PREVALENCE OF DEPRESSION, ALCOHOL USE DISORDER AND THEIR ASSOCIATION WITH ANTI-RETROVIRAL THERAPY ADHERENCE AMONG ADULT PATIENTS ATTENDING COMPREHENSIVE CARE CENTRE BUSIA COUNTY REFERRAL HOSPITAL

A DISSERTATION SUBMITTED TO THE UNIVERSITY OF NAIROBI FOR THE REQUIREMENT OF MASTER OF SCIENCE DEGREE IN CLINICAL PSYCHOLOGY.

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DEDICATION

I dedicate this work to institutions that endeavor to provide quality of life to People Living with HIV & AIDS most specifically to Busia County Referral Hospital administration.

ACRONYMS AND ABBREVIATIONS

AIDS	-	Acquired Immune Deficiency Syndrome
APA	-	American Psychology Association
ARV	-	Anti-retroviral
ART	-	Anti-retroviral Therapy
AUD	-	Alcohol Use Disorder
AUDIT	-	Alcohol Use Disorder Identification Test
BBB	-	Blood-Brain Barrier
BDI	-	Becks Depression Inventory
CCC	-	Comprehensive Care Centre
CD4	-	Cluster of Differentiation 4
CNS	-	Central Nervous System
DALYs	-	Disability-Adjusted life years
DSM IV	-	Diagnostic and Statistical Manual IV
DSM V	-	Diagnostic and Statistical Manual V
HAART	-	Highly Active Anti-Retroviral Therapy
HIV	-	Human immunodeficiency Virus
MDD	-	Major Depressive Disorder
NIMH	-	National Institute of Mental Health
PLWHIVA	-	People Living with HIV &AIDS
SSA	-	Sub-Saharan Africa
WHO	-	World Health Organization
KNH-UoN-ERC	-	Kenyatta National Hospital UON Ethics and Research Committee

OPERATIONAL DEFINITION OF TERMS

Mental Disorders: Disorders of thought, emotions, behavior and/or relationships with others that lead to functional impairment in one or more areas of one's life.

Mental Health: State of well-being that enables every individual to realize their potential with their developmental stage, to cope with normal stresses of life, to study or work productively and fruitfully and to contribute to their community.

Quality of life:

How an individual perceives their position in life in their cultural context and value systems of oneself and society one belongs to in reference to their goals, expectations, standards and concerns.

Psychoactive Substances: According to the World Health Organization, psychoactive substances refer to substances that when consumed affect one's mental processes such as cognition, behavior and affect.

Anti-Retroviral Therapy: It is a drug therapy aimed at keeping the levels of HIV in your body low in order to let the immune system to be strong.

T-Lymphocyte: Also called T cell. A type of white blood cell that is involved innate and adaptive immunity of the body.

Major Depressive Disorder: Persistent sadness and loss of interest in activities that you once found enjoyable with significance in detriment of ability to carry out daily activities.

Comorbidity: Involves bearing more than one disorder or illness where all the illness occurs at the same time or one after the other.

Disability-Adjusted Life Years: Disability-adjusted life years (DALYs) represent a time-based measure of the overall burden of disease for a given population. DALYs are the sum of years of life lost due to premature mortality as well as years of life lost due to time lived in less than full health.

Burden of disease: This involves the gap between current health status and an ideal situation that involves everyone living to old age and is free of disease and disability. The causes of this health gap involve premature death, disability and risks that contribute to illness and injury.

Adherence: The extent to which one's behavior of taking medication, following certain nutritional and dieted guidelines, observing certain lifestyle changes, is in line with recommendations from a health caregiver. This involves taking the medication in the recommended dosage and schedules following the instructions as per prescription.

ABSTRACT

Background: People Living with HIV & AIDS (PLWHIVA) face several mental health problems. Unfortunately, there is paucity of epidemiological data that have assessed the prevalence of mental health problems among these populations living in Sub-Saharan Africa (SSA) where the largest numbers are of individuals on Anti-Retroviral Therapy (ART). Further, there is great vulnerability among PLWHIV/AIDS to Depressive Disorders (DD) and Alcohol Use Disorder (AUD) leading to poor adherence to ART. To determine the prevalence of Depression, Alcohol Use Disorder and their association with ART adherence among adult PLWHIVA attending Comprehensive Care Centre, Busia Referral County Hospital (BCRH).

Methods: Descriptive cross-sectional study was carried out on 344 respondents. Alcohol Use Disorders Identification Tool (AUDIT), Becks Depression Inventory scale (BDI), research-developed socio-demographic questionnaire and CASE Adherence Index Questionnaires were approved by KNH-UoN-ERC and used. Statistical Package for Social Sciences version 23 was applied using descriptive statistics and logistic regression analysis to determine the associations between AUD, Depression, ART adherence and socio-demographic variables set at p-value <0.05. Results were presented in figures, tables, pie-charts and narratives.

Results: The prevalence rate of depression was 13.7%, AUD 5.8 % and Adherence to ART 83.1%. While there was no statistically significant association between depression and adherence to ART (OR=1.871, 95% CI 0.904-3.871, p =0.091), the likelihood of having AUD when one had poor adherence was higher (OR=2.882, 95% CI 1.097-7.575, p =0.032), odds of developing depression when one had no AUD was lower (OR=0.338, 95% CI 0.123-0.929, p =0.03). After adjusting for each significant predictor, being male showed lower likelihood to having depression and AUD (AOR=0.249, 95% CI 0.101-0.61, p=0.002) (AOR=0.249, 95% CI 0.101-0.611, p=0.050) respectively while showing higher likelihood to depression on being on ART for less than a year (AOR=5.859, 95% CI 1.466-23.420 p=0.012) and being on ART for more than two years but less than 5 years (AOR=2.722, 95% CI 1.112-6.660, p=0.028). Additionally, higher likelihood to AUD was seen in being on ART for more than a year but less than 2 years (AOR=19.674, 95% CI 1.199-322.766, p=0.037). In adherence to ART, higher likelihood was seen in being in first line regimen (AOR=2.692, 95% CI 1.264-5.736 p=0.010)

Conclusion: Being female and being on ART treatment within first 5 years has shown to increase odds of developing these psychological distresses among the respondents. On HIV/AIDS, being on 1st line regimen affects one's adherence to ART. No statistically significant relationship was observed between depression and adherence to ART however, there was significant relationship between; AUD and depression, AUD and poor adherence.

CHAPTER ONE: INTRODUCTION AND BACKGROUND OF THE STUDY

1.0 Introduction

The Global Burden of Disease study states that depression and Substance Use Disorders are the predominant mental health problem worldwide (IHME, 2017). Depression is also found to be highly significant in the HIV/AIDS population where it is the second most common psychiatric disorder following substance abuse (Rivera-rivera et al., 2016). According to the 5th Edition of the Diagnostic and Statistical Manual of Mental Disorders, (DSM-5 2013), Major Depressive Disorder (Dysthymia), Substance/Medication-Induced Depressive Disorder, Depressive Disorder Due to Another Medical Condition, Other Specified Depressive Disorder, and Unspecified Depressive Disorder are all examples of depressive disorders. The DSM-5 further includes Disruptive Mood Dysregulation Disorder among children less than 12 years and Premenstrual Dysphoric Disorder which occurs after ovulation and remits during menses.

Commonality in depressive disorders is observed in sadness, emptiness and irritability of mood that one presents with somatic and cognitive changes that affect one's functionality significantly. The difference among them is duration, timing and presumed etiology (Khan, 2015). The National Collaborating Centre for Mental Health (NCCMH) claims that (2018) the etiology of depression is viewed genetically as hereditary. The biological cause of the disorder is based on an imbalance in brain chemicals norepinephrine, serotonin and dopamine. Factors of the environment that are stressors also cause depression such as childhood trauma, severe medical conditions, losses, death or separation such as from parents, divorce as an adult, loss of a job, conflict in the family, retirement and having serious financial problems. Psychological factors include stigma, discrimination, and the burden of impaired functioning which can be due to a medical condition.

Depression exhibits symptoms such as low mood, loss of interest and pleasure to things, reduced energy, having guilty feelings or feelings of low self-worth, having disturbed sleep, poor appetite and concentration (Tesfaw et al., 2016). Being able to differentiate the symptoms of depression from that of the HIV infection remains a dilemma. Viral illnesses can cause cytokine-induced sickness behavior that bears the same symptoms as depression e.g., being in a low mood, lethargy/diminished energy, isolation, having little motivation to eat, altered sleep patterns, and decreased grooming. This places the risk of the disorder being under-recognized or under-treated (Rivera-rivera et al., 2016)

The risk of suicide must be assessed, and if it is moderate or high, it must be addressed. Suicidal ideation as a symptom of depression is the most vital symptom among HIV positive patients. The thoughts are common among them as one study showed that 27% of the respondents who were above 40 years of age had such thoughts in the week that proceeded while the same study done on a broader sample size showed that 19% had thoughts of suicide the week that proceeded (NICE, 2018). A South African study found a 24% prevalence of suicidal ideation among people seeking HIV testing. Rates of suicidal ideation or attempts ranged from 13–17% among people living with HIV in three African studies (UNAIDS, 2018b)

According to the Diagnostic and Statistical Manual of Mental Disorders 5th edition (2013) Alcohol Use disorder involves taking large amounts of alcohol over a prolonged time than intended, having a hard time stopping drinking, having tolerance, cutting back on interesting things one used to do, continued used despite having physical or psychological concerns and use of alcohol in hazardous situations (Babor et al, 2014)

Rivera et al (2016) posits that some neuropsychiatric symptoms may be related to the type of ART in use. While HIV treatment lowers the risk of some mental health conditions some

commonly prescribed antiretroviral (ARV) medications can also result in neuropsychiatric side effects in half of those using them. Prolongation of life, decrease of viral load, immunological reconstruction, therapeutic, and epidemiologic aims are all part of ART's five-fold goals. ART is successful at suppressing HIV in the body to undetectable viral levels, improving PLWHIVA's quality of life, increasing life expectancy, preventing opportunistic infections, preventing HIV progression to AIDS, and reducing HIV-related death (Dan, 2016). ART side-effects can also include psychiatric symptoms. Mania and psychosis have been linked to zidovudine and abacavir, while mood swings and vivid dreams have been linked to nevirapine and efavirenz. (UNAIDS, 2018b).

Critical factors that affect adherence to medication can be placed in four main groups. Patient factors such as the use of drugs and alcohol, age, sex, cultural beliefs or ethnicity; medication regimen which includes the complexity of the regimen, side effects, number of pills or food requirements; patient-health care provider relationship and the system of care. The most important link between a prescribed regimen and treatment outcome is the patient's behavior such as the patient not taking the medication as recommended or fail to take it at all. This can even make the most effective regimen to fail. Consequently, all things being equal, the most important factors influencing adherence are patient-related (Azia et al., 2016).

This great link between psychological anatomy and cellular immunity places great need to understand the rate at which depression and AUD prevail among PLWHIV/AIDS and to view the impact they have on observance to ART.

1.1 Background of the Study

1.1.1 Burden of Depression

To understand mental health globally, evaluation of the prevalence of depression and how this prevalence varies geographically and economically based on the income of a country and the assessment method used becomes important. According to a research on the epidemiology of depression across cultures, the average lifetime and 12-month prevalence estimates of major depression in high-income nations were 14.6 percent and 5.5 percent, respectively, and 11.1 percent and 5.9 percent in low- to middle-income countries (Ronald C. Kessler, 2014).

1.1.2 Burden of Alcohol Use Disorders

According to WHO (2018) Worldwide, 3.3 million deaths occur every year resulting from the use of alcohol in a way that is harmful. This represents 5.1 % of Disability-Adjusted Life Year's (DALYs) lost globally. A report by WHO showed that 4 out of every 100 Kenyans die out of alcohol use with the prevalence of alcohol use disorders being at 4%, that of alcohol dependence at 1.4 %, and that of harmful use of alcohol at 2.6 % of the entire population (WHO, 2016).

1.1.3 HIV burden

According to the UNAIDS World AIDS day report 2018, 36.9 million individuals in the world were living with HIV (UNAIDS, 2018a). According to (Avert, 2018) Kenya has one of the largest HIV epidemics in the world alongside Mozambique and Uganda.

1.1.4 Depression and HIV Burden

The prevalence of depression in HIV/AIDS patients is two times higher than in the HIV-negative population. This represents 20% to 40% of HIV/AIDS patients (Tymchuk et al., 2018). According to UNAIDS (2018) a recent meta-analysis of studies from sub-Saharan Africa found a 24% prevalence of depression amid HIV+ individuals.

1.1.5 Alcohol Use Disorders and HIV Burden.

Among the HIV positive population, the number of heavy drinking individuals is at least twice that of the HIV negative individual heavy drinkers. (Bultum et al., 2018).

1.1.6 Adherence to ART

According to Fonsah et al (2017) more than twenty five million persons have died from HIV/AIDS since 2000. This has occurred mostly in SSA. To reduce the high HIV/AIDS-related mortality rate, international efforts have been made to make antiretroviral therapy (ART) more inexpensive and to provide treatment access to more HIV-positive people. Adherence to the regimen has remained to be the most important aspect that would show one's ability to maintain suppression of the HIV virus to below the level of detection.

1.1.7 Alcohol Use Disorders and Adherence to ART

Chronic alcohol use while on HAART is associated with adherence reduction to HAART. This decreased adherence leads to decreased HAART effectiveness and ultimately will increase HIV-related mortality.

1.1.8 Depression and Adherence to ART

Depression medication, according to a recent meta-analysis, enhances adherence to ART. Non-adherence was 35 percent higher amongst those who did not receive depression treatment, while adherence was 83 percent higher in people who received depression treatment or psychological distress treatments (UNAIDS, 2018b).

1.2 Problem Statement

Access to ART has significantly changed the clinical course of Human Immunodeficiency Virus (HIV) with a significant decline in morbidity and mortality. The challenge has now taken a turn from focusing on access to focusing on adherence due to the chronicity of the illness.

Adherence to the medication, however, comes with its pitfalls such as complexity of the regimens of ART and substantial side effects that come with its use.

CD4 testing should be done every 6 months until the CD4 count is over 350 cells/cm and the viral load is fewer than 1000 copies/ml, a condition known as viral suppression (Dutta et al., 2018). This, in and of itself, is a difficult path that puts one at risk for depression and alcoholism.

Depression and drug abuse are the most commonly diagnosed mental diseases in general hospitals, and they are more usually related with chronic medical problems. Mental illness signs might be overlooked, especially when physical symptoms are high and present in a manner comparable to that of the supposed mental illness.

Among HIV positive patients, depression is the most prevalent psychiatric condition seen that leads to a decline in the CD4 count and T lymphocytes, reduced adherence to drugs and an increase in viral load (Nga'nga', 2014). The use of alcohol by HIV infected individuals is related to a prognosis that is poor or worse. There is a risk of increased morbidity and mortality with increased disease progression. There is also a risk of low adherence to Anti-Retroviral Therapy (ART) which causes CD4 count and T lymphocytes to decline and viral load to increase (Santos, 2017).

It is a concern that Alcohol Use Disorder and Depression are widespread among HIV+ people than the overall population. Alcohol Use Disorder contributes to neuronal brain damage when the alcohol crosses the brain-blood barrier and facilitates behaviors that place one at risk of not adhering to medication due to deficits in brain functions such as memory. Depression stands at great risk of going unnoticed or under-treated because its symptoms may present as that of the HIV infection. Suicide is a symptom in depression and it remains to be one of the main issues amid patients with HIV. The disorder causes great reduction in one's general quality of life as symptoms

such as having trouble with sleep, isolation, feelings of unworthiness, low general mood, suicidal ideation, fatigue easily exacerbate reduced adherence to ART from reduced motivation to forgetfulness or ignorance to the regimen.

Busia County is among the top five counties with the most prevalence of HIV infection (Aids & Council, 2018). There are few kinds of researches that have been done on the prevalence of depression and AUD among the HIV positive individuals that specifically look at the role these two disorders have on adherence to ART regimen. This research determines the prevalence of depression and AUD and their role in adherence to ART amid HIV+ people of 18 years and above attending CCC in Busia County Referral Hospital based.

1.3 Rationale

The study looked at the prevalence of depression, alcohol use disorders and their association with ART among adult PLWHIVA attending Comprehensive Care Center, Busia Referral County Hospital. The study will be based on the fact that HIV infection has continued to be a malady that greatly detriments one's daily functions. Having an adherence level of 95% is needed to achieve optimal viral suppression otherwise one becomes highly susceptible to psychiatric disorders such as depression and AUD. This leads to reduced quality of life of an individual. These Psychiatric disorders contribute greatly to reduced adherence to the medication of the illnesses.

The findings are aimed at informing policymakers, hospital administration, students and the general public on the prevalence of depression and AUD among adult PLWHIV/AIDS especially in areas where statistics already show a higher prevalence of HIV infection. They will also be able to have points of reference for any plans or frameworks that may be placed to curb the challenges faced in adherence to the medication regimen of the infection.

1.4 Research Question

1. What is the prevalence of depression and Alcohol Use Disorder among adult PLWHIVA attending Comprehensive Care Centre in Busia County Referral Hospital?
2. What is the association of Depression and Alcohol Use Disorder with adherence to ART amongst adult PLWHIVA attending Comprehensive Care Centre in Busia County Referral Hospital?

1.5 Objective

1.5.1 Broad Objective

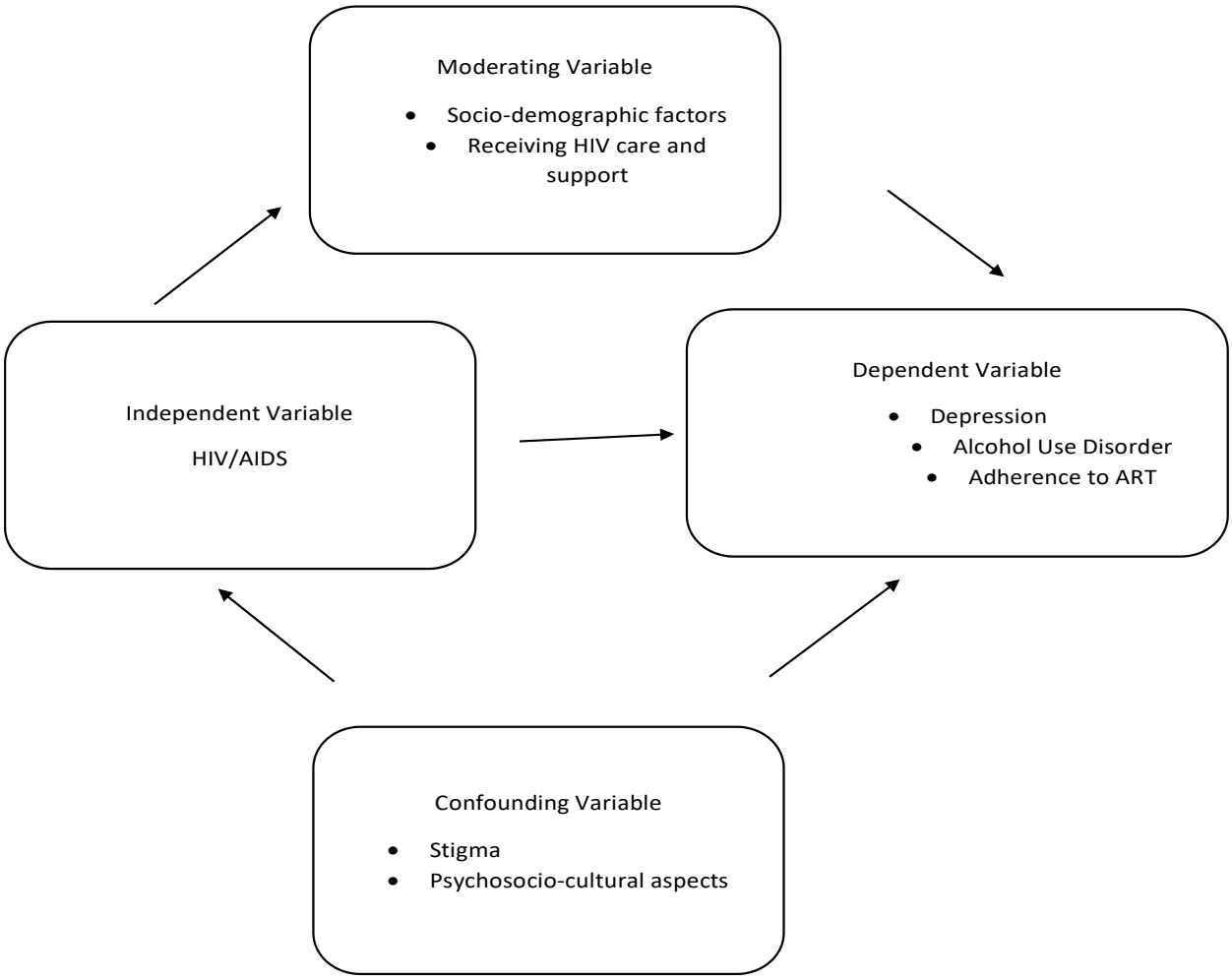
To determine the prevalence of Depression, Alcohol Use Disorder and adherence to ART among adult PLWHIVA attending Comprehensive Care Centre, Busia Referral County Hospital.

1.5.2 Specific Objectives

1. To establish the socio-demographic characteristics among adult PLWHIVA attending CCC at Busia County Referral Hospital.
2. To find out the prevalence of depression among adult PLWHIVA attending CCC at Busia County Referral Hospital.
3. To determine the prevalence of Alcohol Use Disorder among adult PLWHIVA attending CCC at Busia County Referral Hospital.
4. To determine the association of Depression and Alcohol Use Disorder with adherence to ART among adult PLWHIVA attending CCC at Busia County Referral Hospital.
5. To determine the correlation between socio-demographic characteristics, depression, alcohol use disorder and adherence to ART among adult PLWHIVA attending Comprehensive Care Centre at Busia County Referral Hospital.

1.6 Conceptual Framework

Figure 1: ***Conceptual Framework Showing the Variables***



KEY:

HIV/AIDS brings about many physical, social and psychological problems. Depression and Alcohol Use Disorder are among the most typical psychological disorders that come about with a positive HIV status aside from psychological difficulty of adherence to ARVs and psychosocial challenges of living with the condition. The research was meant to discover whether

HIV/AIDS is an exposure to having depression, AUD and adherence to ART problems. The target group involved HIV positive adults above the age of 18 years in Busia Referral County Hospital who visited the Comprehensive Care Centre. HIV/AIDS was hence an independent variable as the research did not need to carry out a measurement of one's status. Depression, AUD and Adherence to ART problems were the dependent variables that were scrutinized upon change in an individual living with HIV/AIDS.

