PREVALENCE OF DEPRESSION AND ITS ASSOCIATION TO INTERNALIZED STIGMA AND OTHER PSYCHOSOCIAL FACTORS AMONG WOMEN LIVING WITH HIV IN TANZANIA.

Diana Humphrey Kisamo (B.A.Psych)

MSc (Clinical Psychology) Dissertation
Muhimbili University of Health and Allied Sciences
October, 2021

Muhimbili University of Health and Allied Sciences
Department of Psychiatry and Mental Health

PREVALENCE OF DEPRESSION AND ITS ASSOCIATION TO INTERNALIZED STIGMA AND OTHER PSYCHOSOCIAL FACTORS AMONG WOMEN LIVING WITH HIV IN TANZANIA.

By

Diana Humphrey Kisamo

A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree of Master of Science (Clinical Psychology) of

Muhimbili University of Health and Allied Sciences
October, 2021

CERTIFICATION

The undersigned certifies that she has read and hereby recommends for examination by Muhimbili University of Health and Allied Science a dissertation entitled; **"Prevalence of depression and it's association to internalized stigma and other psychosocial factors among women living with HIV in Tanzania"**, in (partial) fulfillment of the requirements for the degree of Masters of Science in Clinical Psychology of Muhimbili University of Health and Allied Sciences

……..

Dr. Saidi Kuganda, (MD,Mmed-Psychiatry)

(Supervisor)

……..

Date

DECLARATION AND COPYRIGHT

I, **Diana Humphrey Kisamo** declare that this **dissertation** is my own original work and that it has not been presented and will not be presented at any other university for a similar or any other degree award.

Signature …… **Date** ……

ACKNOWLEDGEMENTS

I am overwhelmed in all humbleness and gratefulness to acknowledge my depth thanks to almighty God for the wisdom he bestowed upon me, peace of mind, and good health which made this work possible.

I would like to convey my heartiest thanks to Mr. Mrema Kilonzo, Dr. Michael Relf, and Dr. Laura Nyblade for motivating me to study harder and for the learning opportunities they provided me. The completion of this study could not have been accomplished without their support.

I would like to express my deep and sincere gratitude to my supervisor Dr. Saidi Kuganda for his invaluable guidance, comments, encouragement, constructive criticism which have contributed to the completion of this research.

I feel to acknowledge my deep sense of gratitude to Professor Kaaya, Dr. Ester, and Dr. Likindikoki for their encouraging guidance and kind supervision in the completion of this research.

I would like to appreciate the support of Ms. Rachel Jared Mtei, Mr. Gideon Stephen for their careful and precious guidance which enabled me to put these ideas together.

I am greatly thankful to my post-graduate colleagues and the teaching staff in the Department of Psychiatry and Mental Health for their moral support and encouragement.

Last, but not least, I express my gratitude to all participants who volunteered their time and patience to participate in this study, of which without them, it wouldn't be possible to have the data for completion of this research.

May God's mercy, grace, and favor be upon you

DEDICATION

I dedicate this work to my beloved family, my mother, Mrs. Elizabeth Kisamo; my father, Mr. Humphrey Kisamo; and my dear sisters Glory Kisamo and Jackline Kisamo for their love, prayers, and support throughout my life.

ABSTRACT

Background: Globally in 2019 there was an estimate of 19.2 million women aged 15 and older living with HIV and the prevalence of depression among people living with HIV/AIDS was 31%. The prevalence of depression in South Wollo Ethiopia was high among women (21.07%) than men (18.3%) living with HIV. In a study done in the United States, women living with HIV had experienced more negative effects of HIV internalized stigma than men and increased levels of HIV-related stigma were associated with more severe depressive symptoms.

Aim of the study: The aim of the study was to determine the prevalence of depression and its association to internalized stigma and other psychosocial factors among women living with HIV in Tanzania.

Materials and methods: This was a healthy facility-based study that used a quantitative approach and a cross-sectional descriptive design. The study population was of women living with HIV aged 18 and above attending the selected HIV/AIDS care and treatment clinics in Dar-es-salaam and Tanga region in Tanzania. Non-proportionate stratified sampling and systematic sampling technique was used to select participants for data collection. A tablet device with instruments such as Internalized HIV stigma Scale, PHQ-9, Rosenberg Self-esteem scale, coping self-efficacy scale, and a tool for ART-adherence self-report for HIV care preloaded in Kiswahili and English were used.

Data were analyzed using SPSS version 23.0 bivariate association was calculated using the Chi-square test to determine the presence of a significant association. All variables were then subjected for multiple logistic regression for identification of independent associated risk factors for depression. Odds ratio and 95% confidence interval were reported. A variable with a p-value of less than 0.05 was considered statistically significant.

