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?**
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

8. **How often during the last year have you had a feeling of quilt or remorse after drinking?**
   (0) Never

(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?
(0) No

(2) Yes, but not in the last year

(4) Yes, during the last year

10. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?

(0) No

(2) Yes, but not in the last year

(4) Yes, during the last year

APPENDIX 3: RESEARCH PARTICIPATION CONSENT FORM

I have read / been explained the nature and purpose of this study as follows

1) The study is first and foremost for academic purposes

However, the information generated may be useful in improving care provision to clients by the ART Providers in our Health Facility

2) I am assured od Confidentiality and I am assured of anonymity

3) Participation in the study is purely voluntary and I may choose to pull out from the exercise at any stage if I so wish.

Signature of the participant……..
Date……