One receiving HIV care and support and socio-demographic characteristics causes a moderation effect on the cause-effect relationship between one being HIV/AIDS positive and one having depression, AUD and adherence to ARVs problems so that the strength and association of the independent and dependent variable is affected. This hence acted as a condition in which the predictor was likely to cause the outcome. Confounding variables include psycho-social cultural aspects and stigma which would exaggerate or downsize the exposure and outcome relationship.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter examines the literature from a global, regional, and local perspective.

2.1 Global View

Globally, 36.9 million people are living with HIV. Out of these, 21.7million people are on treatment. ART coverage globally is 59% (Unitaid, 2018). Ceylan et al (2019) did a research in Turkey University Hospital to establish the adherence to medication and allied factors amid 158 PLWHA showed the median patient age of the participants at 38 years, 80.4% were male, and 51.3% married. Both HIV infection and antiretroviral therapy (ART) had a median duration of three years. Sixty-one percent of those surveyed took two medication regimens.

Depression and alcohol use disorders are common in low- and middle-income nations. Both are quite distressing to those affected (Pal et al., 2017). Depression will be ranked second in global illness burdens by 2020, according to the World Health Organization (WHO), and one of the priority disorders addressed by the WHO's Mental Health Gap Action Program (Lim et al., 2018). In alcohol use disorders, it is estimated that globally, about 100 million people have the disorders (UNAIDS, 2018b)

2.1.1 Depression

Among the common mental disorders, depression tops the list with a global prevalence of 4.4% of the world’s population. This is about 322 million people globally suffering from it. The prevalence rates are going higher and higher mainly in lower-income countries due to the high population and increasing risk factors in the disorder development (WHO, 2017). The risk of depression rises due to factors such as events in life, lack of employment or instability in one,

death of a loved one, separation or divorce, poverty and problems caused by alcohol and drug use (Ronald C. Kessler, 2014).

In a ten population-based cross-national comparison studies of major depression, lifetime prevalence estimates varied from 1.0 percent in the Czech Republic to 16.9 percent in the United States, 8.3 percent in Canada, and 9.0 percent in Chile. Prevalence estimates for the 12-month period varied from 0.3% in the Czech Republic to 10% in the United States, 4.5 percent in Mexico, and 5.2 percent in West Germany (Ronald C. Kessler, 2014). The present depression was found to be 1.6 percent in a review of epidemiological research in mainland China (Hall et al., 2017). The National Mental Health Survey of India, conducted in the general population in 12 Indian states (n = 34 802), reported the prevalence of depressive disorders as 2.7% (Pal et al., 2017).

It is worth noting that prevalence rates fluctuate with age, with rates rising in later adulthood. Depression is more common among children and teenagers under the age of 15, while it is less common in later age groups (WHO, 2017).

2.1.2 Alcohol Use Disorders

In a 2017 WHO report indicated that globally people who died due to alcohol use were about 3 million in 2016. Meaning that 1 out of 20 deaths reported that year around the globe was due to alcohol-related consequences. The report states that in general, there is an unacceptably high disease load and injuries due to harmful use of alcohol.

Alternately, harmful alcohol use causes neurocognitive impairment when alcohol crosses the Blood-Brain barrier and causes neuroinflammation. Neuro-inflammation causes brain cell death and ART cannot fully eliminate HIV that may intrude the vulnerable areas. Alcohol can induce neuro-degeneration through neuro-inflammation (Monning, 2018). The Central Nervous System areas that are affected are the frontal lobe, limbic system, and subcortical structures which

represent reward processing systems and higher-order cognition. We then understand that both AUD and HIV suffering individuals have deficits in executive function, memory and learning. Interactions with alcohol and ART may also contribute to hepatoxicity placing one at an ill-state (Diclemente & Patel, 2017).

In the preceding 12 months, the prevalence of AUD varied by WHO region, with the highest prevalence of AUD in the European Region of individuals 15 years and older representing 8.8 percent of the population of that age group, followed by 8.2 percent in the Region of the Americas, 3.7 percent in the African Region, and 0.8 percent in the Eastern Mediterranean Region (World Health Organisation, 2018).

According to the Global Status Report on Alcohol and Health (2018), current drinkers consume an average of 32.8 grams of pure alcohol per day, with the African region consuming 20% more (40.0 g/day) and the South-East Asia region using 20% less (26.3 g/day). In comparison to upper-middle-income and high-income nations, the burden of alcohol-related illness was largest in low-income and lower-middle-income countries, according to the survey (World Health Organisation, 2018).

In the United States, AUD is highly prevalent and highly comorbid hence can easily go untreated. Research was done in the US by the National Epidemiologic Survey on Alcohol and related conditions involving face to face interview with US non-institutionalized representatives who were 36 309 civil adults from 18 years of age. The results showed the prevalence of AUD in 12 months and lifetime to be 13.9%and 29.1% (Grant et al., 2015). According to Pal et al (2017), using the Mini International Neuropsychiatric Interview, India's National Mental Health Survey performed research in the general population in 12 Indian states (n = 34 802) and found that the prevalence rate of alcohol-use disorders was 4.6 percent (MINI).

2.1.3 Depression, Alcohol Use Disorders and Adherence to ART

Antiretroviral therapy (ART) adherence is such an important aspect as even the slightest lack of adherence to the prescribed regimen can cause viral resistance. Many studies done on ART have continued to insist near perfection adherence levels of the users to adequately repress viral replication. One's level of observance can be measured in form of counting of pills, caregivers' reports, and drug blood level monitoring and self-report by the patient. HIV patients are to strive to maintain undetectable levels of the virus in the blood with not less than 95% adherence. To say HAART is a successful therapy one's CD4 cell count should be rising, there should be unnoticeable viral loads and clinical maximal improvement in patients who receive HAART (Rivera-rivera et al., 2016)

Lifelong adherence therapy has become an important issue given that it aims at ensuring that HIV positive individuals enjoy their quality of life. Various determinants have been related with non-adherence to ART apart from Depression and AUD. Such factors are cultural and religious beliefs- traditional healing in some African countries, myths, inaccessibility to health centers, lack of knowledge on ART, unemployment and poverty (Kheswa, 2017). Costs of transportation, a lack of social support, and poor healthcare provider practices such as insufficient counseling sessions, abuse of patient confidentiality, lack of adherence follow-ups and drug stock-outs, high pill burden, and food and fluid restrictions are all well-known barriers to adherence (Bayew Tsega, 2015)

The virus is exposed to insufficient concentrations of antiretroviral medications when medication is taken irregularly, in the wrong doses, or in the wrong combination of medications, resulting in ongoing viral replication and the development of resistance to antiretroviral medications due to mutations. Resistance to antiretroviral medications accounts for a high

percentage of failure of treatment (Dutta et al., 2018). Cross-resistance occurs when the virus develops resistance to one antiretroviral treatment as well as other antiretroviral medicines in the same class that the patient has not yet been treated. As a result, the number of medications available to replace the failed regimen is limited. Resistant strains of the virus can also be passed on to a partner, thus a patient diagnosed with HIV for the first time who has never undergone antiretroviral therapy (ART) is already resistant to some antiretroviral drugs (AIDS & Control, 2018)

To understand the adherence factors in ART, a study was done in Turkey to establish medication adherence and related factors amid 158 PLWHA in a Turkish university hospital. Responses included missing dosage because one is busy, having the thought that the pills taken daily were too many, having ART related side effects, some could not afford the drugs, some had no awareness on importance of adherence (Ceylan et al., 2019).

Understandings are given on how depressive symptoms hinder one from adhering to medication reduced hence causing reduced adherence. The prevalence of an irritable mood, as well as bodily and cognitive alterations that limit the individual's ability to function, are all prevalent symptoms of depression, and they considerably diminish an individual's desire to take HIV medicine. The frequency at which the depressive episodes occur also has a direct correlation with the chances of non-adherence (Moraes et al., 2017).

Low mood and loss of interest are two cognitive symptoms that can lead to a lack of desire for everyday activities, including taking medicine on time. Poor concentration might show as adherence amnesia, which is a significant cause of missed doses in many patients (Tymchuk et al., 2018). Vegetative symptoms such as loss of appetite make it hard to consume foods needed to have the medication properly absorbed leading the patients to skip doses with the intention of mitigating the side effects intensified by poor dietary intake. Sleep disturbance causes a general

disturbance in daily routine. Fatigue also messes one's planned functions of the day and accomplishment of tasks such following dosing regimens (Andersen et al., 2015)

Alcohol use disorders among people living with HIV / AIDS in Southern Brazil was studies between December 2012 and July 2013. At a reference hospital in southern Brazil, three hundred and forty-three patients were questioned. Alcohol misuse was reported by 28.6% of respondents, and probable dependency was reported by 5%. (Moss et al., 2017). Even occasional alcohol use can complicate HIV/AIDS clinical management by worsening treatment outcomes and patient condition, decreasing medication adherence, increasing the risk of hepatic injury, reducing the ability to practice safer sex, increasing the risk of medication side effects, and changing the pharmacokinetics of prescribed drugs (Bultum et al., 2018).

2.2 Regional View

In the world, there are 34 million PLWHIV and two-thirds of them are from Sub-Saharan Africa (SSA) (Karanja, 2013). Among the chronic diseases in most areas, HIV infection can now be considered as one of them, especially in Sub Saharan Africa. People Living with HIV & AIDS face several non-communicable disorders and those dealing with one' mental health have not been paid attention to SSA where there is the largest number of PLWHIV and are receiving care services (Bernard & Rekeneire, 2017).

In Eastern and Southern Africa, there are 19.6 million people living with HIV/AIDS. Out of these, 66% of adults aged 15 years and above are accessing ART (UNAIDS, 2018a). A descriptive qualitative research done among 18 non-adhering patients between the age of 18 and 63 on ART research done in the Vredenburg regional hospital showed mean age of the participants to be 38 years. There were 13 females and 5 males. Nine patients had attempted high school, 8 had either gone to primary school or had no formal education only 1 patient had completed high school.

Thirteen of the patients were single only one was divorced the other four were either widowed or married. Fourteen of the patients were not employed. Twelve patients were between 6 months and a year of ARVs. Four were on ARVs for more than 1 year but less than 2 years. Two patients were on ARVs for more than 2 year (Moraes et al., 2017)

2.2.1 Depression

The Rate of depression in Africa is higher than in USA and Europe (*Treating Depression in Africa at Scale*, 2016). According to WHO report (2017) estimates made showed that among African countries Djibouti is the first with 5.1% of its population being depressed. With 4.9 percent of their population depressed, Cape Verde and Tunisia tied for third place, followed by Lesotho with 4.8 percent of its population sad, Ethiopia and Botswana with 4.7 percent of their population depressed, and Algeria with 4.5 percent of its population depressed. Kenya/Comoros/Madagascar/Mauritius/Namibia/South Sudan landed in sixth place, with 4.4 percent of the population depressed.

2.2.2 Alcohol Use Disorders

In Africa, an estimated 43% of persons aged 15 and above have ever used alcohol, with 30% having used it in the previous year (Francis et al., 2015). A 12 months prevalence estimates of AUD showed individual African countries having a prevalence of between 0.2% and 7%. In East Africa, Uganda had a prevalence of 7.1%, followed by Rwanda 7.0%, Tanzania and Burundi at 6.8%, Kenya 4.0% and Ethiopia had a prevalence of 2.5% (World Health Organisation, 2018)

2.2.3 Depression, Alcohol Use Disorders and Adherence to ART.

Increased rates of depression have been associated to sub-optimal adherence to antiretroviral medication (ART) regimens in studies of persons living with HIV. This results in accelerated disease progression. Also, Major Depressive Disorder may often go undetected among PLWHA

as a result of unawareness amid patients and health-care workers (Andersen et al., 2015). In Nigeria, one study found depression occurring five times more common in people living with HIV/AIDS. A study in Nigeria on the prevalence of depression amid adult patients receiving antiretroviral therapy in a clinic in Jos showed 31% prevalence (Sule, 2018).

South Africa has the world's largest public ART program, with over 80% of participants being PLWHA. Stigma, disclosure, unemployment, lack of transportation, insufficient feeding, disability grants, and alternative forms of therapy were identified as major barriers to adherence in a descriptive qualitative study conducted among 18 non-adhering patients on ART research in the Vredenburg regional hospital, while inadequate follow-ups and lack of patient confidentiality were major criticisms from the patients (Azia et al., 2016)

From January 2002 to October 2014, a systematic evaluation of adherence to ART in Sub-Saharan Africa was conducted using six databases: PubMed, Cochrane Library, EMBASE, Web of Science, Popline, and Global Health Library. Alcohol use, male gender, traditional/ herbal medicine usage, dissatisfaction with healthcare facility and healthcare professionals, depression, discrimination and stigmatization, and a lack of social support were the key factors of non-adherence (Heestermans et al., 2016)

According to research done by Bernard et al (2017) in Sub Saharan Africa among individuals who are 18 years of age and older with HIV on the prevalence of depression, estimates showed a prevalence rate ranging between 9% and 32% in living PLWHIV on antiretroviral treatment. The research was based on the fact that depression is the most common psychiatric disorder and is two times more prevalent in people living with HIV (Moraes et al., 2017)

A systematic review and meta-analysis of epidemiology of depression in people living with HIV in east Africa was done on 283 title articles on PubMed, EMBASE, SCOPUS and others. The

pooled prevalence of depression in PLWHIV was 38%. The pooled prevalence estimates of depression in Ethiopia was 49.79% and 30.88% in Uganda (Ayano et al., 2018). Among the factors that were associated with adherence to ARV therapy in Ethiopia were marital status, living condition, experienced side, drug regimen and distance to care service center. This was according to a research done among 352 adults Living with HIV/AIDS in North Eastern part of the country (Mengistie et al., 2018).

A survey done in Abuja Nigeria in three HIV treatment centers on individuals who are 18 years and above to evaluate the prevalence of AUDs among people living with HIV/AID and had the data presented as 7.8% harmful alcohol use, 7.0% alcohol abuse, and 2.2% alcohol dependence (Egbe et al., 2017), another comparison survey was done between 151 adult participants with 1 or more missed doses in the preceding month showing twice the odds of having a major depressive episode as those with no missed doses during this period. Among those With Psychiatric Disorders (WPDs), 8.6% had missed one or more doses in the previous week, compared to 7.6% of No Psychiatric Disorders (NPDs). Also, within the previous month, 14.0% of WPDs, compared to 10.3% of NPDs, had missed at least one dose. Among individual psychiatric disorders, a diagnosis of depression was significantly associated with non-adherence within the past month (Adejumo, 2016).

A study was conducted at a Nigerian University Teaching Hospital clinic to determine the frequency of depression disorder in HIV/AIDS patients taking HAART, the influence of depressive disorder on antiretroviral drug adherence, and the relevance of the association. The study enlisted the participation of 310 HIV/AIDS patients on HAART. Twenty-one percent (21.3%) showed substantial depression symptoms, while 14.2% matched ICD-10 depressive disorder diagnostic criteria. Overall, HAART adherence was good in 73 percent of individuals. In

comparison to 21.1 percent of patients without depressive disorder, 63.6 percent of participants with depressive disorder reported poor adherence to HAART (p0.05) (Olisah et al., 2010).

Alcohol use among PLHIV is also an issue of concern to health care and public health professionals because it tends to interfere with the treatment pathway of HIV/AIDS and the infection pathway of the virus. Alcohol use can interfere with the efficacy of ART as well as drug adherence, thus reducing the treatment outcome associated with the use of such drugs. One study involving 399 PLHIV conducted in Abuja, Nigeria using the AUDIT test tool found a 12% prevalence of hazardous alcohol use among this subpopulation (Egbe et al., 2017).

In rural Lesotho, South Africa, researchers studied alcohol consumption and depression to see if there was a connection between adherence and viral suppression in adult antiretroviral treatment patients. A cross-sectional research found that 80.7 percent of 1,388 adult patients were alcohol-free, whereas 6.3 percent were hazardous drinkers. Depressive symptoms were seen in 28.8% of people. Poor adherence was shown to be connected with both alcohol use and alcohol use disorder (Cerutti et al., 2016).

2.3 Local View

According to the National AIDS Control Council, the adult HIV prevalence rate in the United States is estimated to be 4.9 percent. The percentage of individuals aged 15 to 49 who have HIV is known as adult HIV prevalence. Siaya 21.0 percent, Homa Bay 20.7 percent, Kisumu 16.3 percent, Migori 13.3 percent, Busia 7.7 percent, Nairobi 6.1 percent, and others were the counties with the highest adult HIV prevalence in 2017.

According to (Nga'nga' 2014) a research carried out in Nairobi County at Kangemi Health Centre CCC in Nairobi on Psychiatric morbidity among 245 adult HIV/AIDS Patients attending the CCC at the clinic showed the mean age of the patients was 37.3 years (SD 9.2) with an age

range from 19 to 70 years. Seventy-five percent (75.9%) of the patients were female. The median duration of HIV infection was 5 years, and 64.4 percent of the 216 patients with recent CD4 counts had levels below 500 cells per mm3. In Kenya, 69 percent of individuals living with HIV received treatment in 2018. In Kenya, sex workers have the highest HIV prevalence of any population (HIV/AIDS, 2018)

2.3.1 Depression and Alcohol Use Disorder.

Depression and AUDs are highly prevalent in Kenya and they bear great burden in comparison to other mental health disorders (Meyer & Ndetei, 2015). There is significant higher prevalence of alcohol use among college students that in the general population in Kenya. In addition, alcohol is the most prevalent drug used (Ndegwa et al., 2017).

2.3.2 Depression, Alcohol Use Disorder and Adherence to ART

In 1996, Kenyans who were living with HIV were 10.5% and by 2015, the prevalence rate of the illness almost halved to 5.9%. An explanation for this is connected to the rapid scale-up of HIV treatment and care such that in 2016, 64% of people living with HIV were on treatment, 51% of whom were virally suppressed. Geographically, 65% of all new infections occurring in nine out of the country's 47 counties occur mainly on the west coast of Kenya.

High levels of adherence are needed for the drug to work effectively to ensure drug resistance does not occur. This is because if it occurs, the virus would multiply regardless of the dose one takes (Amankwah, 2015). Drug-resistant strains need costly second- or third-line treatments, which come with more adverse effects than first-line therapies (Dan, 2016).

According to the National Guidelines for the Management of HIV and AIDS in Kenya (2015), depression affects 20% to 40% of PLHIVs seeking medical attention. The incidence of significant depression among patients with HIV infection alone and people with AIDS has been

estimated to be between 15% to 40% higher than the general population's prevalence. Depression is at least twice as common in PLHIVs as it is in the general population. Depression has been linked to a faster course of HIV and AIDS.

According to a research conducted in Kenya, depression affects 24.74 percent of persons living with HIV who attend the AMPATH clinic in Kitale County Referral Hospital (Mwaura, 2018). Descriptive cross-sectional research was done at Kangemi Health Centre in Nairobi on Psychiatric morbidity among 245 adult HIV/AIDS Patients attending the CCC at the clinic. Results showed that PLWHIV receiving follow up care in the county experience several psychiatric morbidities. The leading psychiatric condition was recorded to be MDD at 32.2%. (Nga'nga', 2014).The research was based on the background that low-income countries in Africa contribute up to 68% of the HIV infection worldwide.

A descriptive cross-sectional study carried out among PLHWA who attended HIV services at the Comprehensive Care Centre, KNH in September and October 2014 showed an overall prevalence of AUDs was 14%, with hazardous use and harmful use 5.5% and alcohol dependence accounting for 8.5%, respectively (Kibera, 2015)

In addition, research done by Kibera (2013) at Kenyatta National Hospital, a referral hospital in Nairobi sought to determine the prevalence of depression and alcohol use disorder among 227 patients attending CCC in the hospital showed that there is a significant burden of AUD and depression among HIV positive patients attending the hospital CCC. AUD prevalence was at 14% and depression at 23.8 %

Further, in Mbagathi district hospital, research was done on the factors influencing adherence to antiretroviral therapy among sero-positive client at the hospital convenient sampling method was used to select the 85 respondents for the study. Factors significantly associated with

high ART adherence levels were adequate knowledge regarding the therapy, accessibility of the ART and positive attitude towards the therapy. However, Stigmatization and discrimination were found to be obstacles to effective ART adherence (Amankwah, 2015)

In Western Kenya, a study was done to determine the factors that affect adherence to ART in Siaya County showing stigma, cultural, religious beliefs and social support to be affecting adherence to ART. The study consisted of PLWHA aged 18 years and above where qualitative methods of data collection, including in-depth interviews, focus groups were used. The sample population involved 210 PLWHA. Poverty, stigma, cultural and religious beliefs and lack of social support hampered PLWHA's adherence to ART in Siaya County(Dan, 2016).

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter covers research designs, study site, the population of interest, sampling design, sample size, data collection, data analysis, ethical consideration and the limitations of the study.

3.1 Research Design

The study was a descriptive cross-sectional design meant to assess the prevalence of Depression, Alcohol Use Disorders and their association with ART adherence among adult patients attending Comprehensive Care Center, Busia Referral County Hospital.

3.2 Study Area

The research was conducted in Busia Referral County Hospital CCC in Busia County where the clinic serves to provide care, prevention, treatment and support to individuals with HIV. Academic Model Providing Access to Healthcare (AMPATH) started as a HIV clinic at the Busia Referral County Hospital in 2006. AMPATH is a scholastic medical partnership between North America academic health centers driven by Indiana University School of Medicine and the Moi University School of Medicine in Eldoret Kenya. It is an expansion and extension of the AMPATH Plus contract granted by the U.S Agency for International Development (USAID). One of its focuses is to provide HIV/AIDS care services through care, research and training as a three-way mission. The main aim of the clinic is to provide psychosocial support and accessible ART treatment for HIV infections which had earlier been growing at an alarming rate.