Results: A total of 210 women were studied the mean age of women was 31.55 years with a standard deviation of 12.32. Among 210 women who participated in this study 38.1% had depression, 90.5% had low self-esteem and 20% had poor ART-adherence, 51% had high internalized stigma and 51.9 % had low self-efficacy. In the bivariate analysis age, marital status, level of education, household income, self-esteem and coping self-efficacy had no significant association with depression. Internalized stigma and ART-adherence were significantly associated with depression in the bivariate analysis, 51.4% of the participants with high internalized stigma had depression compared to 24.3 % who had low internalized stigma and the difference in the proportion of participants were statistically significant (p= <0.001). Also 61.9% of participants who had poor ART-adherence had depression compared to 32.1% who had good ART-adherence and the difference in the proportion of participants were statistically significant (p=<0.001). In the Multivariate analysis internalized stigma was significantly associated with depression (AOR=2.56, CI =1.36-4.83; P=0.004) and ART-adherence was significantly associated with depression (AOR= 3.13, CI=1.43-6.83; P=0.004).

Conclusion: The findings revealed that the prevalence of depression was 38.1%. Internalized stigma and ART-adherence were significantly associated with depression**.** It is recommended that screening for depression should be done at the CTC clinics and early interventions for internalized stigma and depression should be done at the CTC clinics.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

ART	Antiretroviral Therapy
CCT	Care and Treatment Clinic
IRB	Institutional Review Board
MUHAS	Muhimbili University of Health and Allied Sciences
NIMR	National Institute for Medical Research (Tanzania)
PHQ-9	Patient Health Questionnaire
PLWH	People Living with HIV/AIDS
PLWHA	People Living with HIV
SPSS	Statistical Package for Social Sciences version 23.0
SSA	Sub-Saharan Africa
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization
WLWH	Woman/Women Living with HIV

DEFINITIONS OF TERMS

Internalized HIV stigma refers to endorsing negative feelings and beliefs associated with HIV and applying them to the self (Earnshaw et al., 2013)

Enacted HIV stigma is directly experienced through discrimination, stereotyping, and/or prejudice by others because of their HIV status. (Earnshaw & Chaudoir, 2009)

Anticipated HIV stigma is when the person's concerns about discrimination or adverse events that might happen if his/her HIV status becomes known by others. (Stangl et al., 2019)

Perceived stigma also known as community stigma refers to how much people living with HIV believe that the public stigmatizes someone with HIV. (Derlega et al., 2002)

Depression is a common and serious mental illness that negatively affects how you feel, the way you think and how you act. Depression causes feelings of sadness and/ or a loss of interest in activities you once enjoyed. It can lead to a variety of emotional and physical problems and can decrease your ability to function at work and at home (American Psychiatric Association, 2013).

ART-adherence refers to patient's ability to follow a treatment plan, take medications at prescribed times and frequencies, and follow restrictions regarding food and other medications (Schönnesson et al., 2006)

Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1978)

Self-esteem refers to an individual overall positive evaluation of the self. It consists of an individual respecting himself and considering himself worthy (Rosenberg, 1965)

People Living with HIV refer to people who are known to have been infected with the human immunodeficiency virus (HIV), the pathogen that causes AIDS.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Human Immunodeficiency Virus is an infection that attacks the body's immunity system specifically the white blood cells called the CD4+ T-cells. HIV destroys the CD4 cell weakening the body's immune system against opportunistic infections (WHO, 2020). HIV is transmitted through having unprotected vaginal and anal sex through contact with blood, semen, pre-seminal fluid, rectal fluids, vaginal secretions, anal sex, or sharing injection equipment or sharp objects with a person living with HIV (PLWH), or from mother to baby during pregnancy, birth, breast feeding, and through contaminated blood transfusions.

Globally in 2019, there was an estimate of 19.2 million women aged 15 and older who were living with HIV. The number of women living with HIV (WLWH) in sub-Saharan African (SSA) is 15.9 million compared to 9.8 million men. Data has shown that one out of every five new HIV infections happens among young women aged 15 to 24 in SSA. The geographic areas with the highest prevalence of HIV in SSA is the Eastern and Southern areas with a range of 18.4 to 23.0 million adults and children <15 years living with HIV of which 12.3 million were women and 7.3 million were men aged 15 and above (UNAIDS, 2020). In 2019, The United Republic of Tanzania had 1.7 million people who were living with HIV. The number of women living with HIV aged 15 and older was 980,000 compared to 630,000 men (UNAIDS, 2020).

Depression is a common mental disorder worldwide; in 2015, it was estimated to be the third leading cause of disability (Vos et al., 2016). Globally, in 2015, it was estimated that 4.4% of the global population experienced a depression disorder with women having a higher prevalence compared to men (5.1% compared to 3.6%). Depression rates vary from 3.6% in the Western Pacific Region to 5.4% in the African Region (Sandmire et al., 1976) . Depression occurs two to three times higher in people living with HIV/AIDS than in the general population (Abas et al., 2014).