In the year 2006, the Government sighting the need to increase accessible ART treatment to the growing number of HIV patients in the country. It partnered to open the CCC at the hospital as an integration of two programs; AMPATH Plus program and the Ministry of Health program

aimed at working under one management system. This CCC unit has become a model HIV clinic successfully combining capacity, quality and access services to the HIV infected patients.

Some of the services provided by the unit include:

- Preventive care.
- Curative care.
- Psychosocial interventions.
- HIV Counseling and Testing that focuses on new patients, Supposed Treatment Failure, Tuberculosis infected, Sexually Transmitted Infected, Prevention of mother to child transmission of HIV, discordant couples, Pre-exposure Prophylaxis, home and community-based HIV care.
- Training and facilitation of research in HIV/AIDS management.
- Laboratory services e.g. viral load testing, CD4 cell counting.
- Pharmacy services.
- Campaigns and awareness.
- Follow-up.

Patients of all ages are provided for these services on particular clinic days, home visits or during support group meetings. The patients come for their clinic days throughout the weekdays. Their support group meetings occur every Saturday of the week. The home visits are done on particular prescribed days of the month by the managing office. However, some of the patients attend the clinic on some unassigned days. The services offered are provided by the nurses, medical officers, psychologists, social workers and general administrators.

3.3 Study Population

The study focused on 344 PLWHIVA aged 18 years and above who were registered in the clinic and were receiving care. The participants needed to have been on the ART program for at least one month preceding the study. There is a total of 4000 PLWHIVA patients that visit the care center with 2500 being those who are on current follow up of care and services. Out of these, 20% are older adults of age 59 years and above, 38% are youths of age 25-59 years, 5% are adolescents of age 18-25 years, 25% are adolescents of age 15-18years and 13% are children less than 15 years of age.

Table 1: ***Study Target Population***

ADULTS CATEGORIES(YEARS)	TOTAL NUMBER
18-25	200
25-59	1500
59 AND OVER	800
TOTAL	2500

3.4 Exclusion and Inclusion Criteria

3.4.1 Inclusion Criteria

- HIV/AIDS patients aged 18 years and above.
- Consenting patients.
- Registered for care services in the clinic.
- Can communicate in English or Kiswahili which are prominent languages in Kenya.

3.4.2 Exclusion Criteria

- Patients below 18 years of age.
- Non-registered members receiving care services in the clinic.
- Those too ill to participate.

3.5 Sample Size Determination

The size of the sample was calculated using Yamane's Formula (1967)

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

n is the sample size

N is the target population size

e is the margin of error/Level of precision

Confidence level is 95% with P-value of < 0.05

$$N = \frac{2500}{1+2500(0.05)2}$$

= 345 participants.

3.6 Sampling Procedure/Technique

Simple random sampling was used in the study as per inclusion and exclusion criteria. The selected respondents were selected as per the inclusion criteria.

3.7 Recruitment and Consenting Procedures

This was based on the number of HIV/AIDS patients aged 18 years and above who receive treatment and care at the hospital, hence, visited the CCC on either their assigned clinic days,

unassigned clinic days or attended support group meet-ups. The researcher attended the clinic daily within the data collection months. All the staff of the clinic were informed of the research activity before the commencement of the study, the triage officer was provided with a chart of the inclusion and exclusion criteria. Patients who met the inclusion criteria were directed to the room where the researcher was located. The researcher explained the agenda of the research which thereafter, informed consent was provided with more details of the study and for signing when one voluntarily would agree to be part of the study.

Consent from Busia Referral County Hospital CCC, The University of Nairobi, Ethics Committee, Ministry of Health Busia County and respondents were obtained first. When the researcher entered the CCC, the researcher positioned herself in the room agreed upon by the clinician in charge or the managing officer. With the assistance from the staff in the clinic and initiated by the researcher's request for any patient that meets the inclusion criteria from the triage officer, they were kindly asked to pass by the room for consent explanations and request to be in the study. Each questionnaire had a clinic code number for confidentiality purposes in case of any referral to mental health care providers in the hospital for those screened positive for depression and AUD or any other incapacitating mental disorder.

The study involved administration of one researcher-designed questionnaire and three assessment tools which was done as the next step after receiving consent. After the respondents successfully filled in the questionnaire, they were required to hand them back to the researcher. The researcher read exactly how the questions appeared in the questionnaire to those who had reading difficulties and helped in writing for those who had writing difficulties. The responses were recorded as answered. Any queries by the respondent were answered appropriately.

3.8 Data Collection Instruments

3.8.1 Socio-demographic Questionnaire

One of the data collecting instruments was a socio-demographic questionnaire prepared by a researcher. The tool was used to determine the demographic information of the respondents, such as their age, gender, and so on.

3.8.2 Adherence Questionnaire

CASE Adherence Index was used for data collection. The tool was used to establish difficulty in taking ART medication on time, frequency of missed ART doses and time since most recent missed ART dose.

The New York Academy of Medicine's (NYAM) Center for Adherence Support Evaluation (CASE Adherence) created the tool (CASE). Participants in a longitudinal, prospective cross-site study of 12 adherence programs across the United States were compared to a conventional three-day self-reported adherence test using a simple composite measure of self-reported antiretroviral treatment (ART) adherence. Over the course of a year, the CASE Adherence Index, which consists of three unique adherence questions designed for the cross-site study, as well as a three-day adherence self-report, was administered through interviews every three months. In cross-sectional analyses, data from the three cross-site adherence questions were compared to three-day self-report data and HIV RNA and CD4 outcomes, both separately and in combination. The CASE Adherence Index had a high correlation with the with the three-day self-reported adherence data (Graham et al., 2008).

The CASE Index consists of three adherence questions which are rated on a Likert scale. The questions address three different aspects of ART adherence: difficulty taking ART medication on time, frequency of missed ART doses and time since most recent missed ART dose. The tool

is said to have a high degree of sensitivity and specificity with the Adult AIDS. Clinical Trials Adult AIDS Clinical Trials Group (AACTG) 3-day self-report concurrent validity and is a better predictor of HIV RNA changes over time than 3-day self-report

Scores;

- >10 = good adherence
- ≤10 = poor adherence

A higher composite score signifies better adherence (Kogo, 2018).

3.8.3 The AUDIT (Alcohol Use Disorder Identification Test)

AUDIT (Alcohol Use Disorder Identification Test) is a 10-question tool developed by the WHO. It helps to identify people at the risk of having alcohol use problems enough to be disordered. This involves harmful use, hazardous use or dependence (Babor et al, 2014). The responses given by the respondents for questions 1-10 are scored between 1 to 40 points and are then added up to determine if the individual has alcohol use disorder. Scores are categorized into groups where 0 represents a non –drinker, less than 8 scores a non-problem drinker, 8 or more a harmful drinker, 13 or more for women and 15 or more for men represents a likely dependent drinker. The items check on the frequency of one's drinking, quantity of drinking, frequency of heavy drinking, impaired control over drinking, increased salience over drinking, morning drinking, guilt after drinking, blackouts, alcohol related injuries and other concerns about drinking.

Table 2: ***AUDIT interpretation***

SCORE	DEGREE OF PROBLEMS RELATED TO DRUG ABUSE
0-7	Low Risk
8-15	Risky and or Hazardous Level
16-19	High Risk or Harmful Level
20 OR ABOVE	High Risk or Dependent

Since 1989, the tool has been updated twice: 1992 and 2002 to not only continue to identify the risky alcohol behaviors but to also serve as an internationally recognised assessment tool to help identify alcohol dependence and abuse. AUDIT is rated 92% effective in detecting hazardous and harmful drinking across all ethnic and gender groups (Babor et al, 2014).

The tool was designed to be used internationally and was validated in a study using parents from six countries; Norway, Australia, Kenya, Bulgana, Mexico and the U.S. It was administered to 1888 participants to identify the questions that most accurately distinguish low versus high-risk drinkers as well as alcohol dependence. AUDIT maintains reliabilities between 0.79 and 0.81 (Babor et al, 2014; (Kiunyu, 2015).

3.8.4 Beck's Depression Inventory

It is a 21- item scale that measures the symptoms of depression. It involves a measure on a 4-point scale ranging from 0 to 3 on the severity of each item. The maximum score is 63. It is designed for individuals above 13 years of age.

Table 3: ***Beck's Depression Inventory interpretation***

SCORE	DEPRESSION SEVERITY
0-13	Minimal Depression
14-19	Mild depression
20-28	Moderate depression
29-63	Severe Depression

The tool was named after Aaron Beck, an expert and initiator of cognitive therapy who designed the scale. It is used to measure the presence and severity of depressive symptoms consistent with the criteria of DSM V. The BDI helps to assess the intensity of depression in both adults and adolescents aged 23 and older. It is not meant to serve as an instrument of diagnosis but it is useful in research and for evaluation of the effectiveness of depression therapies and treatments.

The test results can be accurate or not if the test taker decides to manipulate by giving incorrect answers. Originally, the test was developed to detect and asses changes and monitor the same in depressive symptoms among people in a mental health care setting. But also can detect depressive symptoms in a primary health care setting. It takes one 5 to 10 minutes to complete (Polgar, 2011). The tool is designed to be used by professionals though it can also be self-administered.

The BDI was developed in 1961, adapted in 1969 and copy-righted in 1979. A second version of the inventory was developed to reflect Revisions in the fourth edition text revision of the Diagnostic and statistical manual of mental disorder (DSM – IV TR) (Polgar 2011)

The long form of BDI is composed of 21 questions or items each with four possible responses. Each response is assigned a score ranging from zero to three, indicating the severity of the symptoms (Polgar 2011). Individual questions of the BDI assess mood, pessimism, sense of failure, self-dissatisfaction, guilt, punishment, self –dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image, work difficulties, insomnia, fatigue, appetite, weight loss, bodily preoccupation, loss of libido.

Items 1 to 13 assess symptoms that are psychological in nature while 14 to 21 assess more physical symptoms. A shorter item of BDI is composed of seven questions and is designed for administration by primary care providers. Beck's Depression Inventory is effective in assessing and evaluating the severity of depression in people since it covers both the emotional and physiological aspects of depression (Kibera, 2015; Ndetei et al., 2009).

3.9 Quality Assurance Procedures

To ensure that quality and integrity of the research was upheld, reliable and valid data collection tools were administered i.e., Beck's Depression Inventory, AUDIT screening tool, CASE Adherence Index and a Self –developed socio-demographic questionnaire after a thorough examination of previous studies that have had a similar agenda and had used self-built tools to measure similar constructs as this research locally, regionally and globally. There also was a continuous review of the tools

3.10 Variables

i. Independent /predictor/ exposure variable: HIV status
ii. Dependent/ outcome variables: Adherence to ART, Alcohol Use Disorder and Depression
iii. Confounding variables: Socio-demographic data

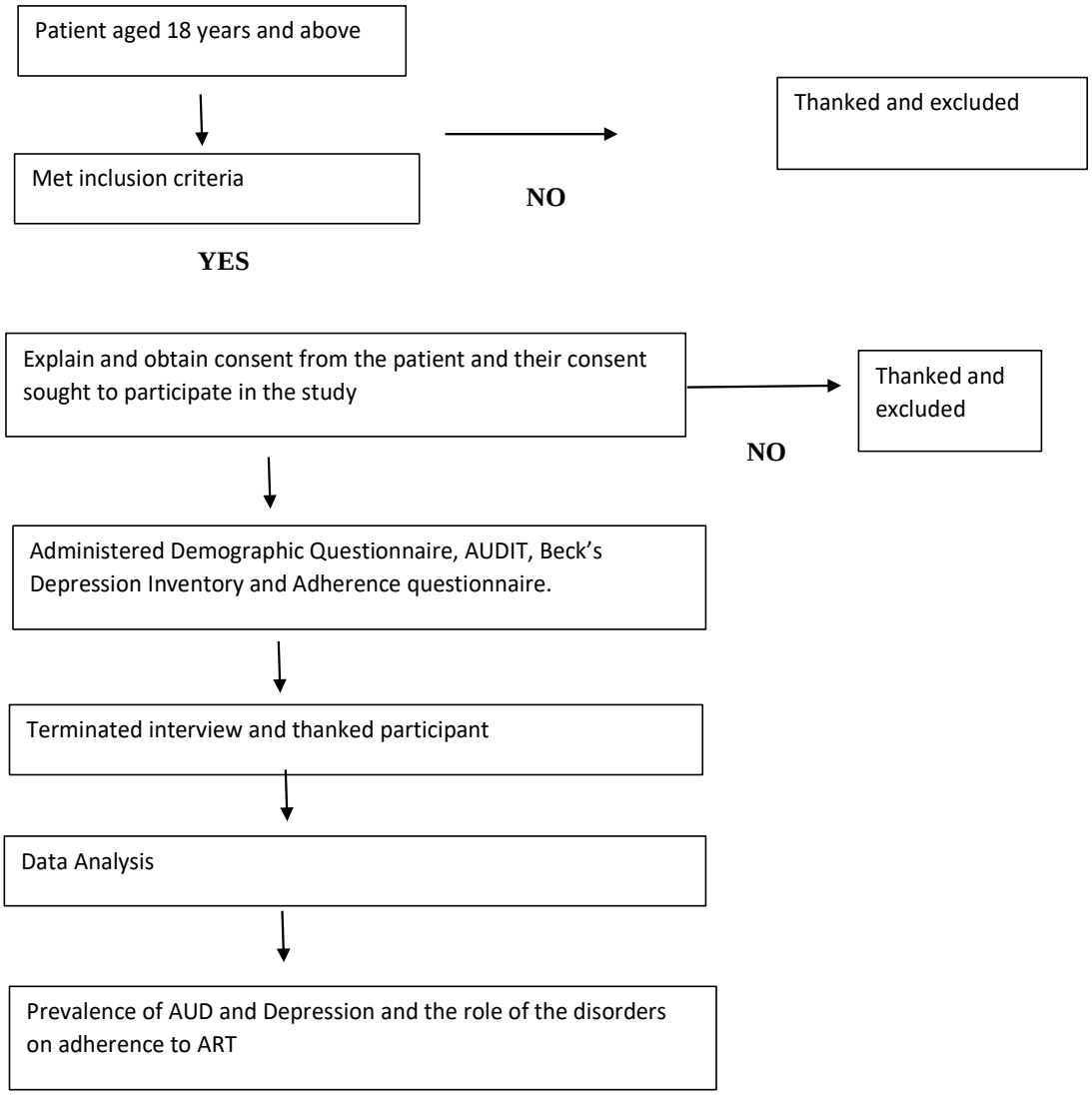
iv. Moderating variable: Receiving HIV care and support.

3.11 Data Management and Analysis

Data collected was stored in a separate lockable cabinet where only the researcher could access it. Statistical analysis was used to assess the associations between AUD, depression, ART adherence and socio-demographic variables set at p-value <0.05. The data collected was analyzed using Statistical Package for Social Sciences version 23 applying descriptive statistics and logistic regression analysis. Results were presented in figures, tables and narratives. All tests were two-sided.

3.12 Flow Chart

Figure 2: ***Flow Chart for the Data Collection Process***



3.13 Ethical Consideration

Approval from Busia Referral County Hospital, University of Nairobi Ethics and Research Committee, Ministry of Health Busia County and consent form the respondents were obtained before beginning the research. Those who agreed were assured of confidentiality and anonymity because names were recorded using code word.

The research involved human subjects; HIV/AIDS positive patients, however, there were no physical risks anticipated or received. The ethical issues considered were as follows.

Recruitment Procedure: All HIV/AIDS positive patients who met the eligibility criteria had an equal chance to participate in the study. Involvement in the study was voluntary hence decline to be in the study was not tied down to any underlying consequences.

Informed Consent: All eligible respondents were provided with informed consent which had a clear indication of the purpose of the study, data collection process, voluntary participation information, potential risks and benefits of participation in the study, issues of confidentiality and anonymity, contacts for use in case of any questions related to the study.

Benefits: Participation in the study provided one with an opportunity to be screened for depression, alcohol use disorders and to have an understanding of the factors that affected their adherence to medication. Those with scores that prompted if not immediate intervention were referred for treatment and management for a better understanding of the condition. There was also the pride of being part of a team that strode to help improve mental health care to benefit the society.

Risks: The participants had to respond to personal questions about their lives. The questions were presumed to evoke some emotions and the results also would point towards an individual needing mental health care.

Time: Being involved in the entire activity of consenting, completing the questionnaires and screening tests took approximately 30 minutes for each participant.

Confidentiality and privacy: Code words and serial numbers were used to ensure the anonymity of the participants. All paperwork containing information of the respondents were kept in a lock and key cabinet which only the researcher could access.

Results:

Anonymous data was shared with the University of Nairobi and Busia County Referral Hospital.

3.14 Limitation of Study

The study was not able to access other psychological disorders apart from depression and alcohol use disorder. The study applied cross-sectional study design, hence, information collected was based on specific time analysis and not on over a period of time as in longitudinal study design which would have helped provide better representative insight to the problem.

CHAPTER FOUR: RESULTS

4.0 Introduction

The data collected was analyzed in this chapter. The results were represented on the study objectives: To determine the socio-demographic characteristics of the participants and the relationship these factors have on depression, AUD and adherence to ART, to evaluate the prevalence of depression and AUD among them as well as to find out the relationship the latter two variables have with adherence to ART among adult PLWHIVA attending Comprehensive Care Centre in Busia County Referral Hospital. This was done using univariate analyses to provide a description of the characteristics of the study participants. Bivariate analyses as well as multivariate analyses were conducted to identify the nature of the relationships between the dependent and independent variables

4.1 Response Rate

There were three hundred and forty-four respondents out of the targeted three hundred and forty-five. One participant opted out of completing the questionnaire and was not included in the final analysis. Hence, the response rate being 99.7% (344) out of the 345 targeted respondents.

4.2 Social Demographic Characteristics of the Study Participants

The characteristics of the participants are summarized as in table 4 below. This is the frequencies and percentages with which the respondents were distributed socio demographically. These socio-demographic factors could serve as risks to depression, AUD and adherence difficulties among PLWHIVA at BCRH.

Table 4: ***Socio-demographic characteristics***

	CATEGORY	n	VALID %	CATEGORY	n	VALID %
Gender	**Male**	**117**	**34.0**	**Living Area**	**Urban Area (in town)**	**261**	**75.9**
	Female	**227**	**66.0**		**Rural Area (Out of town)**	**83**	**24.1**
Age	**18-30**	**37**	**10.8**				
	31-40	**84**	**24.4**				
	41-50	**113**	**32.8**				
	51 and above	**110**	**32.0**	**Who you live with**	**Alone**	**39**	**11.3**
					With parents	**18**	**5.2**
Religion	**Catholic**	**113**	**32.8**		**With siblings**	**5**	**1.5**
	Protestant	**81**	**23.5**		**With Relationship Partner**	**12**	**3.5**
	Muslim	**17**	**4.9**		**With friend or family**	**270**	**78.5**
	Other Christians	**127**	**37.0**				
	None	**3**	**0.9**				
	Other	**3**	**0.9**				
Relationship status	**Single**	**13**	**3.8**	**Employment Status**	**Self- employment**	**199**	**57.8**
	In a relationship	**21**	**6.1**		**Formal employment (Full time)**	**33**	**9.6**
	Cohabiting	**5**	**1.5**		**Formal Employment (Part time)**	**13**	**3.8**
	Married	**170**	**49.4**		**Unemployed**	**85**	**24.8**
	Divorced	**3**	**0.9**		**Student**	**7**	**2.0**
	Separated	**40**	**11.6**		**Retired**	**7**	**2.0**
	Widowed	**92**	**26.7**				
Income Bracket	**less than1000**	**94**	**27.3**				
	1001-10000	**206**	**59.9**				
	10001-20000	**33**	**9.6**				
	20001-30000	**9**	**2.6**				
	30001-40000	**2**	**0.6**				

In the distribution of participants according to gender, the results showed there were more females than males: 34% (117) were male and 66% (227) of participants were female. In the distribution of participants according to age groups, the results showed that a great number of the participants were in the age category of 41 to 50 (113) which represented 32.8% of the respondents followed by 51 and above (110) representing 32% of the respondents, 31-40 (84) representing 24.4% of participants and a minimum number of the respondents was at the age group of 18-30(37) representing 10.8%. Hence, the mean age was between 41-50 years; so was the median and mode.

A considerable number of the respondents were other Christians (127) representing 37.0% of the respondents. Those who were Catholics followed at a close percentage of 32.8% (113). Protestants represented 23.7% (81) of the population. Those who were Muslims, having no religion, and those belonging to other specific religions such as pagans represented 4.9% (17), 0.9% (3), and 0.9% (3) of the participants respectively.

On marital status, the study sought to establish the distribution of participants as at the time of participating in the study where many participants were married representing 49.4% (170) of the respondents. A considerable number of the respondents were widowed represented 26.7% (92). This was followed by those who were separated at 11.6% (40) of the respondents. The least number of the respondents were either in a relationship, single, divorced or cohabiting representing 6.1% (21), 3.8% (13), 3(0.9%) and 1.5% (5) of the respondents.

The Distribution of participants according to the area where they were living showed the highest percentage of the respondents living in the urban area (in town) at 75.9% (261) of the population. Those living in the rural area (out of town) represented 24.1% (83) of the respondents. On whom one was living with at the time of participation in the study, results indicated that only a few, 1.5% (5) were living with their siblings while 3.5% (12) and 5.2% (18) of the respondents lived with their relationship partner and parents respectively. A considerable number of the respondents lived alone, 11.3% (39). Most of the respondents lived with either their friends or family at 78.5% (270) of the respondents.

On the employment status of the respondents, 57.8% (199) of the respondents were self-employed. Twenty-four point four (24.8%) of the respondents were unemployed. Among those who were in formal employment, 9.6% (33) and 3.8% (13) were in full-time employment and part-

time employment respectively. The least percentage of the respondents were either students or retired, each at 2% (7) of the respondents.

Eighty-two-point four percent of the respondents, most of them, belonged to the income bracket of 1001-10000. This is 206 of the respondents. A considerable 27.3% (94) of the responses represented those who earned less than 1000 shillings per month. Thirteen-point two percent (13. 2%), 33 respondents were in the income bracket of 1000 01-20000. In the income bracket of 20001-30000, 9 respondents belonged here representing 2.6% of the respondents. At 30001-40000 income bracket, 0.6% (2) belonged here.

4.3 Respondents HIV Status Information

The socio-demographic characteristics of the participants are further summarized in table 5 below. This is the frequencies and percentages with which the respondents were distributed in response to their HIV-status information.

Table 5: ***HIV Status Information***

	CATEGORY	n	VALID %		CATEGORY	n	VALID %
Learning your diagnosis	Self-referral to VCT	165	48.0	Years Being on ART	Less than a year	10	2.9
	Referral by sexual Partner	14	4.1		More than a year	15	4.4
					More than two years	43	12.5
	Referral by medical Worker due to health problems	126	36.6		More than five years	76	21.8
					More than ten years	200	58.4
	Referral by family Member	18	5.2	Regimen	First Line	304	88.4
					Second Line	37	10.7
	Other (specify)	21	6.1		Third Line	3	0.9
Breaking status news	By the VCT counselor	210	61.0				
	By the medical worker after counseling	121	35.2				
	By the nurse after Counseling	3	0.9				
	Other (specify)	10	2.9				
Type of treatment offered	Counseling only	1	0.3				
	Out-patient treatment	49	14.2				
	In-patient treatment	27	7.8				
	ART Treatment	178	51.7				
	Referred to CCC	84	24.4				
	Other (Specify)	5	1.6				

About table 5 above, the study sought to determine information on the respondents' HIV status. Many respondents learned about their diagnosis through self-referral to the VCT representing 48% (165) of the respondents. This was followed closely by those who were referred by a medical worker due to health problems at 36.6% (126) of the respondents. The other respondents learnt about their diagnosis through referral by a family member, being referred by their sexual partner, or belonged to other ways such as being born with the status. These represented 5.2% (18), 4.1 % (14) and 6.1 % (21) of the respondents respectively.

A great percentage of the respondents had the news of their status broken to them by the VCT counselor at 61.0% (210). Thirty-five-point two percent (121) of the respondents had the news of their status broken to them by the medical worker after counseling. Some had the news broken to them by the nurse after counseling were 0.9 % (3). There were those who had then news broken to them via other means such as by the parents, family, spouse, friends, etc. This represented 2.9% (10) of the respondents.

As of the type of treatment offered either after or before learning one's diagnosis or getting the news of one's status, the highest percentage of the respondents, 51.7% (178) were placed on ART treatment after diagnosis. This was flowed by 24.4% (84) of the respondents being referred to the CCC for further care. Fourteen point four 14.2 % (49) of the respondents were on out-patient treatment while 7.8% (27) were on in-patient treatment. Only 0.3% (1) respondent was placed on only counseling after getting to know their status. Five (1.6%) respondents received or were receiving other types of treatment when they got to know of their status.

On the distribution of the respondents' years being on ART, a significant number of the respondents were on ART for more than ten years representing 58.4% (200) of the respondents. A considerable number of respondents were on ART for more than five years at 21.8% (75). Twelve-point five (12.5%), 43 respondents were on ART for more than two years. For more than a year, 4.4% (15) of the respondents belonged here. Finally, 2.9% (10) of the respondents were on ART for less than a year.

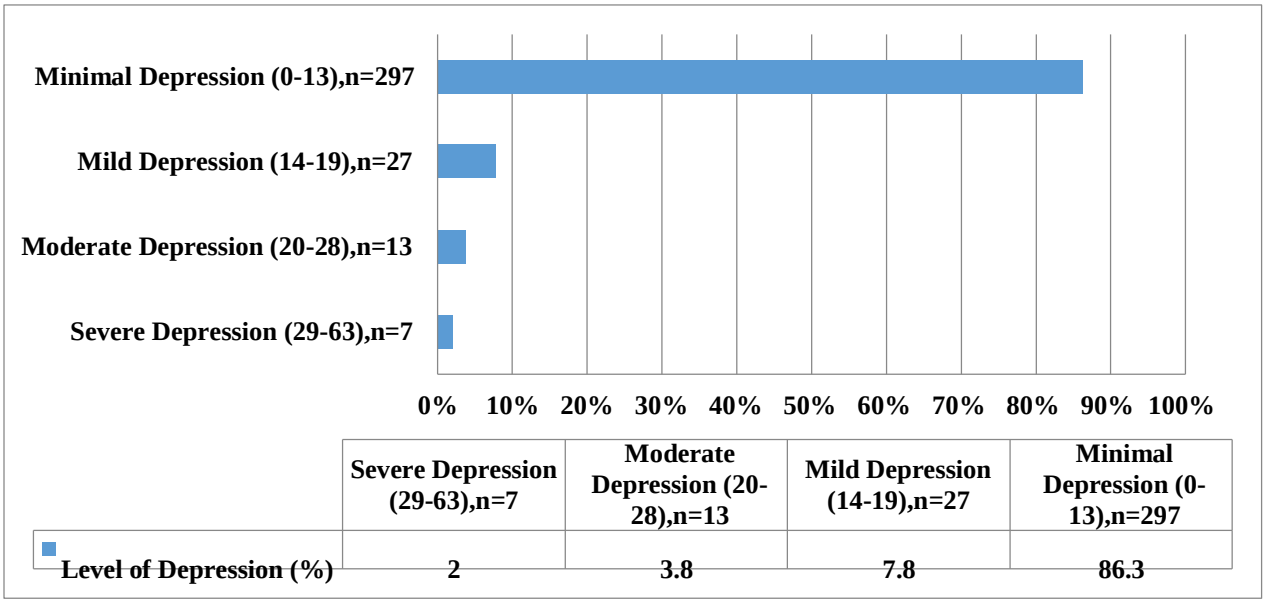
On the regimen the respondents were on, most respondents were on first-line 88.4 % (304). Those on second-line were 10.7% (37) while there were 3 (0.9%) respondents on third-line.

4.4 Prevalence of Depression

To determine the prevalence rate of depression, Beck's Depression Inventory was used and represented in figure 4.

Figure 3: ***Beck's Depression Inventory scores***

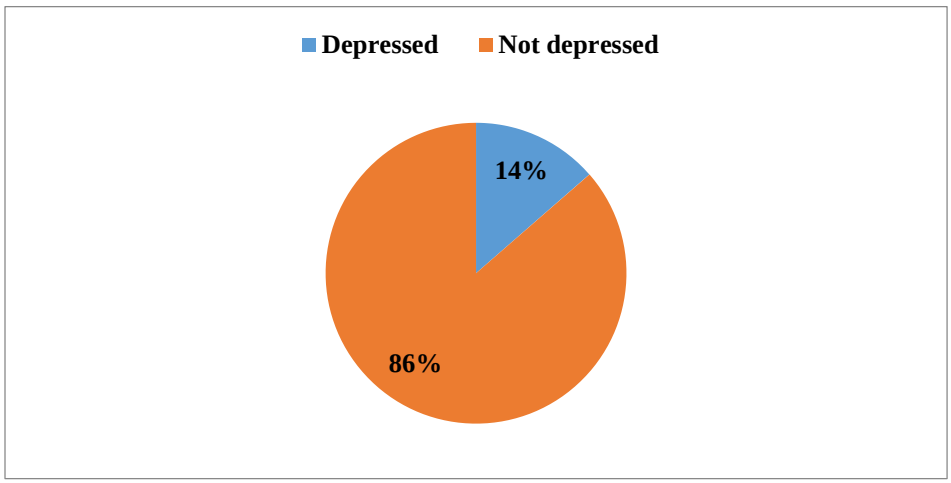
The figure below represents a categorical representation of the respondents scores of depression.



The distribution of the rates was as shown in figure 3 above where 86.3% (297) of the respondents had minimal depression, 7.8% (27) had mild depression, 3.8 % (13) had moderate depression and 2% (7) had severe depression.

Figure 4: ***Prevalence of Depression***

The prevalence of Depression is further represented in the figure below in a dichotomized way.



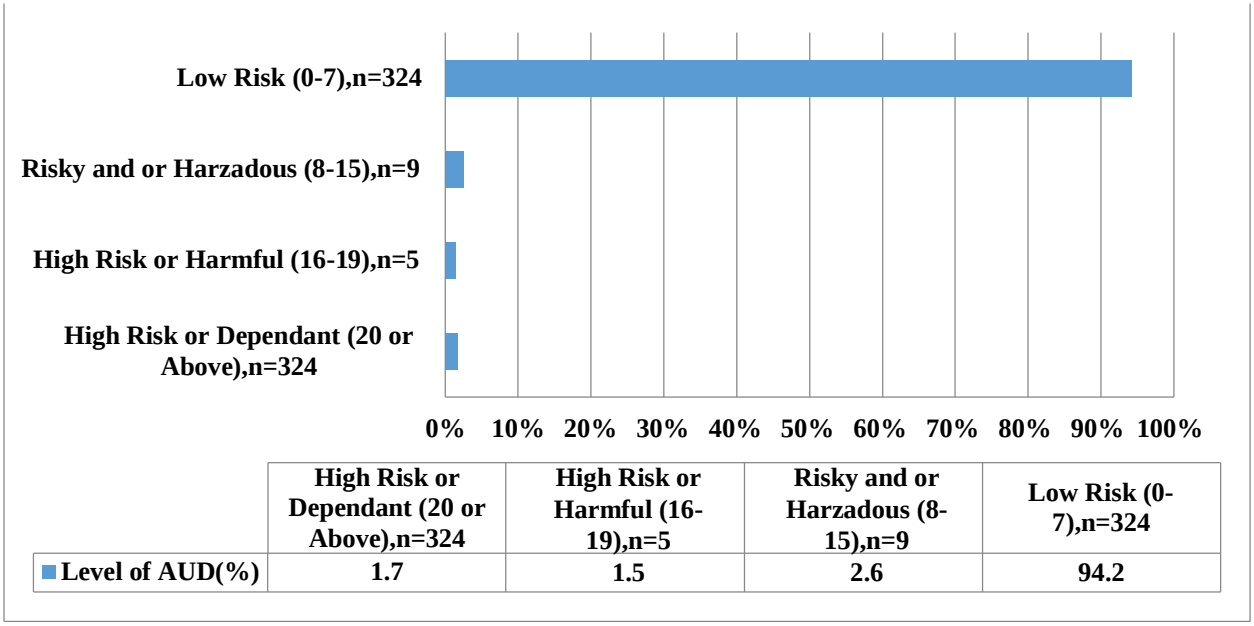
The figure 4 above showed that 13.7% (47) of the respondents were considered depressed and 86.3% (297) were not depressed.

4.5 Prevalence of Alcohol Use Disorder

To determine the rate of prevalence of AUD, the AUDIT tool was used and shown in figure 5 below.

Figure 5: ***Alcohol Use Disorder Inventory Scores***

The figure below represents a categorical representation of the respondents scores of AUD.

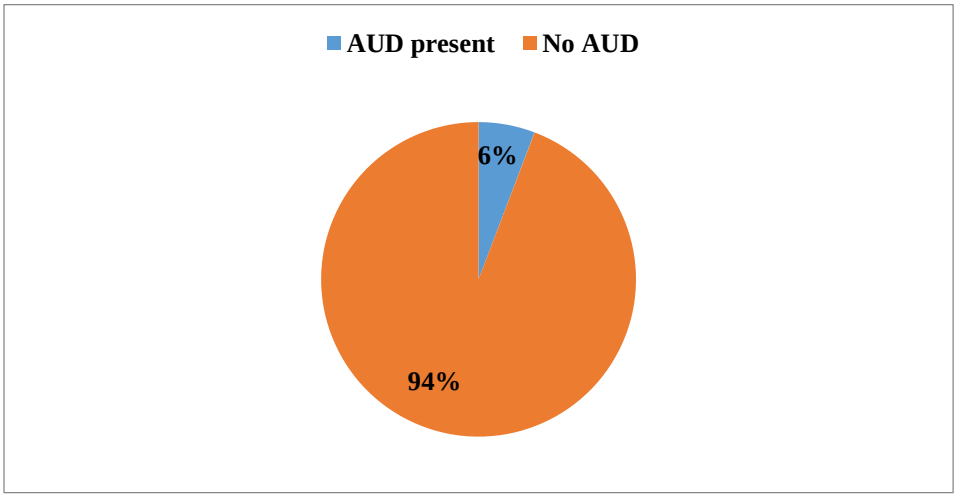


	High Risk or Dependant (20 or Above),n=324	High Risk or Harmful (16-19),n=5	Risky and or Harzadous (8-15),n=9	Low Risk (0-7),n=324
Level of AUD(%)	1.7	1.5	2.6	94.2

Those who were at low risk were 94.2% (324), 2.6% (9) were at risky or hazardous level 1.5% (5) were at high risk or harmful level and 1.7% (6) were at high risk or dependent.

Figure 6: ***Prevalence of AUD***

The prevalence of AUD is further represented in the figure below in a dichotomized way.



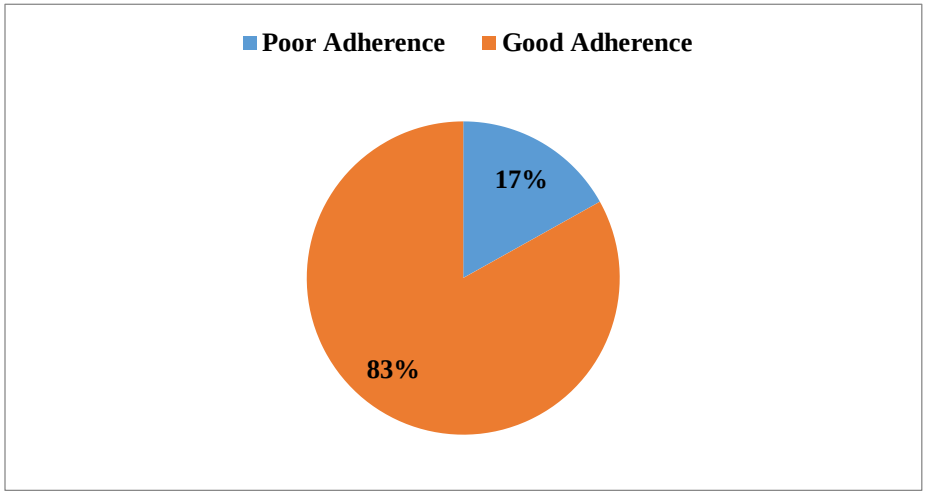
The figure 6 above showed that 5.8% (20) of the respondents were considered to have AUD while 94.2% (324) had no AUD.

4.6 Adherence Rate

To determine the rate of Adherence to ART among the respondents, the distribution of the rates is as shown in figure 7.

Figure 7: Adherence Rate

The figure below represents a dichotomized representation of the rate of adherence to ART of the respondents.



The figure 7 above shows that those who had good adherence represented 83.1 % (286) of the respondents while those with poor adherence 16.9% (58) of the respondents.

4.7 Association of Depression, AUD and Adherence to ART in relation to Socio-demographic Characteristics

4.7.1 Bivariate Analysis between depression and Socio-Demographic Characteristics

Table 6: ***Bivariate Analysis between depression and Socio-Demographic Characteristics***

		Have Depression	No Depression	OR	95%CI	P
Gender	Male	111(32.3%)	6(1.7%)	0.245	0.101-0.596	0.002**
	Female	186(54.1%)	41(11.9%)	1.000		
Age	18-30	3(0.9%)	34(9.9%)	0.794	0.209-3.017	0.735
	31-40	19(5.5%)	65(18.9%)	2.631	1.175-5.889	0.019**
	41-50	14(4.1%)	99(28.8%)	1.273	0.551-2.940	0.572
	51 and above	11(3.2%)	99(28.8%)	1.000		
Religion	Catholic	14(4.1%)	99(28.9%)	0.714	0.344-1.481	0.365
	Protestant	10(2.9%)	71(20.8%)	0.711	0.316-1.599	0.410
	Muslim	2(0.6%)	15(4.4%)	0.673	0.143-3.164	0.616
	Other Christians	21(6.1%)	106(31.0%)	1.000		
Relationship Status	Divorced	1(0.3%)	12 (3.5%)	2.786	0.236-32.834	0.416
	Single	1(0.3%)	3(0.9%)	0.464	0.056-3.860	0.478
	In a relationship	3(0.9%)	18(5.2%)	0.929	0. 241-3.575	0.914
	Married	21(6.1%)	149(43.3%)	0.785	0.379-1.629	0.516
	Separated	7(2.0%)	33(9.6%)	1.182	0.437-3.195	0.742
	Widowed	14(4.1%)	78(22.7%)	1.000		
Living Area	Urban Area (in town)	35(10.2%)	226(65.9%)	0.903	0.445-1.834	0.779
	Rural Area (out of town)	12(3.5%)	70(20.4%)	1.000		
Who you live with	Alone	2(0.6%)	37(10.8%)	0.317	0.074-1.371	0.124
	With parents	2 (0.6%)	16(4.7%)	0.734	0.162-3.318	0.688
	With siblings	1(0.3%)	4(1. 2%)	1.468	0.160-13.482	0.734
	With relationship partner	3(0.9%)	9(2.6%)	1.957	0.507-7.550	0.330
	With friend or family	39(11.4%)	229(67.0%)	1.000		
Employment Status	Self-employment	33(9.6%)	166(48.3%)	1.679	0.765-3.682	0.196
	Formal Employment (Full Time)	1(0.3%)	32(9.3%)	0.264	0.032-2.170	0.215
	Formal Employment (Part Time)	3(0.9%)	10(2.9%)	2.533	0.586-10.947	0.213
	Unemployed	9(2.6%)	76(22.1%)	1.000		
Income	1000-10000	32(12.8%)	174(69.6%)	1.839	0.529-6.389	0.338
	10001-20000	3(1.2%)	30(12.0%)	1.000		
Learning your diagnosis	Self-referral to VCT	24(7.0%)	141(41.0%)	1.021	0.279-3.735	0.975
	Referral by sexual partner	1(0.3%)	13(3.8%)	0.462	0.043-4.952	0.523
	Referral by medical worker due to health problems	16(4.7%)	110(32.0%)	0.873	0. 231-3.300	0.841
	Referral by family member	3(0.9%)	15(4.4%)	1. 200	0. 210-6.842	0.837
	Other	3(0.9%)	18(5. 2%)	1.000		
Breaking Status News	By the VCT counselor	29(8.5%)	181(52.9%)	0.980	0.514-1.869	0.952
	By the medical worker after counselling	17(5.0%)	104(30.4%)	1.000		
Type of treatment offered	Out-patient treatment	8(2.3%)	41(12.0%)	1.066	0.408-2.786	0.897
	In-patient treatment	2(0.6%)	25(7.3%)	0.437	0.092-2.073	0.297

	ART Treatment	**22(6.5%)**	**156(45.7%)**	**0.770**	**0.367-1.616**	**0.490**
	Referred to CCC	**13(3.8%)**	**71(20.8%)**	**1.000**		
Years Being on ART	**less than a year**	**4 (1.2%)**	**6(1.7%)**	**6.351**	**1.645-24.512**	**0.007****
	More than a year	**3(0.9%)**	**12(3.5%)**	**2.382**	**0.617-9.192**	**0.208**
	More than two years	**9(2.6%)**	**34(9.9%)**	**2.522**	**1.053-6.041**	**0.038****
	More than five years	**11(3.2%)**	**64(18.7%)**	**1.637**	**0.739-3.627**	**0. 224**
	More than ten years	**19(5.5%)**	**181(52.8%)**	**1.000**		
Regimen	**First Line**	**41(12.0%)**	**263(77.1%)**	**0.312**	**0.028-3.517**	**0.346**
	Second line	**5(1.5%)**	**32(9.4%)**	**0.313**	**0.024-4.119**	**0.377**
	Third Line	**1(0.3%)**	**2(0.6%)**	**1.000**		

Table 6 shows a bivariate analysis between depression and socio-demographic characteristics among the participants. Results showed the odds of having depression among males was 75.5% lower than those among females (OR=0.245, 95% CI 0.101-0.596, *p*=0.002). Additionally, 31–40-year-olds were more 2.631 more likely to have depression than those among 51 and above years (OR=2.631, 95% CI 1.175-5.889, *p*=0.019). Finally, the those who had been on ART treatment for less than a year were 6.351 times more likely to have depression than those who had been on it for more than ten years (OR=6.351, 95% CI 1.645- 24.512, *p*=0.007) while the likelihood of having depression when one has been on ART treatment for more than two years was 2.522 times compared to being on treatment for more than ten years (OR=2.522, 95% CI 1.053-6.041, *p*=0.038)

4.7.2Bivariate Analysis between AUD and Socio-Demographic Characteristics

Table 7: ***Bivariate Analysis between AUD and Socio-Demographic Characteristics***

		Have AUD	**No AUD**	**OR**	**95%CI**	**P**
Gender	**Male**	**13(3.8%)**	**104(30.2%)**	**3.929**	**1.522-10.138**	**0.005****
	Female	**7(2.0%)**	**220(64.0%)**	**1.000**		
Age	**18-30**	**4(1.2%)**	**33(9.6%)**	**4.323**	**0.920-20.307**	**0.064**
	31-40	**4(1.2%)**	**80(23.3%)**	**1.783**	**0.388-8.192**	**0.457**
	41-50	**9(2.6%)**	**104(30.2%)**	**3.087**	**0.813-1.720**	**0.098**
	51 and above	**3(0.9%)**	**107(31.1%)**	**1.000**		
Religion	**Catholic**	**11(3.2%)**	**102(29.8%)**	**2.631**	**0.885-7.821**	**0.082**
	Protestant	**3(0.9%)**	**78(22.8%)**	**0.938**	**0.218-4.038**	**0.932**
	Other Christians	**5(1.5%)**	**122(35.7%)**	**1.000**		