Globally the prevalence of depression among people living with HIV/AIDS was 31% (Rezaei et al., 2019). Studies done using internationally accepted diagnostic criteria for major depression which were done in Sub-Saharan Africa reported a prevalence of 8% of depression among people living with HIV (Gaynes et al., 2012; Kinyanda et al., 2011)**.** In another study done in (SSA), where the HIV and AIDS burden is enormous the prevalence of depressive symptoms was high ranging from 9 to 32% in People Living with HIV/AIDS on ART and in untreated and mixed ones (Bernard et al., 2017). In Rural Kilifi Kenya, the prevalence of depression was 13.8% (Nyongesa et al., 2019). As in the general population, the prevalence of depression appears to be higher among women living with HIV (21.07%) than men living with HIV(18.3%; Seid et al., 2020)

In Tanzania Dar es salaam region, the prevalence of depression among women living with HIV was 57.8% (Sudfeld et al., 2017). In Mwanza region, the prevalence of depression among people living with HIV was found to be 24% (Mwita et al., 2019). In Tanga region, the prevalence of depression was 2.7% in the Rural area of Muweza (Marwick & Kaaya, 2010).

Stigma is the unfair and unjust treatment of an individual based on real or perceived status or attribute for example medical condition or belonging or being perceived to belong to a particular group (UNAIDS, 2003). HIV-related stigma has four forms which are internalized, enacted, anticipated, and perceived stigma (Turan et al., 2017). Studies have shown that the prevalence of internalized stigma was higher among women than men living with HIV(Baugher et al., 2017; Colbert et al., 2010; Gonzalez et al., 2009). In a study done in Burkina Faso, Kenya, Malawi, and Uganda, the prevalence of internalized stigma among people living with HIV was the highest in in Burkina Faso at 45% and lowest in Malawi at 9.6%(Neuman, 2013). The level of HIV stigma in Tanzania is high with independent associations to poverty, less education, and living in rural areas (Amuri et al., 2011).

Studies have shown that there is a significant association between internalized stigma, poor antiretroviral treatment adherence, avoiding disclosure of HIV status, poor self-efficacy, and poor quality of life and depression among people living with HIV (Eller et al., 2014; Li et al., 2011; Rao et al., 2012; Relf et al., 2019). According to the 2013 Tanzanian Stigma and Discrimination Survey among people living with HIV, it was documented that high rate of internalized stigma led to feelings of guilt, self-blame, and low self-esteem. These outcomes were frequently higher for females who were more likely to fear being gossiped about, verbally insulted, harassed and/or threatened (NACOPHA, 2013)

1.2 Problem Statement

Studies have shown that depression prevalence among people living with HIV in high-income countries ,middle -income countries and low-income countries ranges from 12.8 -78% (Uthman et al., 2014). The prevalence of depression in People living with HIV in sub-Saharan Africa ranged from 9% to 32% (Bernard et al., 2017) the prevalence of depression among women living with HIV in Tanzania in Dar-es-salaam region, was 57.8 % (Sudfeld et al., 2017). Depression among people living with HIV is higher among women than men (Seid et al., 2020) and it is associated with reduced treatment adherence, increased disease progression , mortality (Uthman et al., 2014), poor self-efficacy, poor self-esteem (Eller et al., 2014).

Increased levels of HIV-related stigma were associated with more severe depressive symptoms (Rao et al., 2012) In Tanzania, PLWH who reported internalized stigma experienced low self-esteem, self-blame, and feeling ashamed. Despite having data on the prevalence of depression among women living with HIV and the prevalence of internalized stigma among PLWH statistics on the prevalence of internalized stigma, the association between internalized stigma and depression among women living with HIV is not available in Tanzania. In response to this problem, this study aims to determine the prevalence of depression and its association with internalized stigma and other psychosocial factors among women living with HIV in Tanzania.

HIV internalized stigma may be due to families and communities diminished acceptance of the an individual's illness, less likelihood of the patient ever attending an HIV support group,

communities being less tolerant of women living with HIV than of their male counterparts resulting in women being labeled as promiscuous, and fear of self-disclosure (Hasan et al., 2012).

Women living with HIV tend to experience more negative effects of HIV internalized stigma than men (Baugher et al., 2017) . HIV-related stigma is one of the greatest barriers to preventing new infections of HIV, is a major cause hindering efforts in HIV prevention programs, testing and access to treatment. (The Joint United Nations Programme on HIV/AIDS, 2018). Those reporting higher levels of HIV internalized stigma are less likely to receive medical care for HIV and adhere to ART (Turan et al., 2017), report a lower quality of life (Parcesepe et al., 2020) and lower self-disclosure (Relf et al., 2019).