Relationship Status	**Single**	**2(0.6%)**	**11(3.2%)**	**8.182**	**1.045-64.035**	**0.045****
	In a relationship	**3(0.9%)**	**18(5.2%)**	**7.500**	**1.168-48.148**	**0.034****
	Cohabiting	**1(0.3%)**	**4(1.2%)**	**11. 250**	**0.835-151.620**	**0.068**
	Married	**10(2.9%)**	**160(46.5%)**	**2.812**	**0.603-13.119**	**0.188**
	Separated	**2(0.6%)**	**38(11.0%)**	**2.368**	**0.322-17.436**	**0.397**
	Widowed	**2 (0.6%)**	**90(26.2%)**	**1.000**		
Living Area	**Urban Area (in town)**	**14(4.1%)**	**247(72.0%)**	**0.718**	**0. 267-1.933**	**0.512**
	Rural Area (out of town)	**6(1.7%)**	**76(22.2%)**	**1.000**		
Who you live with	**Alone**	**7(2.0%)**	**32(9.4%)**	**5.111**	**1.850-14.122**	**0.002****
	With parents	**1(0.3%)**	**17(5.0%)**	**1.374**	**0.167-11. 281**	**0.767**
	With relationship partner	**1(0.3%)**	**11(3.2%)**	**2.124**	**0. 251-17.948**	**0.489**
	With friend or family	**11(3.2%)**	**257(75.1%)**	**1.000**		
Employment Status	**Self-employment**	**12(3.5%)**	**187(54.4%)**	**1.754**	**0.482-6.382**	**0.394**
	Formal Employment (Full Time)	**2(0.6%)**	**31(9.0%)**	**1.763**	**0.281-11.063**	**0.545**
	Formal Employment (Part Time)	**2(0.6%)**	**11(3.2%)**	**4.970**	**0.746-33.116**	**0.098**
	Unemployed	**3(0.9%)**	**82(23.8%)**	**1.000**		
Income	**1000-10000**	**12(4.8%)**	**194(77.6%)**	**0.448**	**0.135-1.484**	**0.189**
	10001-20000	**4(1.6%)**	**29(11.6%)**	**1.000**		
Learning your Diagnosis	**Self-referral to VCT**	**10(2.9%)**	**155(45.1%)**	**0.952**	**0.364-2.485**	**0.919**
	Referral by medical worker due to health Problems	**8(2.3%)**	**118(34.3%)**	**1.000**		
Breaking Status News	**By the VCT counselor**	**12(3.5%)**	**198(57.9%)**	**0.987**	**0.378-2.578**	**0.979**
	By the medical worker after counselling	**7(2.0%)**	**114(33.3%)**	**1.000**		
Type of treatment offered	**Out-patient treatment**	**6(1.8%)**	**43(12.6%)**	**1.814**	**0.551-5.970**	**0.327**
	In-patient treatment	**2(0.6%)**	**25(7.3%)**	**1.040**	**0.197-5.483**	**0.963**
	ART Treatment	**5(1.5%)**	**173(50.7%)**	**0.376**	**0.111-1.268**	**0.115**
	Referred to CCC	**6(1.8%)**	**78(22.9%)**	**1.000**		
Years Being on ART	**less than a year**	**1(0.3%)**	**9(2.6%)**	**5.444**	**0.551-53.812**	**0.147**
	More than a year	**4(1.2%)**	**11(3.2%)**	**17.818**	**3.924-80.911**	**0.001****
	More than two years	**4(1.2%)**	**39(11.4%)**	**5.026**	**1.205-20.956**	**0.027****
	More than five years	**6(1.7%)**	**69(20.1%)**	**4.261**	**1.168-15.550**	**0.028****
	More than ten years	**4(1.2%)**	**196(57.1%)**	**1.000**		

Table 7 shows a bivariate analysis between AUD and socio-demographic characteristics. Results showed that males were 3.929 times more likely to develop AUD than females (OR= 3.929, 95% CI 1.522-10.138, *p*=0.005). Further those who were single were 8.192 times more likely to have AUD than those who were widowed (OR=8.182, 95% CI 1.045-64.035, *p*=0.045). Additionally, the likelihood of having AUD among participants who were in a relationship was 7.500 times higher than being widowed (OR=7.500, 95% CI 1.168-48.148, *p*=0.034). Also, the likelihood of developing AUD while living alone was 5.111 times higher than living with friends or family (OR=5.111, 95% CI 1.850-14.122, *p*=0.002). Finally, compared to being on ART

treatment for more than ten years, the likelihood of having AUD was 17.818, 5.026 and 4.261 times higher when one has been on ART treatment for more than a year, than two years and more than five years respectively (OR=17.818, 95% CI 3.924-80.911, *p*=0.000); (OR=5.026, 95% CI 1.205-20.956, *p*=0.027) ;(OR=4.261, 95% CI 1.168-15.550, *p*=0.028)

4.7.3 Bivariate Analysis between Adherence and Socio-demographic Characteristics

Table 8: ***Bivariate Analysis between Adherence and Socio-demographic Characteristics***

		Good Adherence	Poor Adherence	OR	95 %CI	P
Gender	**Male**	**96(27.9%)**	**21(6.1%)**	**0.890**	**0.494-1.604**	**0.699**
	Female	**190(55.2%)**	**37(10.8%)**	**1.000**		
Age	**18-30**	**30(8.7%)**	**7(2.0%)**	**0.476**	**0.170-1.336**	**0.159**
	31-40	**63(18.3%)**	**21(6.1%)**	**0.333**	**0.151-0.738**	**0.007****
	41-50	**94(27.3%)**	**19(5.5%)**	**0.550**	**0.248-1.217**	**0.140**
	51 and above	**99(28.8%)**	**11(3.2%)**	**1.000**		
Religion	**Catholic**	**99(28.9%)**	**14(4.1%)**	**1.733**	**0.852- 3.526**	**0.129**
	Protestant	**69(20.2%)**	**12(3.5%)**	**1.409**	**0.664-2.993**	**0.372**
	Muslim	**11(3. 2%)**	**6(1.8%)**	**0.449**	**0.152-1.332**	**0.149**
	Other Christians	**102(29.8%)**	**25(7.3%)**	**1.000**		
Relationship Status	**Single**	**10(2.9%)**	**3(0.9%)**	**0.702**	**0.173-2.841**	**0.620**
	In a relationship	**16(4.7%)**	**5(1.5%)**	**0.674**	**0.216-2.106**	**0.497**
	Married	**144(41.9%)**	**26(7.6%)**	**1.166**	**0.590-2.306**	**0.659**
	Separated	**32(9.3%)**	**8(2.3%)**	**0.842**	**0.328-2.164**	**0.721**
	Widowed	**76(22.1%)**	**16(4.7%)**	**1.000**		
Living Area	**Urban Area (in town)**	**217(63.3%)**	**44(12.8%)**	**0.929**	**0.473-1.826**	**0.831**
	Rural Area (out of town)	**69(20.1%)**	**13(3.8%)**	**1.000**		
Who You Live With	**Alone**	**27(7.9%)**	**12(3.5%)**	**0.395**	**0.185-0.843**	**0.016****
	With parents	**13(3.8%)**	**5(1.5%)**	**0.456**	**0.154-1.350**	**0.156**
	With relationship partner	**11(3.2%)**	**1(0.3%)**	**1.930**	**0. 242-15.363**	**0.535**
	With friend or family	**228(66.7%)**	**40(11.7%)**	**1.000**		
Employment Status	**Self-employment**	**166(48.3%)**	**33(9.6%)**	**0.827**	**0.404-1.692**	**0.603**
	Formal Employment (Full Time)	**26(7.6%)**	**7(2.0%)**	**0.611**	**0.217-1.717**	**0.350**
	Formal Employment (Part Time)	**11(3.2%)**	**2(0.6%)**	**0.904**	**0.178-4.594**	**0.903**
	Unemployed	**73(21.2%)**	**12(3.5%)**	**1.000**		
Income Bracket	**1000-10000**	**172(68.8%)**	**34(13.6%)**	**5.059**	**0.309-82.868**	**0. 256**
	10001-20000	**27(10.8%)**	**6(2.4%)**	**4.500**	**0.245-82.568**	**0.311**
	20001-30000	**7(2.8%)**	**2(0.8%)**	**3.500**	**0.145-84.694**	**0.441**
	30001-40000	**1(0.4%)**	**1(0.4%)**	**1.000**		
Learning your diagnosis	**Self-referral to VCT**	**135(39.2%)**	**30(8.7%)**	**1.800**	**0.645-5.022**	**0. 262**
	Referral by sexual partner	**10(2.9%)**	**4(1.2%)**	**1.000**	**0. 224-4.468**	**1.000**
	Referral by medical worker due to health problems	**110(32.0%)**	**16(4.7%)**	**2.750**	**0.932-8.116**	**0.067**
	Referral by family					

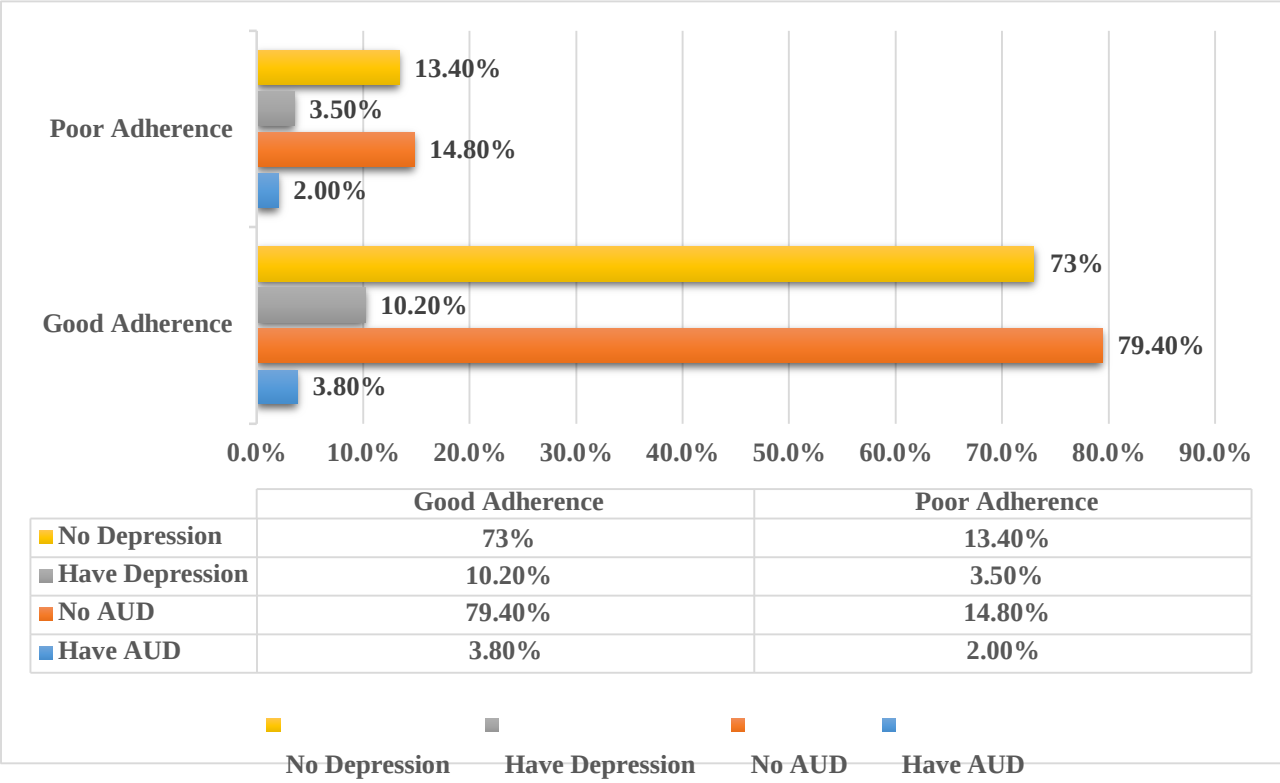
	member	16(4.7%)	2(0.6%)	3. 200	0.557-18.387	0.192
	Other	15(4.4%)	6(1.7%)	1.000		
Breaking	By the VCT counselor	173(50.6%)	37(10.8%)	1.559	0.303-8.028	0.596
Status	By the medical worker					
News	after counseling	104(30.4%	17(5.0%)	2.039	0.380-10.946	0.406
	By the nurse after					
	Counseling	2(0.6%)	1(0.3%)	0.667	0.037-11.936	0.783
	Other	6(1.8%)	2(0.6%)	1.000		
Type of	Out-patient treatment	34(10.0%)	15(4.4%)	0.378	0.160-0.894	0.027***
Treatment	In-patient treatment	23(6.7%)	4(1.2%)	0.958	0.281-3.263	0.946
offered	ART Treatment	152(44.6%)	26(7.6%)	0.974	0.465-2.041	0.945
	Referred to CCC	72(21.1%)	12(3.5%)	1.000		
Years	less than a year	8(2.3%)	2(0.6%)	0.706	0.143-3.487	0.669
Being	More than a year	11(3.2%)	4(1.2%)	0.485	0.145-1.625	0. 241
On ART	More than two years	36(10.5%)	7(2.0%)	0.908	0.370-2.227	0.832
	More than five years	61(17.8%)	14(4.1%)	0.769	0.382-1.546	0.461
	More than ten years	170(49.6%)	30(8.7%)	1.000		
Regimen	First Line	258(75.7%)	46(13.5%)	2.692	1.264-5.736	0.010***
	Second line	25(7.3%)	12(3.5%)	1.000		

Table 8 shows a bivariate analysis between adherence and socio-demographic characteristics among the participants. Results showed that the odds of having adherence to ART issues among 31–40-year-old was 66.7% lower than those among 51 and above years (OR=0.333, 95% CI 0.151-0.738, *p*=0.007) while the odds of having adherence to ART issues while living alone was 60.5% lower than living with friends or family (OR=0.395,95% CI 0.185-0.843, *p*=0.016). The odds of having adherence to ART issues when one's type of treatment offered was out patient was 62.2% lower than having been receiving treatment at the CCC after referral (OR=0.378, 95% CI 0.160-0.894, *p*=0.027). Finally, being on first line regimen made one have 2.692 higher likelihood to having adherence to ART issues than being on second line regimen (OR=2.692, 95% CI 1.264-5.736, *p*=0.010)

4.8 Association between Depression and AUD in relation with Adherence to ART

Figure 8: ***Univariate Analysis between Depression and AUD in Relation with Adherence to ART***

The figure below shows the frequencies and percentages at which depression and AUD were distributed among those with poor and good adherence to ART.



	Good Adherence	Poor Adherence
No Depression	73%	13.40%
Have Depression	10.20%	3.50%
No AUD	79.40%	14.80%
Have AUD	3.80%	2.00%

The figure 8 above shows that even though there were a handful of participants who had neither AUD (14.8%) nor depression (13.4%) among those with poor adherence, they were however fewer than those with good adherence i.e. No AUD (79.4%) and depression (73%). On the other hand, fewer participants with depression (3.5%) and AUD (2%) had poor adherence compared to those who had good adherence to ART i.e., have depression (10.2%) and have AUD (3.8%)

Table 9: ***Bivariate Analysis between AUD and Adherence to ART***

	Have AUD	No AU D	OR	95 %CI	P
Good Adherence	**13(3.8%)**	**273(79.4%)**	**1.000**		
Poor Adherence	**7(2.0%)**	**51(14.8%)**	**2.882**	**1.097-7.575**	**0.032****

According to Table 9 above, even though the prevalence of AUD was higher among those with good adherence (3.8%) compared to (2.0%) among those with poor adherence, the likelihood of having AUD when one had poor adherence was 2.882 times higher than with good adherence (OR=2.882, 95% CI 1.097-7.575, *p* =0.032)

Table 10: ***Bivariate Analysis between AUD and Depression***

	Have Depression	No Depression	OR	95 %CI	P
No AUD	**41(11.9%)**	**283(82.3%)**	**0.338**	**0.123-0.929**	**0.035****
Have AUD	**6(1.7%)**	**14(4.1%)**	**1.000**		

According to table 10 above, even though the prevalence of depression was higher among those with no AUD; (11.9%) in comparison to those with AUD (1.7%), the odds of developing depression when one had no AUD was 66.2% lower than those who had AUD (OR=0.338, 95% CI 0.123-0.929, *p* =0.035)

Table 11: ***Bivariate Analysis between Depression and Adherence to ART***

	Have Depression	No Depression	OR	95 %CI	P
Good Adherence	**35(10. 2%)**	**251(73%)**	**1.000**		

Poor Adherence	**12(3.5%)**	**46(13.4%)**	**1.871**	**0.904-3.871**	**0.091**

According to table 11 above, there was no significant relationship between having depression and adherence to ART (OR=1.871, 95% CI 0.904-3.871, *p* =0.091).

4.9 Multivariate logistic regression between Depression, AUD and Adherence to ART

All the socio-demographic factors that showed significant bivariate associations with depression, AUD and adherence to ART were included in multivariate logistic regression model where the strength of association was measured by odds ratios with 95% confidence intervals. Statistical significance was declared at P<0.05. The results shown in table 12 below only included the socio-demographic factors that added significantly to the prediction model of association.

Table 12: ***Multivariate logistic regression of Factors Associated with Depression, AUD and Adherence to ART***

			AOR	95 %CI	P
Depression					
	Gender	**Male**	**0.249**	**0.101-0.611**	**0.002**
		Female	**1.000**		
	Years Being	**Less than a year**	**5.859**	**1.466-23.420**	**0.012**
	On ART	**More than two years**	**2.722**	**1.112-6.660**	**0.028**
		More than ten years	**1.000**		
AUD					
	Gender	**Male**	**0.249**	**0.101-0.611**	**0.050**
		Female	**1.000**		
	Years Being	**More than a year**	**19.674**	**1.199-322.766**	**0.037**
	On ART	**More than ten years**	**1.000**		
Adherence					
	Regimen	**First Line**	**2.692**	**1.264-5.736**	**0.010**
		Second Line	**1.000**		

After adjusting for all significant variables at the bivariate level, being male had lower odds of one suffering depression by 75.1% than being female (AOR=0.249, 95% CI 0.101-0.611, *p*=0.002); Being on ART for less than a year had one 5.859 times more likely to suffer depression

as compared to being on ART for more than 10 years (AOR=5.859, 95% CI 1.466-23.420, *p*=0.012); Being on ART for more than two years had one 2.722 times more likely to suffer from depression than being in ART for more than 10 years (AOR=2.722, 95% CI 1.112-6.660, *p*=0.028). These factors were confounded by age of the respondents.

By being male, one had 75.1% lower odds of developing AUD than being female (AOR=0.249, 95% CI 0.101-0.611, *p*=0.050); Being on ART for more than a year had one being 19.674 more likely to develop AUD than being in ART for more than 10 years (AOR=19.674, 95% CI 1.199-322.766, *p*=0.037). These factors were confounded by the factors; one's relationship status and whom one lived with.

Finally, the effect of one's regimen adherence to ART was confounded by one's age, whom one lived with and the type of treatment one was being offered when they got to know of their HIV/AIDS diagnosis. Being in first line regimen made one to be 2.692 more likely to have difficulty in adherence to ART than being in second line regimen (AOR=2.692, 95% CI 1.264-5.736, *p*=0.010)

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.0 Introduction

The purpose of this study was to determine the prevalence of depression, alcohol use disorder and their association with ART adherence among adult patients attending Comprehensive Care Center Busia Referral County Hospital. This chapter is a constitution of the discussion of key findings with relation to literature reviewed from different views; Global, regional and local. This chapter composes of discussions and issues of future studies on the purpose of the study.

Research Question 1: What is the prevalence of depression and Alcohol Use Disorder among adult PLWHIVA attending Comprehensive Care Centre in Busia County Referral Hospital?

Research Question 2: What is the association of Depression and Alcohol Use Disorder with adherence to ART among adult PLWHIVA attending Comprehensive Care Centre in Busia County Referral Hospital?

5.1 Discussion

Socio-demographic Characteristics

The socio-demographic attributes of the participants showed that the mean age of the participants was 41-50 years. This was similar with research findings such as one done in Kitale County Referral Hospital that showed the participants' mean age as 42.12 (40-49 years) (Mwaura, 2018). A study on HIV-disclosure, social support and depression among HIV-infected African American women living in the rural Southeastern United States showed mean age to be 41.52 ± 9.47 years(Vyavaharkar et al., 2011). Contrary, 3 epi-centers in Vietman showed mean age of 35 years (Xuan Tran et al., 2014); Hawassa University Comprehensive Specialized hospital in Ethiopia 35–44 years (Duko, Toma, et al., 2019); Kangemi Health Centre CCC showed mean age

of 37.3 years (Nga'nga', 2014); Vredenburg Regional Hospital in South Africa showed the mean age to be 38 years (Moraes et al., 2017). These differences can be accrued to the differences in the settlement demography of the different study areas where rural communities are characterized by settlement of people who are old in their years hence will have a substantial number of individuals belonging in the older age group than in capital and urban community areas of a country (UNFPA, 2013)

There were more females than males infected with the virus representing 66% of the participants. This agrees with statistics from research carried out in Nairobi County at Kangemi Health Centre CCC among 245 adult HIV/AIDS patients where three-quarters (75.9%) of the patients were female. (Nga'nga', 2014). A multi-site study done in Nigeria found more participants were women 44% living with HIV/AIDS (Olley et al., 2017). In Kenya, men living with HIV are significantly less likely to be on treatment than women. The most recent statistics showed that only 58% of men accessed treatment compared to 68% of women. Additionally, as in many parts of SSA, women in Kenya face discrimination in terms of access to education, employment and healthcare. As a result men often dominate sexual relationships with women not always able to practice safe sex even when they know the risks (Avert, 2018). With the culture of polygamy being practiced greatly among the people living in the study area, these places women at great vulnerable positions.

Many respondents were other Christians at 37.0% and Catholics at 32.8% hence showing most participants had consideration for a super-natural being in their lives that serve as a spiritual/religious support system. The distribution of participants in the study showed many respondents being married at 49.4% and a considerable number being widowed at 26.7%. A study done in Uganda showed that compared to the HIV-negative patients, HIV-positive patients were

less likely to have never been married and were more likely to have been widowed (Akena et al., 2010). Additionally, most of the respondents lived with either their friends or family; 78.5% of them. Social support is a great cushion for effects of stressors. Some studies have shown that perceived social support is more important than actual support. This may involve perceived availability of support, sources of available support and satisfaction with available support (Vyavaharkar et al., 2011).

Most of the respondents, 75.9% of the participants lived in the urban area (in town) in the community. According to Kheswa (2017) transport costs, lack of adherence follow-ups and drug stock-outs are all well-established barriers to adherence (Bayew Tsega, 2015). A high percentage of the respondents were either self-employed or unemployed at 57.8% and 24.8% respectively. Additionally, a considerably high number of them either belonged to the income bracket of 1001-10000 i.e. 59.9% of the respondents or earned less than 1000 shillings per month i.e. 27.3% of the respondents. These findings were at per with Mwaura (2018) research that showed that in Kitale County Referral Hospital, many of the respondents were earning less than 5000 shillings per month and that 51% and 33% of them were either self-employed or unemployed respectively.