1.3 Theoretical Framework

Stress has been viewed as a stimulus, as a response, and as a transaction. Stress as a stimulus was introduced in the 1960's by Rahe and Holmes where stress was viewed as a significant life event or changes that demand response, adjustment, or adaptation. Holmes and Rahe viewed stress as the cause of an experience rather than the experience itself. Stress as a stimulus assumes: change is inherently stressful life events demand the same levels of adjustment across the population there is a common threshold of adjustment beyond which illness will result. Stress was viewed as an independent variable (Harada & Chen, 1984).

In the proposed theoretical model, it is hypothesized that the independent variable or the significant life events to be HIV internalized stigma which may cause someone to respond by having depression. HIV internalized stigma may impact someone's psychological wellbeing thus affecting their self-esteem, self-efficacy, potentially leading to depression. As a result of depression and internalized stigma, there is the potential for diminished ART adherences. Socio-demographic factors such as age, marital status, level of education, employment can also be associated with depression.

Stress as a response was introduced by Hans Selye in 1956 it was described as a response or a dependent variable. Stress was viewed as a physiological response pattern with three concepts: stress as a defensive mechanism, stress follows the three stages of (alarm, resistance and exhaustion) and If stress is prolonged or severe it could result in disease of adaptation or even death (Harada & Chen, 1984). In this proposed theoretical model having depression is hypothesized as a stressor and having HIV internalized stigma is considered as the response to the stressor or the dependent variable. A woman living with HIV with depression may have HIV internalized stigma as a defense mechanism or as a resistance to either combat or avoid the stressor or accommodate the stress which can lead to adaptive diseases. Depression may impact someone's psychologically wellbeing thus affecting their self-esteem, self-efficacy, ART-adherence. Socio-demographic factors such as age, marital status, level of education, employment have been linked with HIV-internalized stigma in some studies.

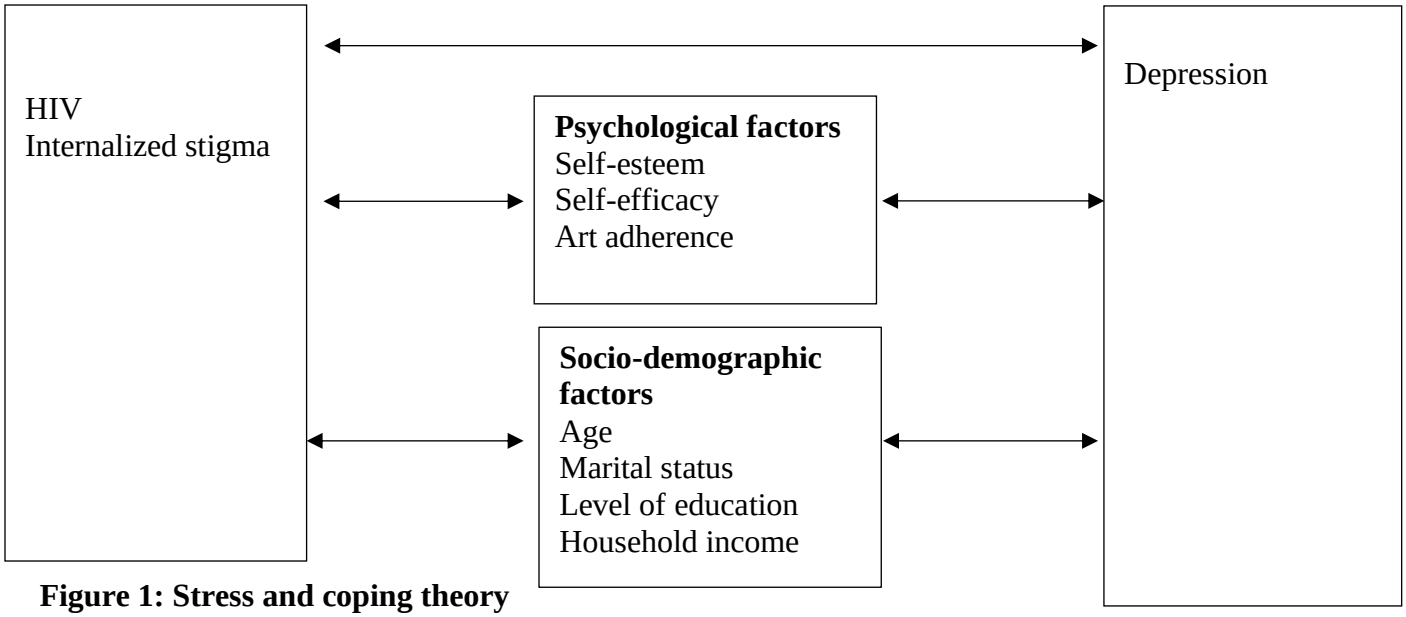


Figure 1: Stress and coping theory

1.4 Rationale of the Problem

The purpose of this study is to determine the prevalence of depression and its association to internalized stigma and other psychosocial factors among women living with HIV in Tanzania. The relationship between internalized stigma and depression with control of other psychological factors such as self-esteem, self-efficacy and ART-adherence is not clear. Furthermore, there are not visible study in the region that looked at this association.

The findings from this study may increase knowledge on understanding of depression among people living with HIV and how it is linked with one's negative attitude, belief and feelings integrated to self that are associated with HIV. This knowledge will better inform interventions for depression and stigma reduction among the population of women living with HIV. Focusing on reduction of HIV related internalized stigma may reduce the risk of one to get depression among other things.

This study is also in partial fulfillment of the requirements for the Masters of Science clinical psychology program of the Muhimbili University of Health and Allied Sciences (MUHAS)

1.5 Broad research questions

What is the prevalence of depression and its association to internalized stigma and other psychosocial factors among women living with HIV in Tanzania?

1.5.1 Specific research questions

1. What is the prevalence of depression among women living with HIV in Tanzania?
2. Is depression associated with socio-demographic factors among women living with HIV in Tanzania?
3. Is depression associated with psychological factors (internalized stigma, self-esteem, self-efficacy, ART adherence) among women living with HIV in Tanzania?

1.6 Broad Objective

To determine the prevalence of depression and its association to internalized stigma and other psychosocial factors among women living with HIV in Tanzania.

1.6.1 Specific Objective

1. To determine the prevalence of depression among women living with HIV in Tanzania.
2. To determine the association between depression and social-demographic factors among women living with HIV in Tanzania
3. To determine the association between depression and psychological factors (Internalized stigma, self-esteem, self-efficacy, ART-adherence) among women living with HIV in Tanzania.

1.7 Research Hypothesis

1.7.1 Null Hypothesis

There is no association between depression and internalized stigma, and other psychosocial factors among women living with HIV in Tanzania.

1.7.2 Alternative Hypothesis

There is an association between depression and internalized stigma, and other psychosocial factors among women living with HIV in Tanzania.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Prevalence of depression.

Mental health problems accounted for 13% of the global burden of disease and are highly linked with infectious diseases like HIV (FDREMOH, 2011; Marcus et al., 2012). Due to the stigmatizing nature of HIV, depressive disorder is the most common mental disorder and was three times higher among people living with HIV (DeJean et al., 2013) . Globally in 2018, it was estimated that 31% of people living with HIV were living with depression (Rezaei et al., 2019).

The prevalence of depression among people living with HIV is higher among women compared to that of men (Egbe et al., 2017; Relf et al., 2019; Seid et al., 2020). A study in Canada among women living with HIV reported 44% prevalence of depression which was higher compared to that of men using the Center for Epidemiologic studies Depression Scale (CES-D) was used to assess for depressive symptoms (Aljassem et al., 2016). Depression is four times higher in women living with HIV (19.4%) than in women who are not living with HIV (4.8%). A study in Coastal South India reported a prevalence of depression of 51.1% among 137 women living with HIV/AIDS whereby depression was measured using the Beck Depression Inventory (BDI) (Unnikrishnan et al., 2012)

The prevalence of depression is high in developing and under-developed countries compared to developed countries (Chang et al., 2018; Egbe et al., 2017; Feuillet et al., 2017; Hellmuth et al., 2017). Depression is highly prevalent in Ethiopia and it is one of the common psychiatric disorders that affect women (Asmare Eshetu & Meseret, 2015) . A study in Jijiga town Ethiopia reported a prevalence of depression of 32.5% among women living with HIV. The Hospital Anxiety and Depression Scale (HADS) was used to screen women participants, it is composed of seven questions each for anxiety and depression (Yousuf et al., 2020).

Experiences of stigma and low social support are significant risk factors for depression among women. A study in Tanzania in Dar-es-Salaam region with women living with HIV initiating antiretroviral therapy reported a prevalence of depression of 57.8%; in this study, depression symptoms were assessed using a Tanzanian adapted and validated version of the Hopkins Symptom Checklist (HSCL-25) with a 25-cut-off point (Sudfeld et al., 2017). A study in Mwanza region among people living with HIV reported that women were at a higher risk of depression with a prevalence of 27.4% compared to men who had a depression prevalence of 14.1% , the prevalence of depression was measured using the Beck Depression Inventory (Mwita et al., 2019).

2.2 Prevalence of internalized stigma

Globally the impacts of stigma and discrimination has grown considerably, (Tran et al., 2019). Expressing outcomes of stigmatization and discrimination people suffered from internal stigma which was higher in female than men (NACOPHA, 2013). Internalized stigma, is a global public health threat because it keeps people from accessing HIV and other health services, makes it difficult for HIV testing, treatment, prevention and sustainability of health interventions (Pantelic et al., 2019).