Findings by Vyavaharkar et al., (2011) showed that in rural South Eastern United States, the majority of the participants were unemployed, received some form of public assistance and had an annual household income of less than $10,000. Capital cities or large urban centers are very different in terms of opportunities and costs of settlements, and amenities than smaller urban centers. Individuals living in smaller urban centers that are farm land areas of a country thrive on self-employment and carrying out socio-economic activities geared mostly towards subsistence use (Satterthwaite et al., 2010)

HIV Information

Findings on HIV information were recorded on grounds that many respondents learnt of their diagnosis through self-referral at the VCT at 48% and were followed closely by those who were referred by a medical worker due to health problems at 36.6% of the respondents. On the type of treatment offered at the time of knowing one's status, 51.7% of the respondents were placed on ART treatment immediately after learning their diagnosis at the CCC while 24.4% of the respondents were referred to the CCC by the medical worker after knowing their status. This makes it clear that BCRH Ampath clinic has put in efforts in ensuring clarity in ensuring that there is effective mobilization on knowing one's HIV status through self/medical referral at the VCT and following up through ART treatment.

A significant number of respondents were on ART for more than 10 years i.e 58.4% of the respondents. A study in Southeastern USA showed average duration since HIV diagnosis was 7.3 ± 5.4 years (Vyavaharkar et al., 2011). A study in Vietnam showed the mean duration of HIV infection was 5.7 years (SD = 3.7 years) and 88.8% of patients had been taking ART for an average period of 3.0 years (Xuan Tran et al., 2014).Three Clinics in West Africa showed a median duration on HAART of 3 years (IQR 1–4 years) (Antoine et al., 2010). These differences in duration of ART use could be accrued to the mean age demographics of the participants so that an older mean age will have most respondents having been on ART for more years as seen in this study's results. Most respondents in this study were on 1st line regimen i.e. 88.4%. This was in agreement with a research done in South Wollo , Ethiopia, Dessie Referral Hospital among HIV/AIDS patients that found majority (88.4%) of the respondents were on first line ART regimen (Wollo, 2020). Antiretroviral Therapy enables possibility of achieving many users being on 1st line regimen.

Prevalence of Psychological Distresses

Depression

The prevalence of depression among adult People Living with HIV/AIDS attending CCC in the Busia center registered to be 13.7%. According to the National Guidelines for the management of HIV and AIDS in Kenya (2015) the prevalence for major depression among patients with HIV infection only and patients with AIDS have been estimated to be between 15% and 40%. The study results agrees with Kenya's rural Kilifi prevalence and correlates of depressive symptoms among adults living with HIV that showed prevalence rate of 13.8% (Nyongesa et al., 2019).

However, other studies showed higher depression prevalence rate. Mwaura (2018) in AMPATH clinic in Kitale County Referral Hospital showed 24.74% prevalence while Kibera (2013) at KNH prevalence rate was at 23.8%. Ethiopia's General Hospitals estimated 400kms near Addis Abba, east, west and south of the county had prevalence of 45.8% (Mohammed et al., 2015), 41.7% (Abadiga, 2019) and 20% (Wollo, 2020) respectively. These varying levels of depression rates among PLWHA can be explained by the rural areas showing lower prevalence of depression than urban areas. Contrasts exists with the differences in customization of HIV/AIDS care programs and strategies in the two areas. This is in relation to the differences between urban and rural areas in psychosocial-cultural and economic factors of living.

Alcohol Use Disorder

Concerning AUDIT scores, 5.8% of the respondents in the study were considered to have AUD. This was significantly lower rate compared to others studies. A research done at Kenyatta National Hospital among PLWHIVA showed AUD prevalence was at 14% (Kibera, 2015). A total of 25 studies done with 25,154 participants across developed and developing countries revealed

that the pooled prevalence estimate of AUD among PLWHA was found to be 29.80% (Duko, Ayalew, et al., 2019). Among PLWHIVA attending health care services in Ethiopia at 32.2%, 18.4% and 14.2% (Soboka et al., 2014)(Bultum et al., 2018) (Care & Gebre, 2019) . A systematic review and meta-analysis of 1362 articles including 22 studies showed 1 year prevalence of averagely 22.03% among PLWHIVA. This included south Africa (28.7%), Uganda (16.6%) and Nigeria (22.8%) (Necho et al., 2020).

Heavy drinkers chose more coping reasons for their behavior than infrequent drinkers who attach their actions to social reasons. Many researchers have found that drinking alcohol to cope with problems is more likely to lead to abusive drinking than is social drinking according to the concept of drinking motives (Abbey et al., 2015). In Kenya, "chang'aa" (distilled spirits; busaa left overs with sugar) and busaa (cereal based fermented beer) are the two most prevalent used alcoholic homemade drinks among others such as "muratina", "arwaga", "mnazi", etc. Busaa, most popular form of alcohol in the culture of the people in Busia County, is mostly consumed for sociability reasons rather than to cope with the stresses the individuals have in their daily lives. In the region, drinking busaa is a specifically very important customary activity during many social and religious ceremonies such as group genital circumcisions, weddings and funerals (Papas et al., 2010)(Abbey et al., 2015).

A study on Ethanol content in chang'aa and Busaa done in Eldoret where "busaa" is also the most commonly produced brew showed levels of 34% and 4% respectively. Drink servings sizes for "chang'aa" varied from 70 to 260 ml and "busaa" from 260 to 1,100 ml (Papas et al., 2010). These Busaa servings correspond to 3-4 units of standard beer intake while chang'aa 3-10 units of hard standard liquor intake. A unit of beer is 250ml with 5% Alcohol by Volume (ABV) while a unit of hard liquor is 25ml with 40% ABV. The WHO recommends not more than 4 units

standard drinks per day i.e., no more than 10 units standard drinks per week (NIAA, 2004) (WHO,2007)

Traditional alcoholic drinks have greatly evolved into commercial enterprises in others areas in the country causing reduced production of alcohol solely for home or communal use. Contrary, in Busia region, “busaa” has evolved into being accommodated by women and young people rather than being controlled by the elderly as in the past and is still greatly produced for communal use and at home. (Papas et al., 2010). Hence, drinking behavior of the individual in the region involves less heavy and more infrequent with additional social rather than stress reasons attached to its use, thereafter, reducing the likelihood to developing AUD due to its use.

Papas et al (2010) supportively argues that types of traditional homebrew in Kenya vary by geographic region and closely mirror the staple crop grown in the area. Additionally, other researchers argue that the distribution of alcohol consumption across countries in Africa in general is very heterogeneous and the type of drinks consumed differ geographically. That how alcohol is consumed in a country is an important determinant of types and levels of problems associated with drinking.(Ferreira-Borges et al., 2017)

Adherence to ART

On adherence rate of respondents to ART, most of the respondents had good adherence i.e. 83.1 % of the respondents while those with poor adherence were (16.9%). This is lower rate than a study done among 2920 patients in three clinics in West Africa. Using the AIDS Clinical Trials Group follow-up questionnaire, the study showed the adherence rate to HAART among the patients to be 91.8% (Antoine et al., 2010). In South West Ethiopia, a study done among 319 PLWHIV showed 95% adherence rate to HAART using missed does report (Tiyou et al., 2010).

In a Nigerian University Teaching Hospital, HAART good adherence rate was 73% using drug adherence questionnaire (Olisah et al., 2010). In Kenya, At KNH, a study carried out among 384 HIV respondents showed that the mean adherence rate of ART tested using pill count to be 76.3 % with non-adherence rate of 22.4 % (Waititu et al., 2016).

The study agrees with a study done among 403 HIV/ADS outpatients who were 18 years and older and were on HAART in CCCs at KNH, Kenya Medical Research Institute and Riruta Health Centre showed prevalence of non-adherence to HAART using CASE to be 18% while 82% were adherent (Wakibi, 2010). Anti-Retroviral Treatment is a WHO recommended HIV medication that has shown great results towards control of HIV in one's body hence people are able to have quality life (Avert, 2018). The differences in the rates of the adherence to ART can be accrued to the different test tools that were used for assessment.

Association of Predictor factors of Psychological Distresses

In the study, those at lesser likelihood to depression were males while those at greater likelihood were those between the ages of 31-40 years and being on ART within first 5 years of diagnosis. On AUD, those at greater likelihood of developing the disorder were males, being single or in a relationship, living alone and being on ART within the first 5 years of diagnosis. Data got from the study showed being of age 31-40 years, living with friends or family, receiving outpatient treatment had one lower likelihood to poor adherence to ART while being on first line regimen showed higher likelihood to poor adherence to ART.

In summary, one's personal, psychosocial and medication regimen factors have been shown to greatly influence one's psychological well-being and level of adherence to ART in BCRH. This involves one's gender, age, whom one lives with, one's relationship status, HIV issues

related with years of living with the condition, being on treatment at the CCC and the regimen one is on. After adjusting for each of these factors, being male predicted lower likelihood to depression and AUD.

Women experience some specific form of illnesses and biological changes that can be related to depression that are related to ovarian hormonal changes such as pre-menstrual Dysphoric Disorder, postmenopausal difficulties etc. (Albert, 2015). Hence, would explain the higher odds of having depression in the study as the mean age of respondents being between 41-50 years, greater number of respondents were within age of experiencing these phenomena. Additionally, with the difficulty in differentiating HIV/AIDS symptoms and illness somatic symptoms, this places women at greater vulnerability to difficulty in making the disparity in manifested symptoms.

According to Peltier (2019) Alcohol use Disorder has historically been known to be more affluent among men than women. However, over the past ten years, this gap has been getting narrower such that rates of AUDs have increased in women by 84%, relative to a 35% increase in men in the United States. Assessed over the past 16 years in a number of data sources, women have been engaging in substantial binge drinking and overall increased consumption but not men. A report of United Kingdom on drinking trends over the last 30 years that involved a systematic review of research showed that binge drinking among men remained on a fairly stable level from 1998 to 2006 while for women the level doubled from 8% in 1998 to 15% in 2006. This was observed to be most pronounced among women aged 25 years and older (Smith & Foxcroft, 2009). Women have been known to drink for more regulation of affective state than men. They also are more sensitive to alcohol neurodegeneration (Peltier et al., 2019).

Consumption of alcohol for stress and negative states rather than social reasons have been known to be associated with AUD. Consumption of Busaa in Busia region has been observed more often to be done in controlled environment where a common pot with shared siphon pipes is used. The amount of traditional drink in each pot is measured based on number of users around each pot to prevent excessive drinking. The consumption is regulated by an appointee in the drinking group who also looks out for excessive drinking. With evolution of busaa drinking to involve women now, there exists a deficit in their control of use in terms of measure and also regulations on how to use. Historically, the consumption of the drink by men was guided by culturally defined rules on what time, with whom, where, when and why the use. The evolution of including women in use may not provide adequate guidance hence may contribute to excessive, harmful and hazardous drinking. In relation to other alcoholic drinks, excessive consumption of busaa has been observed to lead to preference for other hard liquor such as chang'aa as the two prevalent alcoholic drinks among the respondents (Of et al., 2014).

Additionally, after adjusting for confounders, the study showed higher likelihood of; depression being predicted on those having being on ART for less than 5 years; AUD having being on ART for less than 2 years but more than a year; and poor adherence when being in first line regimen. Being on ART for more years can increase your resilience to factors that may contribute to psychological distress related to HIV/AIDS such as stigma, difficulty in following regimen on the drugs etc. This is due to great insight an individual gains overtime. This then can be defined as a major protective factor through the years forthcoming in the treatment.

There was no significant relationship between depression and difficulty in adherence to ART, however, there was a significant relationship between depression and AUD. Even though the prevalence of depression was higher among those with no AUD, the likelihood of developing

depression when one had AUD was higher than when one had no AUD. This likelihood is supported by the "theory of drinking motives." Additionally, there were significant confounding stressor factors that contributed greatly to the higher prevalence of depression among participants with no AUD and such can be seen to be other factors other than the ones involved in the study e.g., Covid pandemic and its associated stressor factors.

This can also be an explanation to where in the study, the prevalence of AUD was higher among those with good adherence to ART. The culturally spearheaded increased availability of traditional alcohol for mainly home consumption rather than commercial use, in addition to a quarantine period would contribute to this. However, the likelihood of having AUD when one had poor adherence was higher than when one had good adherence. This is as seen supported by the "theory of drinking motives".

5.2 Limitations of the Study

The study failed to access a variety of psychiatric disorders that were noticeably present among the respondents apart from depression and alcohol use disorder such as psychotic features. The study was done at a time when the country was at the critical stages of COVID 19 pandemic hence posing a challenge on data collection as one had to adhere to the rules and regulations of interaction guidelines given by the WHO. Some of the participants had to be offered researcher administered questionnaires in the field area to avoid overcrowding in the research room. The study is not a representation of national statistics and conclusions with regard to the prevalence of AUD and depression concerning adherence to ART. For this reason, the conclusions can lack reliability for making inference on other studies that touch on the national effect of these aspects for PLWHA in Kenya.

5.3 Conclusion

The findings of this study prove a significant prevalence of the psychological distresses AUD, depression and adherence difficulty to ART among patients living with HIV/AIDS attending the CCC at BCRH. The study shows lower prevalence rate of AUD and depression compared to other studies with adherence rates being comparable. Being female and being on ART treatment within first 5 years has shown to increase odds of developing these psychological distresses among the respondents. On HIV/AIDS, being on 1st line regimen affects one's adherence to ART. No statistically significant relationship was observed between depression and adherence to ART however, there was significant relationship between; AUD and depression, AUD and poor adherence.

5.4 Recommendations

As part of ART program, productive screening of psychological issues in line with evidence-based treatment of the same should be involved as a continual process. Adoption of clear systems and channels of referrals to psychologists and psychiatrists should be enhanced and mental health wellness follow-ups to be made fundamental. To ensure this is effective, programs to ensure legislations proposed are actively enacted and enforced at health care institution need to be established.

The health care practices at the BCRH on early intervention that target multiple factors of difficulty in initial years of HIV/AIDS diagnosis need to be further evaluated strategically and encourage evidence-based measures to counter barriers to effectivity in implementation of the interventions. Continued monitoring and evaluation of the practices should also be encouraged.

Traditional brew represents the highest proportion of alcohol use in Kenya and alcohol in general is consumed differently geographically. Therefore, NACADA and other relevant bodies should enhance country-wide research in this area as a significant marker for determining county/regional specific strategies to reduce harmful use of alcohol. Consequently, this will enable health care institutions to properly manage AUD, depression and other psychiatric comorbidities especially among PLWHIVA.

Finally, the research was done at a time when the country was facing the COVID 19 pandemic hence, data collected may be influenced by factors around issues of the crisis. A repeat of the study at a later date would be appreciative to compare results and make further conclusions. Further research should be done in other health institutions to determine the relationship between results from this study and future studies. Additionally, researching on the effects of other psychiatric disorders not discussed in this research would be progressive to help understand and curb their negative impacts on PLWHIVA.

REFERENCES

Abadiga, M. (2019). Depression and its associated factors among HIV / AIDS patients attending ART clinics at Gimbi General hospital , West Ethiopia , 2018. *BMC Research Notes*, 1–8. https://doi.org/10.1186/s13104-019-4553-0

Abbey, A., Smith, M. J. O., & Scott, R. O. (2015). ALCOHOL AND ALCOHOL CONSUMPTION : AN. *HHS Public Access*, *18*(6), 659–670.

Adejumo, O. (2016). HHS Public Access. *Int J STD AIDS*, *27*(11), 938–949. https://doi.org/10.1177/0956462415600582.Psychiatric

AIDS & Control. (2018). National Technical Guideline On Anti Retriviral Treatment. In *National AIDS Control Organization India*.

Aids, N., & Council, C. (2018). *Kenya hiv estimates*.

Akena, D. H., Musisi, S., & Kinyanda, E. (2010). A comparison of the clinical features of depression in HIV-positive and HIV-negative patients in Uganda. *African Journal of Psychiatry (South Africa)*, *13*(1), 43–51. https://doi.org/10.4314/ajpsy.v13i1.53429

Albert, P. R. (2015). Why is depression more prevalent in women? *Journal of Psychiatry and Neuroscience*, *40*(4), 219–221. https://doi.org/10.1503/jpn.150205

Amankwah, A. K. (2015). *Facilitators and Barriers to Antiretroviral Therapy Adherence Among HIV/AIDS Patients: A Multi-case Study of Sunyani Regiona and Municipal Hospitals* (Issue July).

Andersen, L., Kagee, A., Cleirigh, C. O., Safren, S., & Joska, J. (2015). Understanding the

experience and manifestation of depression in people living with HIV / AIDS in South Africa in South Africa. *AIDS Care*, *27*(1), 59–62. https://doi.org/10.1080/09540121.2014.951306

Antoine, J., Didier, E., Bashi, J., Maiga, A., Moussa, M., Alassane, T. H., & Djimon, Z. M. (2010). Alcohol use and non-adherence to antiretroviral therapy in HIV-infected patients in West Africa. *Addiction*, *105*(8), 1416–1421. https://doi.org/10.1111/j.1360-0443.2010.02978.x.Alcohol

Avert. (2018). HIV and AIDS in East and Southern Africa regional overview. In *Global Information and Education on HIV and AIDS*.

Ayano, G., Solomon, M., & Abraha, M. (2018). A systematic review and meta-analysis of epidemiology of depression in people living with HIV in east Africa. *BMC Psychiatry*, *18*(254), 1–13.

Azia, I. N., Mukumbang, F. C., & Wyk, B. Van. (2016). Barriers to adherence to antiretroviral treatment in a regional hospital in Vredenburg , Western Cape , South Africa. *Southern African Journal of HIV Medicine*, *17*(1), 1–8.

Babor et al. (2014). *The Alcohol Use Disorders Identification Test, Adapted for Use in the United States: A Guide for Primary Care Practitioners*.

Bayew Tsega, B. A. srikanth &Zewdneh shewamene. (2015). Determinants of non-adherence to antiretroviral therapy in adult hospitalized patients , Northwest. *Dovepress*, 373–380.

Bernard, C., & Rekeneire, N. De. (2017). Prevalence and factors associated with depression in people living with HIV in sub- Saharan Africa : A systematic review and meta- analysis.

Depression and HIV in Africa, 1–22.

Bultum, J. A., Yigzaw, N., Demeke, W., & Alemayehu, M. (2018). Alcohol use disorder and associated factors among human immunodeficiency virus infected patients attending antiretroviral therapy clinic at Bishoftu General Hospital , Oromiya region , Ethiopia. *PLOS ONE*, *5*, 1–12.

Care, P., & Gebre, B. B. (2019). Factors Associated With Alcohol Use Disorder Among People Living With HIV / AIDS Attending Art Clinic , Mizan Tep University Teaching. *HIV/AIDS-Research and Palliative Care*, 239–245.

Cerutti, B., Broers, B., Masetsibi, M., Faturiyele, O., Toti-mokoteli, L., Motlatsi, M., Bader, J., Klimkait, T., & Labhardt, N. D. (2016). Alcohol use and depression : link with adherence and viral suppression in adult patients on antiretroviral therapy in rural Lesotho , Southern Africa : a cross-sectional study. *BMC Public Health*, 1–7. https://doi.org/10.1186/s12889-016-3209-4

Ceylan et al. (2019). Determination of medication adherence and related factors among people living with HIV / AIDS in a Turkish university hospital. *Turkish Journal of Medical Sciences*, *49*, 198–205. https://doi.org/10.3906/sag-1802-137

Dan, A. (2016). *FACTORS AFFECTING ADHERENCE TO ANTIRETROVIRAL THERAPY IN SIAYA COUNTY,WESTERN kENYA*.

Diclemente, R. J., & Patel, N. (2017). Intersecting Epidemics : HIV , HCV , and Alcohol Use. *Article of Cliniccal and Biomedical Research*, *1*(4), 176–178.

Duko, B., Ayalew, M., & Ayano, G. (2019). The prevalence of alcohol use disorders among

people living with HIV/AIDS: A systematic review and meta-analysis. *Substance Abuse: Treatment, Prevention, and Policy*, *14*(1), 1–9. https://doi.org/10.1186/s13011-019-0240-3

Duko, B., Toma, A., & Abraham, Y. (2019). Alcohol use disorder and associated factors among individuals living with HIV in Hawassa City, Ethiopia: A facility based cross- sectional study. *Substance Abuse: Treatment, Prevention, and Policy*, *14*(1), 1–6. https://doi.org/10.1186/s13011-019-0212-7

Dutta, N., Omesh, S., Nandi, S., Mk, S., Dutta, N., Omesh, S., & Nandi, S. (2018). *Virologic failure on anti-retroviral therapy without HIV drug resistance mutation*. *1*(2), 1–5.

Egbe, C. O., Dakum, P. S., Ekong, E., Kohrt, B. A., Minto, J. G., & Ticao, C. J. (2017). Depression , suicidality , and alcohol use disorder among people living with HIV / AIDS in Nigeria. *BMC Public Health*, *17*, 1–13. https://doi.org/10.1186/s12889-017-4467-5

Ferreira-Borges, C., Parry, C. D. H., & Babor, T. F. (2017). Harmful use of alcohol: A shadow over sub-Saharan Africa in need of workable solutions. *International Journal of Environmental Research and Public Health*, *14*(4), 1–12. https://doi.org/10.3390/ijerph14040346

Francis, J. M., Weiss, H. A., Mshana, G., & Baisley, K. (2015). The Epidemiology of Alcohol Use and Alcohol Use Disorders among Young People in Northern Tanzania. *PLOS ONE*, 1–17. https://doi.org/10.1371/journal.pone.0140041

Graham, K. K., Mantell, J. E., Mundy, L. M., Eldred, L., Botsko, M., & Finkelstein, R. (2008). NIH Public Access. *National Institute of Health*, *18*(7), 853–861. https://doi.org/10.1080/09540120500465160.The

Grant, B. F., Goldstein, R. B., Saha, T. D., Chou, S. P., Jung, J., Zhang, H., Pickering, R. P., Ruan, W. J., Smith, S. M., Huang, B., & Hasin, D. S. (2015). Epidemiology of. *National Epidemiologic Survey on Alcohol and Related Conditions III*, *20852*, 1–10. https://doi.org/10.1001/jamapsychiatry.2015.0584

Hall, B. J., Iok, A., Lam, F., Leong, T., Hou, W. W., Latkin, C., Galea, S., & Hall, B. J. (2017). The epidemiology of current depression in Macau , China : towards a plan for mental health action capital. *Social Psychiatry and Psychiatric Epidemiology*. https://doi.org/10.1007/s00127-017-1415-8

Heestermans, T., Browne, J. L., Aitken, S. C., Vervoort, S. C., & Klipstein-grobusch, K. (2016). Determinants of adherence to antiretroviral therapy among HIV-positive adults in sub-Saharan Africa : a systematic review. *BMJ Global Health*, *10*, 1–13. https://doi.org/10.1136/bmjgh-2016-000125

HIV/AIDS. (2018). *HIV and AIDS in Kenya Groups most affected by HIV in Kenya Sex workers They said that I was careless and irresponsible that ' s why I got*.