Stigma scores are higher among persons who are dissatisfied with their social support. Fearing rejection from family and friends can lead a person living with HIV not to disclose their HIV status which can deprive them of social support (Wohl et al., 2011) .A study on the prevalence of internalized HIV-related stigma among PLWH in the United States reported an average stigma score of 2.4 (95% CI = 2.4–2.5) out of a possible score of 6; in this study, females had the highest average stigma scores with the average of 3.0 while males had an average score of 2.6 . Internalized HIV-related stigma was measured using the modified six-item Internalized AIDS-Related Stigma Scale (Baugher et al.2013).

Stigma is manifested in prejudice, discounting, discrediting and discrimination directed at people perceived to have HIV. In Indian hospitals, stigma manifest when health workers inform family members of an individual's HIV status without consent, burning their bedding when discharged, charging them more and using gloves during all interactions. Internalized stigma was also related to delay in seeking care and fear of disclosure. A study in South India in seven districts of Tamil reported a prevalence of internalized stigma of 28.8% among people living with HIV. Stigma was measured using the Berger Scale which is a 40-item , four-point scale and grouped stigma into 4 categories which are personalized stigma (self-stigma), perceived public attitude, disclosure concerns, and negative self-image (Charles et al., 2012).

Sub-Saharan is home to 70% of the world's PLWH (Stangl et al., 2013). PLWH may devalue themselves because they belong to a group that they believe most people view negatively, by fueling fear from others internalized stigma may lead to harmful responses such as secrecy, withdrawal and isolation (Tsai et al., 2013) . A study in Sub-Saharan Africa reported that the prevalence of internalized stigma among people living with HIV ranged between 26.9% and 66% (Pantelic et al., 2019). In a study conducted in Cambodia, the Dominican Republic, Uganda and Tanzania, the mean Internalized AIDS-Related Stigma Scale (IA-RSS) scores (possible 0–6) ranged from 2.06 to 3.84. All four countries agreed that it was difficult to tell people about their HIV status and that they hide their HIV status from other. Internalized stigma among people living with HIV was measures using the Internalized AIDS-Related Stigma Scale (IA-RSS) developed by Kalichman. (Geibel et al., 2020).

A study in Kagera region Tanzania reported a prevalence of internalized stigma of 12.7% women who reported high level of internalized stigma had 2.2 times the odd of poor life satisfaction. Internalized stigma was also associated with poor quality of life it was measured with the 5-item negative self-perception subscale of the HIV/AIDS Stigma Instrument (HASI-P) developed in sub-Saharan Africa (Parcesepe et al., 2020).

2.3 Association between Internalized stigma and depression

HIV related stigma is associated with poor health outcomes like depression. PLWH who experience internalized stigma have higher prevalence of severe depression. Internalized stigma and depression negatively affect people living with HIV such as having a poor quality of life by reducing access and quality of care; further, internalized stigma also affects adherence to ART and potentially increases the risk of transmission (Charles et al., 2012). A series of meta-analysis reported a significant association between HIV related stigma and depression. HIV related stigma was measured using the Berger Stigma Scale, HIV Stigma Measure, Internalized AIDS-Related Stigma Scale and depression was measured using the Center for Epidemiologic Studies Depression Scale and the Brief Symptom Inventory (BSI) depression subscale (Rueda et al., 2016).

HIV related stigma and depression are highly prevalent among PLWH in India. A study in Southern India reported that 23% of participants with an IARSS score of 3–6 screened positive for depression and also few who had an IARSS score of 0–2 were screened positive for depression. Internalized stigma and depression were closely correlated and a statistically significant positive association between IARSS and depressive symptoms was observed. There was an approximate increase in the PHQ–9 score of 0.9 for every additional point on the IARSS. Internalized stigma was measured using the six–item Internalized AIDS–Related Stigma Scale (IARSS) and depressive symptoms was measured using the Patient Health Questionnaire–9 (PHQ–9), which has been previously translated into Tamil and Telugu and validated in India (Chan Et al.2016).

Particularly in Sub-Saharan HIV-related stigma has been associated with psychological distress, poor ART adherence and depression among PLWH. Depression has been associated with increased transmission risk and death among people living with HIV (Tsai et al., 2012). In a study done in Cambodia, the Dominic republic, Uganda and Tanzania Higher IA-RSS scores were strongly correlated with depression in all countries.

Internalized stigma was measured using the Internalized AIDS-Related Stigma Scale and depression was measured by the patient health questionnaire (PHQ)-4 in Cambodia, Dominican Republic, Uganda and PHQ-9 in Tanzania (Geibel et al., 2020).