IHME. (2017). *Global Burden of Disease Study 2017*.

Karanja, S. W. (2013). *FACTORS INFLUENCING ADHERENCE TO ANTIRETROVIRAL* (Issue November).

Khan, Z. & I. (2015). Depression – A Review Review Paper Depression – A Review. *Research Journal of Recent Sciences*, *1*(4), 79–87.

Kheswa, J. G. (2017). Exploring the Factors and Effects of Non- Adherence to Antiretroviral Treatment by People Living with HIV / AIDS Exploring the Factors and Effects of Non-

Adherence to Antiretroviral. *The Indo-Pacific Journal of Phenomenology*, *17*(1), 1–11. https://doi.org/10.1080/20797222.2017.1280923

Kibera, A. W. (2015). *Prevalence of Alcohol Use Disorder and Depression in Patients Attending Comprehensive Care Centre Kenyatta National Hospital*.

Kiunyu. (2015). *PREVELANCE OF ALCOHOL & SUBSTANCE USE DISORDERS AMONG HIV INFECTED YOUTH AGED BETWEEN 15-25 YRS OLD AT MBAGATHI HOSPITAL*.

Kogo, J. C. (2018). *The Association Between Depression and Non-adherence to Antiretroviral Therapy Among Pregnant Women Living With HivA Cross-sectional Study at the Antenatal Clinic of Kibera South Health Centre, Nairobi*.

Lim, G. Y., Tam, W. W., Lu, Y., Ho, C. S., Zhang, M. W., & Ho, R. C. (2018). Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. *Scientific Reports, March 2017*, 1–10. https://doi.org/10.1038/s41598-018-21243-x

Mengistie, A., Birhane, A., Tesfahun, E., & City, D. B. (2018). *Assessment of Adherence to Antiretroviral Therapy Among Adult People Living with HIV / AIDS in North East , Ethiopia*.

Meyer, A., & Ndetei, D. (2015). *Providing Sustainable Mental Health Care in Kenya : A Demonstration Project*.

Mohammed, M., Mengistie, B., Dessie, Y., & Godana, W. (2015). Prevalence of Depression and Associated Factors among HIV Patients Seeking Treatments in ART Clinics at Harar Town , Eastern Ethiopia. *AIDS & Clinical*, *6*(6), 1–6. https://doi.org/10.4172/2155-6113.1000474

Moraes et al. (2017). Depression and adherence to antiretroviral treatment ˜ o Paulo , the largest

city in in HIV-positive men in Sa South America : Social and psychological implications. *Clinical Science*, *72*(12), 743–749. https://doi.org/10.6061/clinics/2017(12)05

Moss, C., Mendoza-sassi, R. A., Dias, L., Nader, M. M., Maria, A., & Martinez, B. De. (2017). Alcohol use disorders among people living with HIV / AIDS in Southern Brazil : prevalence , risk factors and biological markers outcomes. *BMC Infectious Diseases*, *17*(263), 1–8. https://doi.org/10.1186/s12879-017-2374-0

Ndegwa et al. (2017). Factors influencing Alcohol Use among University Students in a Kenyan University Stephen Ndegwa, PhD., Alice Munene, PsyD., and Rebecca Oladipo, PhD., Daystar University. *African Journal of Clinical Psychology*, *1*, 102–117.

Ndetei, D. M., Khasakhala, L. I., Kuria, M. W., Mutiso, V. N., Ongecha-owuor, F. A., & Kokonya, D. A. (2009). general medical facilities in Kenya : a cross-sectional study. *Annals of General Psychiatry*, *February*, 1–9. https://doi.org/10.1186/1744-859X-8-1

Necho, M., Belete, A., & Getachew, Y. (2020). The prevalence and factors associated with alcohol use disorder among people living with HIV/AIDS in Africa: A systematic review and meta-analysis. *Substance Abuse: Treatment, Prevention, and Policy*, *15*(1), 1–15. https://doi.org/10.1186/s13011-020-00301-6

Nga'nga', P. W. (2014). *Psychiatric Morbidity Among Adult Hiv/aids Patients Attending A Comprehensive Care Centre At A City Council Clinic In Nairobi.*

NICE. (2018). *THE NICE GUIDELINE ON THE TREATMENT AND THE TREATMENT AND MANAGEMENT OF DEPRESSION* (Issue April).

Nyongesa, M. K., Mwangi, P., Wanjala, S. W., Mutua, A. M., Newton, C. R. J. C., & Abubakar,

A. (2019). Prevalence and correlates of depressive symptoms among adults living with HIV in rural Kilifi, Kenya. *BMC Psychiatry*, *19*(1), 1–10. https://doi.org/10.1186/s12888-019-2339-5

Of, E., Brew, I., On, M., Youth, U., & Bungoma, I. N. (2014). *Effects of Illicit Brew Drinking and INtervention Measures on Unemployed Youth in Bungoma County,Kenya* (Issue October).

Olisah, V. O., Baiyewu, O., & Sheikh, T. L. (2010). Adherence to highly active antiretroviral therapy in depressed patients with HIV / AIDS attendinga Nigerian university. *African Journal of Psychiatry*, *13*, 275–279.

Olley, B. O., Adebayo, K. O., Ogunde, M. J., Ishola, A., & Ogar, A. P. (2017). Psychosocial Factors Predicting Severity of Depression Among Treatment-Seeking HIV / AIDS Patients : A Multi-Site Nigerian Study. *Nigerian Journal of Clinical Practice*, *20*(3), 296–302. https://doi.org/10.4103/1119-3077.201432

Pal, Y., Balhara, S., Gupta, P., & Elwadhi, D. (2017). Co-occurring depression and alcohol-use disorders in South-East Asia : a narrative review. *WHO South-Est Asia Journal of Publuc Health*, *6*(April), 1–59.

Papas, R. K., Sidle, J. E., Wamalwa, E. S., Okumu, T. O., Bryant, K. l., Goulet, J. L., Maisto, S. A., Braithwaite, R. S., & Justice, A. C. (2010). Estimating Alcohol ConMethods: The Case for Cost Over Volume. *NIH Public Access*, *14(4)*(4), 836–844. https://doi.org/10.1007/s10461-008-9492-z.Estimating

Peltier, M. R., Verplaetse, T. L., Mineur, Y. S., Petrakis, I. L., Cosgrove, K. P., Picciotto, M. R., & McKee, S. A. (2019). Sex differences in stress-related alcohol use. *Neurobiology of*

Stress, *10*(August 2018), 100149. https://doi.org/10.1016/j.ynstr.2019.100149

Rivera-rivera, Y., Albino, E., & Rivera-amill, V. (2016). Impact of Depression and Inflammation on the Progression of HIV Disease Yainyrette. *HHS Public Access*, *7*(3), 1–14. https://doi.org/10.4172/2155-9899.1000423.Impact

Ronald C. Kessler, E. J. B. (2014). The epidemiology of depression across cultures. *National Institute of Health*, *34*, 119–138. https://doi.org/10.1146/annurev-publhealth-031912-114409.The

Santos, V. da F. (2017). Alcohol effect on HIV-positive individuals : treatment and quality of life. *Original Article*, *30*(1), 94–100.

Satterthwaite, D., McGranahan, G., & Tacoli, C. (2010). Urbanization and its implications for food and farming. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365*(1554), 2809–2820. https://doi.org/10.1098/rstb.2010.0136

Smith, L., & Foxcroft, D. (2009). *Drinking in the UK: An exploration of trends* (Issue May). www.jrf.org.uk

Soboka, M., Tesfaye, M., Feyissa, G. T., & Hanlon, C. (2014). *Alcohol use disorders and associated factors among people living with HIV who are attending services in south west Ethiopia*. 1–9.

Sule, H. M. et al. (2018). Prevalence of Depression and Associated Factors in HIV-Positive Adults Attending an Antiretroviral Clinic in. *Journal of Family Medicine and Health Care*, *4*(4), 26–32. https://doi.org/10.11648/j.jfmhc.20180404.12

Tesfaw, G., Ayano, G., Awoke, T., Assefa, D., Birhanu, Z., & Miheretie, G. (2016). Prevalence

and correlates of depression and anxiety among patients with HIV on- follow up at Alert Hospital , Addis Ababa ,. *BMC Psychiatry*, *16*(368), 1–7. https://doi.org/10.1186/s12888-016-1037-9

Tiyou, A., Belachew, T., Alemseged, F., & Biadgilign, S. (2010). Predictors of adherence to antiretroviral therapy among people living with HIV / AIDS in resource- limited setting of southwest ethiopia. *AIDS Research and Therapy*, 1–10.

Treating Depression in Africa at Scale. (2016). *April*, 1–3.

Tymchuk, S., Gomez, D., Koenig, N., Gill, M. J., Fujiwara, E., & Power, C. (2018). Associations between Depressive Symptomatology and Neurocognitive Impairment in HIV / AIDS. *Canadian Psychiatric Association*, *63*(5), 6–11. https://doi.org/10.1177/0706743717737029

UNAIDS. (2018a). 2017 GLOBAL HIV STATISTICS. *World AIDS Day*, 1–6.

UNAIDS. (2018b). Thematic Segment : Mental Health and HIV / AIDS – Promoting Human Rights , an Intergrated and Person-Centered Approach to Improving ART Adherence , Well-being and Quality of life. *UNAIDS Program Coordintion Board*, *43*(18.32), 1–39.

Unitaid. (2018). *Hiv market report* (Issue 9).

Vyavaharkar, M., Moneyham, L., Corwin, S., Tavakoli, A., Saunders, R., & Annang, L. (2011). HIV-disclosure, social support, and depression among HIV-infected African American women living in the rural Southeastern United States. *AIDS Education and Prevention*, *23*(1), 78–90. https://doi.org/10.1521/aeap.2011.23.1.78

Waititu, A. I., Mwangangi, E. M., Amugune, B., Bosire, K. O., & Makanyengo, M. (2016). Impact of depression on adherence to antiretroviral therapy among HIV/AIDS patients at a

Kenyan referral hospital. *J. Pharmacol. Ther*, *5*(1), 15–20. http://erepository.uonbi.ac.ke/bitstream/handle/11295/95964/Waititu_Impact of depression on adherence to antiretroviral therapy among HIV/AIDS patients at a Kenyan referral hospital.pdf?sequence=3&isAllowed=y

Wakibi. (2010). *Prevalence and Predictors of Non-adherence , and Incidence of Treatment Failure among Patients on Free Highly Active Antiretroviral Therapy in Nairobi , Kenya Samwel Ndiguitha Wakibi A Thesis Submitted in Partial Fulfillment for the Degree of Doctor of Ph*.

WHO. (2017). Depression and Other Common Mental Disorders Global Health Estimates. In *WHO (World Health Organization)*.

Wollo, S. (2020). Prevalence of depression and associated factors among HIV / AIDS patients attending antiretroviral therapy clinic at Dessie referral. *International Journal of Mental Health Systems*, 1–8. https://doi.org/10.1186/s13033-020-00389-0

World Health Organisation. (2018). *Global status report on alcohol and health 2018*.

Xuan Tran, B., Thanh Nguyen, L., Duy Do, C., Le Nguyen, Q., & Marie Maher, R. (2014). Associations between alcohol use disorders and adherence to antiretroviral treatment and quality of life amongst people living with HIV/AIDS. *BMC Public Health*, *14*, 27. https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/1471-2458-14-27

APPENDICES

APPENDIX 1: Work Plan

	MAY 2019	JUNE 2019	JULY 2019	SEP 2019	OCT 2019	NOV 2019	DEC 2019	APR 2020	OCT 2020	DEC 2021	JAN 2022	MAY 2022
Topic selection												
Proposal writing												
Literature review												
Proposal correction												
Final proposal												
Defense proposal												
Ethics												
Data collection												
Data analysis												
Results presentation												
Submit dissertation												

APPENDIX 2: Informed Consent Explanation Form

My name is Elizabeth Ipurong Oriama, a Master of Science student in Clinical Psychology, in the Department of Psychiatry, University of Nairobi.

Permission is requested from you for enrolment in the medical research study. Your agreement to enroll is voluntary. You should understand the following general principles before agreeing to be a participant in the research study.

a) You may withdraw from the study at any time.
b) Referral to participate will involve no penalty or loss of benefits of treatment and care from the hospital.
c) After you read the explanation, please feel free to ask any questions that will allow you to understand clearly the nature of the study.

Title: Prevalence of Depression, Alcohol Use Disorders and their association with ART among adult patients attending Comprehensive Care Center, Busia Referral County Hospital.

Institution: Department; of Psychiatry, Faculty of Medicine, College of Health Sciences University of Nairobi

Investigator Elizabeth Ipurong Oriama

Supervisors 1. Dr. Lincoln Khasakhala

2. Dr. Teresia Mutavi

Objective of the study: To determine the prevalence of Depression, Alcohol Use Disorders and their association with ART among adult patients attending Comprehensive Care Center, Busia Referral County Hospital.

Recruitment Procedure: All HIV/AIDS positive patients who will meet the eligibility criteria will have an equal chance to participate in the study. Involvement in the study will be voluntary hence decline to be in the study will not have any underlying consequences. Eligibility criteria will involve you being 18 and above, be willing to consent, be registered as a member of the clinic who receives care services and can communicate in English or Kiswahili prominent languages in Kenya. Those too ill to participate will not be considered legible for the study.

You will be fill three questionnaires that will be assessing depression, alcohol use and adherence to your Anti-Retroviral treatment regimen. There will be no invasive method used in the course of the study.

Visits: This is the only visit that you will take part in during the study. Follow-up after the research is completed will be done and presented to the University Of Nairobi Department Of Psychiatry for approval. Feedback on the results of the study will be made to the participants during their subsequent visit to the hospital.

Informed Consent: All eligible respondents will be provided with informed consent which will have a clear indication of the purpose of the study, data collection process, voluntary participation information, potential risks and benefits of participation in the study, issues of confidentiality and anonymity, contacts for use in case of any questions related to the study.

Benefits: Participation in the study will provide one with an opportunity to learn and be screened for depression, alcohol use disorders and to have an understanding of the factors that affect adherence to ARV medication. Those with scores that will prompt immediate intervention will be

referred for treatment and management with CCC facility. Early identification of psychiatric conditions helps improve medication adherence. There will also be the pride of being part of a team that strives to help improve mental health care to benefit society.

Risks: The participants will have to respond to personal questions about their lives. For this reason, some questions may seem offensive.

The questions might evoke some emotions and the results might also point towards an individual needing mental health care.

Time: Being involved in the entire activity of consenting, completing the questionnaires and screening tests will take approximately 30 minutes for each participant.

Confidentiality and privacy: Code words and serial numbers will be used to ensure the anonymity of the participants. All paperwork containing information of the respondents will be kept in a lock and key cabinet which only the researcher could access.

Results: Anonymous data will be shared with University of Nairobi and Busia County Referral Hospital.

Contact

If you have any questions regarding the study or participation in this study, you can call any of my supervisors

Dr. Lincoln Khasakhala 0722860485

Dr. Teresia Mutavi 0722391236

You can also contact the researcher 0707655771

Thank you for your participation.

Researcher's Name – Elizabeth Ipurong Oriama

Contact 0707655771

MSc Clinical Psychology

Department of Psychiatry

University of Nairobi

Participant's Code _____ Date _____

Subjects' Statement:

I, the undersigned, do hereby volunteer to participate in this study whose nature and purpose has been explained to me by Elizabeth Ipurong Oriama. I understand that this is my choice. If I change my mind, I understand that I will continue to receive medical care at the center.

Subject's signature _____

Date _____

Witness signature _____

Date _____

Researcher signature _____

Date _____

APPENDIX 3: Socio-demographic Questionnaire

Introduction

This questionnaire has been designed to collect data with regards assessing the prevalence of Depression, Alcohol Use Disorders and their association with ART among adult patients attending Comprehensive Care Center, Busia Referral County Hospital.

Please do not write your name or give any personal information in this questionnaire.

Instructions

Kindly answer the questions by putting a tick (√**)** in the appropriate box or writing in the space provided.

SECTION 1: Bio-Data (Personal information).

1. Gender a) Male ☐

   b) Female ☐

2. Age in years

   a) 18-30 ☐

   b) 31-40 ☐

   c) 41-50 ☐

   d) 51 and above ☐

3. What is your religion?

   a) Catholic ☐

   b) Protestant ☐

   c) Muslim ☐

   d) Other Christians ☐

e) None ☐

f) Other (specify) _____

4. What best described your relationship status?

a) Single ☐

b) In a relationship ☐

c) Cohabiting ☐

d) Married ☐

e) Divorced ☐

f) Separated ☐

g) Widowed ☐

h) Other _____

5. Where do you live?

a) Urban area (in town) ☐

b) Rural area (Out of town) ☐

For a) and b) Specify _____

6. Whom do you live with?

a) Alone ☐

b) With parents ☐

c) With siblings ☐

d) With relationship partner ☐

e) With friend or friends ☐

7. What is your employment status?

a) Self-employment ☐

b) Formal employment (Full time) ☐

c) Formal employment (Part time) ☐

d) Unemployed ☐

e) Student ☐

f) Retired ☐

g) Other _____

8. What is your Income bracket?

a) 1,000-10,000 ☐

b) 10,001- 20,000 ☐

c) 20,001-30,000 ☐

d) 30,001-40,000 ☐

e) 40,001-50,000 ☐

f) 50,001 and above ☐

9. How did you learn about your diagnosis?

a) Self –referral to VCT ☐

b) Referred by sexual partner ☐

c) Referral by medical worker due to health problems ☐

d) Referred by family member ☐

e) Other (Specify) _____

10. How was the news broken to you?

a) By the VCT counsellor ☐

b) By the medical worker after counselling ☐

c) By the nurse after counselling ☐

d) No counselling was given ☐

e) Other (Specify) _____

11. Type of treatment offered

a) Counselling only ☐

b) Out-Patient treatment ☐

c) In-patient treatment ☐ A

d) ART treatment ☐

e) Referred to CCC ☐

f) Other (Specify) _____

12. For how long have you been on ART?

Less than a year ☐

More than a year ☐

More than two years ☐

More than five years ☐

More than ten years ☐

13. What regimen are you on?

First line ☐

Second line ☐

Third line ☐

APPENDIX 4: CASE Adherence Index Questionnaire

Please circle the corresponding answer

1. How often do you feel that you have difficulty taking your HIV medications on time? By "on time" we mean no more than two hours before or two hours after the time your doctor told you to take it.
    4. Never
    3. Rarely
    2. Most of the time
    1. All of the time
2. On average, how many days PER WEEK would you say that you missed at least one dose of your HIV medications?
    1. Everyday
    2. 4-6 days/week
    3. 2-3 days/week
    4. Once a week
    5. Less than once a week
    6. Never
3. When was the last time you missed at least one dose of you HIV medications?
    1. within the past week
    2. 1-2 weeks ago
    3. 3-4 weeks ago
    4. between 1 and 3 months ago
    5. More than 3 months ago
    6. Never

Mannheimer, et al. AIDS Care 2006; 18:853-861.

APPENDIX 5: Beck's Depression Inventory

On this questionnaire there are groups of statements. Please read each of the statements carefully, then pick out the one statement in each group which best describes the way that you have been feeling the past week, including today Circle the number besides the statements in each group before making your choice

1.

0 I do not feel sad.

1 I feel sad

2 I am sad all the time and I can't snap out of it.

3 I am so sad and unhappy that I can't stand it.

2.

0 I am not particularly discouraged about the future.

1 I feel discouraged about the future.

2 I feel I have nothing to look forward to.

3 I feel the future is hopeless and that things cannot improve.

3.

0 I do not feel like a failure.

1 I feel I have failed more than the average person.

2 As I look back on my life, all I can see is a lot of failures.

3 I feel I am a complete failure as a person.

4.

0 I get as much satisfaction out of things as I used to.

1 I don't enjoy things the way I used to.

2 I don't get real satisfaction out of anything anymore.

3 I am dissatisfied or bored with everything.

5.

0 I don't feel particularly guilty

1 I feel guilty a good part of the time.

2 I feel quite guilty most of the time.

3 I feel guilty all of the time.

6.

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7.

0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.

8.

0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

9.

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10.

0 I don't cry any more than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't cry even though I want to.

11.

0 I am no more irritated by things than I ever was.
1 I am slightly more irritated now than usual.
2 I am quite annoyed or irritated a good deal of the time.
3 I feel irritated all the time.

12.

0 I have not lost interest in other people.

1 I am less interested in other people than I used to be.

2 I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

13.

0 I make decisions about as well as I ever could.

1 I put off making decisions more than I used to.

2 I have greater difficulty in making decisions more than I used to.

3 I can't make decisions at all anymore.

14.

0 I don't feel that I look any worse than I used to.

1 I am worried that I am looking old or unattractive.

2 I feel there are permanent changes in my appearance that make me look unattractive

3 I believe that I look ugly.

15.

0 I can work about as well as before.

1 It takes an extra effort to get started at doing something.

2 I have to push myself very hard to do anything.

3 I can't do any work at all.

16.

0 I can sleep as well as usual.

1 I don't sleep as well as I used to.

2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

0 I don't get more tired than usual.

1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

3 I am too tired to do anything.

18.

0 My appetite is no worse than usual.

1 My appetite is not as good as it used to be.

2 My appetite is much worse now.

3 I have no appetite at all anymore.

19.

0 I haven't lost much weight, if any, lately.

1 I have lost more than five pounds.

2 I have lost more than ten pounds.

3 I have lost more than fifteen pounds.

20.

0 I am no more worried about my health than usual.

1 I am worried about physical problems like aches, pains, upset stomach, or constipation.

2 I am very worried about physical problems and it's hard to think of much else.

3 I am so worried about my physical problems that I cannot think of anything else.

21.

0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I have almost no interest in sex.

3 I have lost interest in sex completely.

APPENDIX 6: AUDIT Screening Tool

1. How often do you have a drink containing alcohol?

(0) Never (Skip to Questions 9-10)

(1) Monthly or less

(2) 2 to 4 times a month

(3) 2 to 3 times a week

(4) 4 or more times a week

2. How many drinks containing alcohol do you 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 do 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 guilt 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 7: Kiswahili version

Fomu ya Maelezo ya Dhibitisho inayojulikana

Jina langu ni Elizabeth Ipurong Oriama, mwanafunzi wa Kliniki ya Saikolojia, katika Chuo Kikuu cha Nairobi, Idara ya Psychiatry. Ruhusa inaombwa kwako kujiandikisha katika masomo ya utafiti huu. Makubaliano yako ya kujiandikisha ni kwa hiari yako. Unapaswa kuelewa kanuni zifuatazo za jumla kabla ya kukubali kuwa mshiriki katika utafiti.

a) Unaweza kujiondoa kutoka kwa masomo ya utafiti huu wakati wowote.

b) Kujiodoa kutoka kwa kushiriki kwa masomo ya utafiti huu hayatahusisha adhabu au upotezaji wa faida zozoote zile iwapo za matibabu na utunzaji kutoka hospitalini.

c) Baada ya kusoma maelezo, tafadhali jisikie huru kuuliza maswali yoyote ambayo yatakuruhusu kuelewa wazi aina ya utafiti huu.

Kichwa: Kuenea kwa Unyogovu, shida za Matumizi ya Pombe na ushirika na ART kati ya wagonjwa wazima wanaohudhuria Kituo Kikuu cha Huduma ya Utunzaji, Hospitali ya Kaunti ya Busia.

Taasisi: Idara ya Saikolojia, Kitivo cha Tiba, Chuo cha Sayansi ya Afya Chuo Kikuu cha Nairobi

Mpelelezi Elizabeth Ipurong Oriama

Wasimamizi 1. Dk. Lincoln Khasakhala

2. Dk Teresia Mutavi.

Lengo la utafiti: Kuamua kiwango cha uenezi kwa Unyogovu, shida za Matumizi ya Pombe na ushirika na ART kati ya wagonjwa wazima wanaohudhuria Kituo Kikuu cha Huduma ya Utunzi, Hospitali ya Kaunti ya Busia.

Utaratibu wa Kuajiri: Wagonjwa wote wenye VVU / UKIMWI watakaokidhi vistahimili vya kushiriki watapata nafasi sawa ya kushiriki kwenye utafiti. Kuhusika katika masomo kutakuwa kwa hiariya mtu kibinafsi, kwa hivyo kuacha kuwa katika masomo ya utafiti huu hakutakuwa na athari za msingi. Vistahimili vya kustahiki vitahusisha wewe kuwa na umri wa miaka 18 na zaidi, kuwa tayari kukubali, kusajiliwa kama mwanachama wa kliniki anayepokea huduma za utunzaji na anaweza kuwasiliana kwa lugha maarufu ya Kiingereza au Kiswahili. Wale ambao ni wagonjwa sana kushiriki hawatazingatiwa kuwa sawa kushiriki kwatika masomo ya utafiti huu. Utajaza dodoso tatu ambazo zitakuwa zikitathmini unyogovu, matumizi ya vileo na uzingatiaji wa utaratibu wako wa matibabu ya Anti-Retroviral. Hakutakuwa na njia ya uvamizi inayotumika katika masomo ya utafiti huu.

Ziara: Hii ni ziara tu ambayo utashiriki wakati wa masomo. Kufuatilia baada ya utafiti kukamilika, stakabadhi zitafanywa na kuwasilishwa kwa Chuo Kikuu cha Nairobi cha Idara ya Saikolojia kwa idhini. Maoni juu ya matokeo ya utafiti utapewa wakati wa ziara yako ya baadaye/ifuatayo hospitalini.

Dhibitisho: Watao shiriki katika masomo haya ya utafiti watapewa idhini iliyopeanwa ambayo itakuwa na ishara wazi ya kusudi la utafiti, mpangilio wa ukusanyaji wa data, habari ya ushiriki wa hiari, hatari zinazoweza kutokea na faida za kushiriki katika utafiti, maswala ya usiri na kutokujulikana kwa habari za mshiriki, nambari za utumizi kwa maswali yoyote yanayohusiana na utafiti.

Faida: Ushiriki katika utafiti utampa mtu fursa ya kujifunza na kupimwa kwa unyogovu, shida za utumiaji wa pombe na kuwa na uelewa wa sababu zinazoathiri kufuata maagizo ya matumizi ya dawa za ARV. Wale walio na mapimo ambayo itahimiza kuwepo kwa shida hizi, watapelekwa kupata matibabu na usimamizi kuu wa Kituo Kikuu cha Huduma a Utunzi. Utambuzi wa mapema

wa hali ya kisaikolojia husaidia kuboresha uzingatiaji wa dawa. Pia kutakuwa na sehemu ya timu inayojitahidi kusaidia kuboresha utunzaji afya ya kisaikolojia ili kufaidi jamii.

Hatari: Washiriki watalazimika kujibu maswali ya kibinafsi juu ya maisha yao. Kwa sababu hii, maswali kadhaa yanaweza kuonekana kuwa ya kukera.

Maswali yanaweza kuamsha hisia zingine na matokeo yanaweza pia kuelekeza kwa mtu kuhitaji huduma ya afya ya kisaikolojia.

Wakati: Kujihusisha na shughuli nzima ya idhini, kukamilisha dodoso na uchunguzi wa uchunguzi utachukua takriban dakika 30 kwa kila mshiriki.

Usiri : Maneno ya kanuni na nambari za serial zitatumika kuhakikisha kutambuliwa kwa washiriki. Makaratasi yote yaliyo na habari ya watahiniwa yatawekwa kwenye baraza lenya kufuli na ufunguo ambao mtafiti tu ndiye anayeweza kupata..

Matokeo: Data isiyoweza kuambia mshirika itashirikiwa na Hospitali ya Rufaa ya Kaunti ya Nairobi na Busia.

Wasiliana: Ikiwa una maswali yoyote kuhusu utafiti au ushiriki katika utafiti huu, unaweza kupiga simu kwa wasimamizi wangu wowote

Dk. Lincoln Khasakhala 0722860485

Dk Teresia Mutavi 0722391236

Unaweza pia kuwasiliana na mtafiti 0707655771

Asante kwa ushiriki wako.

Jina la mtafiti - Elizabeth Ipurong Oriama

Wasiliana 0707655771

Idara ya Saikolojia

Kitivi cha Tiba

Chuo cha Sayanai ya Afya

Chuo Kikuu cha Nairobi

Usiri wa mashiriki---------- Tarehe ya Mshiriki ----------

Taarifa ya vitu:

Mimi, najitolea kushiriki katika utafiti huu ambao asili na madhumuni yake nimeelezewa na Elizabeth Ipurong Oriama. Ninaelewa kuwa huu ni chaguo langu. Ikiwa nitabadilisha mawazo yangu, ninaelewa kuwa nitaendelea kupata huduma ya matibabu katika Kituo hiki cha Huduma ya Utunzi.

Saini ya mada ----------

Tarehe ----------

Saini ya Shahidi ----------

Tarehe ----------

Saini ya mtafiti ----------

Tarehe ----------

Dodoso ya Maadili ya Jamii

Utangulizi

Dodoso hili limetengenezwa kukusanya data kuhusu kuangalia upungufu wa Unyogovu, shida za Matumizi ya Pombe na ushirika na ART kati ya wagonjwa wazima wanaohudhuria Kituo cha Kutunzwa, Hospitali ya Kaunti ya Busia.

Tafadhali usiandike jina lako au usipe habari yoyote ya kibinafsi katika dodoso hili.

Maagizo

Jibu maswali kwa kuweka alama (√) kwenye sanduku linalofaa au uandike kwenye nafasi uliotengwa.

SEHEMU YA 1: Bio-Takwimu (Maelezo ya kibinafsi).

1. Jinsia

    a) Mwanaume

    b) Kike

2. Umri katika miaka

    a) 18-30

    b) 31-40

    c) 41-50

    d) 51 na kuendelea

3. Dini yako ni gani?

    a) Katoliki

    b) Mprotestanti

    c) Mwislamu

    d) Kuzaliwa upya / kuokolewa

    e) Hakuna

    f) Nyingine (taja) _____

4. Ni nini bora kinachoelezea hali yako ya uhusiano?

a) Ubinafsi

b) Katika uhusiano

c) Kuishi kwa pamoja

d) Kuolewa

e) Talaka

f) Utengano

g) ujane

h) Nyingine_____

5. Unaishi wapi?

a) Eneo la Mjini (katika mji)

b) Eneo la Vijijini (nje ya mji)

Kwa a) na b) Taja _____

6. Unaishi na nani?

a) peke yako

b) Na wazazi

c) Na ndugu

d) Na mwenzi wa uhusiano

e) Na rafiki au marafiki

7. Je! Hali yako ya ajira ni ipi?

a) Kujiajiri

b) Ajira rasmi (Muda kamili)

c) Ajira rasmi (kwa muda)

d) Kutokuwa na kazi

e) Mwanafunzi

f) Mstaafu

g) Nyingine_____

8. Ikiwa swali la 7 umejibu a), b) au c), kazi yako ni gani?_____

9. Je, bracketi yako ya Mapato ni gani?

a) 1,000-10,000

b) 10,001- 20,000

c) 20,001-30,000

d) 30,001-40,000

e) 40,001-50,000

f) 50,001 na zaidi

10. Ulijiaje juu ya hali yako ya HIV?

a) Kujihusisha na VCT

b) Kutajwa na mwenzi wa ngono

c) Uelekezaji na mfanyikazi wa matibabu kwa sababu ya shida za kiafya

d) Kutajwa na mtu wa familia

e) Nyingine_____

11. Habari ilivunjwaje kwako?

a) Na mshauri wa VCT

b) Na mfanyikazi wa matibabu baada ya ushauri

c) Na muuguzi baada ya ushauri

d) Hakuna ushauri wowote uliyopewa

e) Nyingine_____

12. Aina ya matibabu uliyotolewa

a) Ushauri tu

b) Matibabu ya nje bila kulazwa

c) Matibabu ya kulazwa

d) Matibabu ya ART

e) Kutumwa kwa CCC

f) Nyingine _____

13. Je! Umekuwa kwenye ART kwa muda gani?

a) Chini ya mwaka

b) Zaidi ya mwaka

c) Zaidi ya miaka miwili

d) Zaidi ya miaka mitano

e) Zaidi ya miaka kumi

14. Je! Hesabu yako ya hivi karibuni ya virusi ni ngapi?_____

15. Je! Hesabu yako ya CD4 ya hivi karibuni ni ngapi?_____

16. Je! Uko regime gani ya dawa?

Mstari wa kwanza

Mstari wa pili

Mstari wa tatu

CASE Adherence Index Questionnaire: Kiswahili Version

Maswali Kuhusu Kutumia Madawa Kulingana Na Maagizo

Tafadhali tia alama ya mviringo kwenye jibu

1. Mara ngapi hujisikia mwenye ugumu wa kumeza madawa yako yakuzuia makali ya virusi kwa wakati unaostahili. Yaani kumaanisha kuwa isizidi au kupunguza masaa mawili kulingana na saa Daktari alikuelezea
    4. Huwa sisikii ugumu
    3. Mara chache
    2. Mara nyingi
    1. Kila wakati
2. Kwa kawaida, ni mara ngapi kwa WIKI/JUMA unaweza kusema huwa unakosa kunywa dawa kwa kufuata Maagizo hata mara moja
    1. Kila siku
    2. Siku 4 hadi 6 kwa wiki
    3. Siku 2 au 3 kwa wiki
    4. Mara moja kwa wiki
    5. Chini ya mara moja kwa wiki
    6. Sijawahi
3. Ni lini ulikosa kunywa dawa kwa kufuata maagizo hata mara moja?
    1. Wiki hii
    2. Wiki moja au mbili zilizopita
    3. Wiki 3 hadi 4 zilizopita
    4. Mwezi 1 hadi 3 iliyopita
    5. Zaidi ya miezi mitatu
    6. Sijawahi

Beck's Inventory: Kiswahili Version

Yafuatayo ni mafungu ya sentensi. Tafadhali soma kila fungu kwa makini. Chagua kutoka katika kila fungu sentensi ambayo yaelezea vyema ulivyokuwa ukihisi juma lililopita na unavyohisi leo. Ashiria sentensi moja au zaidi ya moja uliyochagua katika kila fungu kwa kuweka alama mviringo juu ya nambari ya sentensi hiyo. Hakikisha umesoma sentensi zote katika kila fungu kabla ya kuchagua sentensi iliyo sambamba na unavyohisi

1.

0. Sina huzuni

1. Nina huzuni

2. Nina huzuni wakati wote na siwezi kijiondoa katika hali hii ya huzuni

3. Nina huzuni sana mpaka siwezi kustahimili/kuvumilia

2.

1. Sijavunjika moyo hasa na siku za usoni

2. Nahisi nimevunjika moyo na siku za usoni

3. Nahisi sina ninalo tarajia siku za usoni

4. Nahisi nimekata tamaa ya siku za usoni, na naona mambo hayawezi kuwa bora Zaidi

3.

1. Sijihisi kama nimeanguka maishani

2. Nahisi nimeanguka maishani zaidi ya mtu wa kawaida

3. Nkiangalia maisha yangu yaliopita naona nimeanguka sana

4. Nahisi nimeanguka kabisa maishani

4.

1. Naridhika na mambo kama ilivyo kawaida yangu kitambo

2. Sija furahi mambo kama nilivyokuwa nikifurahia kitambo

3. Sitosheki tena kikamilifu na jambo lolote kama kitambo

4. Sitosheki wala sichangamshwi na chochote tena

5.

1. Sihisi hasa kama nina hatia fulani

2. Nahisi nina hatia wakati mwingine

3. Nahisi nina hatia wakati mwingi

4. Nahisi nina hatia wakati wote

6.

1. Sihisi kama nina adhibiwa

2. Nahisi kama naweza kuadhibiwa

3. Natarajia kuadhibiwa

4. Nahisi nina adhibiwa

7.

1. Sihisi kama nimeikasirikia nafsi yangu

2. Nimeikasirikia nafsi yangu

3. Najidharau

4. Najichukia

8.

1. Sihisi kama mimi ni mbaya zaidi ya mtu yeyote yule

2. Najisuta (kujitoa makosa) sana katika makosa yangu ama udhaifu wangu

3. Najilaumu wakati wote kwa makosa yangu

4. Najilaumu kwa ovu lolote linalo tendeka

9.

1. Sina wazo lolote kujiua

2. Nina wazo la kujiua

3. Ningetaka kujiua

4. Nitajiua nikipata nafasi

10.

1. Silii siku hizi zaidi ya vile ilivyo kawaida yangu

2. Nalia siku hizi zaidi ya ilivyokuwa kawaida yangu

3. Nalia wakati wote siku hizi

4. Nilikuwa nikiweza kulia, lakini sasa hata nikitaka kulia siwezi

11.

1. Sikasirishwi kwa urahisi siku hizi zaidi ya ilivyo kawaida yangu
2. Nakasirishwa kwa urahisi zaidi ya ilivyokuwa kawaida yangu
3. Nahisi nimekasirishwa wakati wote siku hizi
4. Sikasirishwi kamwe na mambo ambayo yalikuwa yakinikasirisha

12.

1. Sijapoteza hamu ya kujihusisha au kujumuika na watu
2. Hamu yangu ya kujihusisha na watu imepungua zaidi ya ilivyokuwa
3. Nimepoteza sana hamu yangu ya kujihusisha na watu
4. Nimepoteza hamu yangu yote ya kujihusisha na watu

13.

1. Ninafanya uamuzi kuhusu jambo lolote kama kawaida
2. Ninahairisha kufanya uamuzi zaidi ya vile nilivyokuwa nikifanya
3. Nina uzito mkubwa wa kufanya uamuzi kuliko hapo awaki
4. Siwezi tena kufanya uamuzi wa jambo lolote lile

14

1. Sihisi kuwa naonekana vibaya zaidi ya nilivyokuwa
2. Nina wasi wasi kuwa naonekana sivutii
3. Ninahisi kuwa kuna mabadiliko yasio ondoka kwenye umbo langu yanayofanya nisivutie
4. Nina amini kuwa nina sura mbaya

15.

1. Nawaza kufanya kazi kama vile ilivyokuwa hapo awali
2. Nilazima nifanye bidii, ndipo nianze kufanya jambo lolote
3. Inabidi nijilazimishe sana ili niweze kufanya jambo lolote
4. Sitaweza kabisa kufanya kazi yoyote

`16.

1. Ninalala kama kawaida yangu

2. Silali vyema kama nilivyo kuwa nikilala hapo awali

3. Naamka mapema kwa saa limoja au masaa mawili, ambayo sio kawaida yangu, halafu ni vigumu kupata usingizi tena

4. Naamka mapema zaidi ya masaa mawili, ambayo sio kawaida yangu, halafu siwezi kupata usingizi tena

17.

1. Sichoki zaidi ya nilivyokuwa nikichoka hapo awali

2. Nachoka kwa urahisi zaidi ya kawaida yangu

3. Nachoshwa (Nachokeshwa), karibu na kila jambo ninalofanya

4. Ninachoka sana hata siwezi kufanya lolote

18.

1. Hamu yangu ya chakula sio mbaya zaidi ya vile ilivyokuwa hapo awali

2. Hamu yangu ya chakula sio mbaya zaidi kama vile ilivyokuwa hapo awali

3. Hamu yangu ya chakula ni mbaya zaidi siku hizi

4. Sina tena hamu ya chakula hata kidogo

19.

1. Sijapunguza uzito wa mwili wa kuonekana hivi karibuni

2. Nimepunguza uzito wa mwili zaidi ya kilo mbili

3. Nimepunguza uzito wa mwili zaidi ya kilo tano

4. Nimepunguza uzito wa mwili zaidi ya kilo saba

20.

1. Sina wasiwasi usio wa kawaida kuhusu haki yangu ya afya

2. Nina wasiwasi kuhusu shida za mwili kama vile maumivu hapa na pale; au shida ya tumbo,au kufunga choo

3. Nina wasiwasi kuhusu matatizo ya mwili mpaka inakuwa ni vigumu kuwaza jambo lengine lolote

4. Nina wasiwasi kuhusu matatizo ya mwili mpaka siwezi kuwaza jambo lengine lolote

21.

1. Sijaona mabadiliko yoyote hivi karibuni kuhusu hamu yangu ya kufanya mapenzi

2. Hamu yangu ya kufanya mapenzi imepungua zaidi ya vile ilivyokuwa

3. Hamu yangu ya kufanya mapenzi imepungua sana siku hizi

4. Nimepoteza kabisa hamu yangu ya kufanya mapenzi

AUDIT Screening Tool: Kiswahili Version

1. Je, ni mara ngapi una kunywa vinywaji ambayo yana pombe?
    (0) Sija wahi (ruka hadi swali la 9-10)
    (1) Mara Moja Kwa Mwezi Au Hata Mara Chache Zaidi
    (2) Mara Mbili Hadi Mara Nne Kwa Mwezi
    (3) Mara Mbili Hadi Tatu Kwa Wiki
    (4) Mara Nne Au Zaidi Kwa Wiki
2. Ni vinywaji ngapi yanayo pombe ambayo unakunywa kwa kawaida? [Kwa siku moja]
    (0) moja au mbili
    (1) Tatu au Nne
    (2) Tano au sita
    (3) Saba, nane, au tisa
    (4) Kumi au Zaidi
3. Ni mara ngapi unakunywa vinywaji 6 au zaidi ya pombe kwa wakati mmoja?
    (0) Sija wahi
    (1) Mara chache kuliko mara moja kila mwezi
    (2) Kila mwezi
    (3) Kila wiki
    (4) Kila siku au karibu kila siku
4. Ni mara ngapi kwa mwaka uliopita, umejipata kushindwa kusita kunywa pombe kila unapoanza kunywa?
    (0) Sija wahi
    (1) Mara chache kuliko mara moja kila mwezi
    (2) Kila mwezi
    (3) Kila wiki
    (4) Kila siku au karibu kila siku
5. Ni mara ngapi kwa mwaka uliyopita umejipata ukilegea/ ukishindwa kutimiza majukumu yako kwa sababu ya ulevi?
    (0) Sija wahi
    (1) Mara chache kuliko mara moja kila mwezi
    (2) Kila mwezi
    (3) Kila wiki
    (4) Kila siku au karibu kila siku
6. Je, ni mara ngapi kwa mwaka huu uliyopita, umejipata umekosa fahamu ya lolote lilicho fanyika usiku uliyo pita kwa sababu ya ulevi?
    (0) Sija wahi
    (1) Mara chache kuliko mara moja kila mwezi
    (2) Kila mwezi
    (3) Kila wiki

(4) Kila siku au karibu kila siku

7. Je, ni mara ngapi kwa mwaka huu uliyopita, umejipata ukitamani kunywa pombe asubuhi “kama kifungua macho” iliuweze kuendelea na shughuli zako?

(0) Sija wahi

(1) Mara chache kuliko mara moja kila mwezi

(2) Kila mwezi

(3) Kila wiki

(4) Kila siku au karibu kila siku

8. Je, ni mara ngapi kwa mwaka uliyopita, umejipata ukihisi huzuni au kuwa na hisia za mtu aliyefanya hatia baada ya kunywa pombe?

(0) Sija wahi

(1) Mara chache kuliko mara moja kila mwezi

(2) Kila mwezi

(3) Kila wiki

(4) Kila siku au karibu kila siku

9. Je wewe au mtu mwingine amewahi pata majeraha kwa sababu yako kunywa pombe?

(0) hapana

(2) Ndio, lakini siyo mwaka huu umepita

(4) Ndio, mwaka huu umepita

10. Je, kuna jamaa yako, rafiki, daktari au muhuduma wa afya mwengine ambaye ameonyesha kushangaa na kukunywa pombe kwako na hata kuhisia kuwa upunguze kunywa pombe?

(0) hapana

(2) Ndio, lakini siyo mwaka huu umepita

(4) Ndio, mwaka huu umepita