HIV related stigma is highly prevalent in women and has impact on clinic visit adherence, HIV care, serostatus disclosure, social support and contributes to depression symptoms (Chan et al., 2015). A study in Kenya among 200 women living with HIV reported that 25.5% of women met the criteria for major depression and 56.7% reported to experience the HIV-related internalized stigma. Major depression and internalized stigma were highly correlated and it was found that experiencing internalized stigma significantly increases the odd of reporting symptoms of depression. Depression was measured using the eight-item Patient Health Questionnaire Depression Scale (PHQ-8) and it was validated in sub-Saharan settings. Internalized stigma was measured using a modified version of the self-stigma subscale of the HIV/AIDS Stigma Instrument (HASI-P), which has been used throughout sub-Saharan African settings, including Kenya (Onono et al., 2020).

A study in Tanzania on stigma among people living with HIV being gossiped, verbally insulted, exclusion from social, family as well as religious activities were the leading forms of stigma. Dar es Salaam indicated high levels of stigma (49.7%) as compared to (39.4 %) from other regions. More than 56% from other regions and 45.5% from Dar es Salaam showed that the main reason for stigmatization is that people have fears of getting infected due to lack of knowledge and misconception on how HIV is transmitted. Expressing outcomes of stigmatization respondents suffered internal stigma and reported that they experienced low self-esteem, blamed themselves and felt ashamed, decided not to have more children, decided not to have sex, chose not to attend special gathering and not to get married, afraid of being gossiped, and also were afraid that someone would not want to be sexually intimate with them (NACOPHA, 2013).

2.4 Association between depression and socio-demographic factors

Depressive disorders have caused over 50 million years lived with disability worldwide, accounting for 7.5% of global total years lived with disability and it is regarded as the single largest contributor to non-fatal health loss (Sandmire et al., 1976). The sociodemographic factors of age, marital status, education and employed have consistently been identified as important factors associated with depression prevalence rates (Milanović et al., 2015). The prevalence of depression was significantly associated with being uneducated, attending school till lower standard (Bhatia & Munjal, 2014), having lower income (Shittu et al., 2013), age group 25-34 and being a widow among people living with HIV (Seid et al., 2020).

Women living with HIV face domestic attacks, financial constraints, rejection by family, spouse and community, also lack of support from the community and health care staff which generate fear ultimately leading to depression (Emlet et al., 2015). A study in Coastal South India among women living with HIV/AIDS whereby 52.6% were from rural area and 47.4.% were from urban area reported that Rural women were experiencing more depression than urban women and this was found to be statistically significant. 35% belonged to a middle class, 65% belonged to a lower class whereby lower class was reported to be experiencing more depression than middle class and this was found to be statistically significant. 60.6% were married, 23% were widowed and 16% were single. It was reported that widowed women were experiencing more depression compared to the married and single women. The Beck's Depression Inventory was used to assess the level of depression among participants (Unnikrishnan et al., 2012).

In Uganda and Ethiopia women living with HIV who were not living with their partner or divorced were at high risk of depression (Fantahun et al., 2018; Kakyo et al., 2012). In Jijiga town of eastern Ethiopia, it was reported that women who were living with HIV who were illiterate, unemployed and whose monthly household income was less than 1400 Birr (equivalent to 74,296.95 Tanzanian schillings) were at higher risk for depression. The Hospital Anxiety and Depression Scale (HADS) tool was used to screen women participants, this tool is composed of seven questions each for anxiety and depression (Yousuf et al., 2020)

Sociodemographic factors of age, marital status, education, income have consistently been identified as important factors in explaining the variability in the prevalence of depression(Akhtar-Danesh & Landeen, 2007). In Northern West Tanzania in Mwanza region at CTC Centre of Bugando Medical Centre, there was a significant association between age, education, income, employment, marital status and depression. 32.1% Participants aged 30-39 years were more likely to have depression followed by 22.5% of the oldest group aged 50 years and above. 32.4% of patients with no formal education were more likely to have depression followed by 26.7% with primary education and 19.2% of patients with post-primary education (secondary, college or university). 27.4% of patients with an income of <100,000 Tshs were more likely to have depression compared to 15.4% with an income of >100,000 Tshs, 27.4% of patients who were not employed were more likely to have depression compare to 10.3% who were employed. 29.4% patients who were single were more likely to have depression followed by those who were either separated, divorced or widowed (24.1%) compared to 23.1% of patients who were married. The Beck Depression Inventory was used to assess depression (Mwita et al., 2019). In Kilimanjaro region the prevalence of depression was significantly associated with being single. Depression was measured using the Edinburgh Postnatal Depression Scale (EPDS) which contains ten questions asking about depressive symptoms over the past seven days (Ngocho et al., 2019).

2.5 Association between depression and psychological factors

For individuals living with HIV depression may worsen existing disease states and lead to poorer health outcomes. (Abas et al., 2014; Egbe et al., 2017).Depression as one of the most common psychiatric diagnosis in people living with HIV/AIDS self-evaluation is often negative, critical and undervalued (Van Dam et al., 2011) .

Self-esteem

Belief about oneself and self-schemas which includes self-esteem, self-efficacy and self-compassion which involves feeling non-judgmental to oneself that guide how one processes information may be associated with depressive symptoms in PLHIV.

In USA and Puerto Rico, PLWH who had symptoms of depression had lower self-esteem than those without depression. Self-esteem was significantly associated with the symptoms of depression and females were most likely to have depression. The Rosenberg Self-Esteem Scale (RSES) was used to measure self-esteem and the Center for Epidemiological Studies Depression Scale (CES-D) was used to measure depressive symptoms (Eller et al., 2014). In Nigeria hospital HIV/AIDS Care and Treatment Clinic 40% of PLWH had low self-esteem and 28.1%, 12.6% and 2.8% had mild, moderate and severe depression. People living with HIV who had low self-esteem became more predisposed to depression. The Patient Health Questionnaire-9 (PHQ-9) was used to measure depression the tool has been validated and used for studies in Nigeria and a validated self-esteem scale developed by Rosenberg was used for measuring self-esteem (Okwaraji et al., 2019).

Self-efficacy

Self-efficacy involves one's belief in his or her ability to perform a specific behavior. Individuals with high self-efficacy are better able to motivate themselves, to persevere when difficulties arise, less vulnerable to stress and more resilient to aversive stimuli. when people achieve a good fit between stressful events and their coping strategies they experience fewer psychological symptoms than when there is lack of fit (Rodkjaer, 2014) .A study in USA and Puerto Rico among people living with HIV demonstrated that participants with symptoms of depression had lower self-efficacy than those without depressive symptoms. Self-efficacy was significantly associated with the symptoms of depression and females were most likely to have depression. The Center for Epidemiological Studies Depression Scale (CES-D) was used to measure depressive symptoms and self-efficacy was measured using the 10-item HIV Symptom Management Self-Efficacy Scale (Eller et al., 2014). Another study in Denmark reported that there was a significant inverse relationship between lower coping self-efficacy and a higher

depression among people living with HIV and Symptoms of depression were more in women than men. Depression symptoms were measured using the Beck's Depression Inventory (BDI) which has been validated in Danish setting. Self-efficacy was measured using the Coping Self-Efficacy Scale (Rodkjaer, 2014).

ART-Adherence

Depression has a negative impact on HIV testing and care, depression could be one of the barriers for ART use individuals may feel desperate and have social functioning impairment including weakening HIV care seeking behaviour (Tao et al., 2018). In low, middle and high-income countries such as United State of America, France, Ethiopia and South-Africa the proportion of good ART adherence among people living with HIV who had depression was 42% which was lower compared to those without depression. The rate of depression among people living with HIV ranged from 12.8% to 78% (Uthman et al., 2014). Other nine studies, six conducted in the continental United States and one from Puerto Rico, Uganda and Russia contributed significantly to the overall effect reported that the proportion of people living with HIV who were experiencing symptoms of depression were 14% and they were less likely to use Antiretroviral therapy than those who were not experiencing depressive symptoms. Depression prevalence ranged from 19% to 77% and ART use rate varied from 11% to 71%. Six studies used self-report and the other three studies were based on medical records (Tao et al., 2018).

In Sub-Saharan countries, reduced ART-adherence was associated to depression and this led to an increase in viral suppression, lower CD4+ T-cell count , hastening the progression to AIDS and elevated the risk of mortality (Abas et al., 2014; Egbe et al., 2017) . In Tanzania, there was a positive association between having depression and non-adherence to ART. 23% of participants with low ART adherence had scores indicating mild, moderate or severe depression. The Patient Health Questionnaire (PHQ -9) was used to assess the symptoms of depression and ART-adherence was assessed using a combination of four ART adherence questions answering if a dose had been missed within the last month, If not all doses were taken or if the doses were taken more than one hour early or late and if the doses were forgotten or skipped (Belenky et al., 2014)

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

The study was a health facility based cross-sectional study that used a quantitative approach to explore the association between depression and internalized stigma among women living with HIV in Tanzania.

3.2 Study Area and Setting

The study was conducted in Tanzania in 3 Centers 2 located in Dar-es-salaam region and 1 in Tanga region. According to the 2012 national census Dar-es-salaam has a population estimate of 4,364,541 and Kinondoni municipal has a population estimate of 929,681 with 451,653 males and 478,028 Females. Tanga region has a population estimate of 2,045,205 and Lushoto district has a population estimate of 492,441 with 230,236 males and 262,205 females.

3.3 Study Population

The population was of women living with HIV aged 18 and above who were attending the HIV/AIDS care and treatment clinics in Dar-es-salaam and Tanga region in Tanzania.

3.4 Target Population

The population was of women living with HIV of age 18 and above attending HIV/AIDS care and treatment Clinics.

3.5 Inclusion Criteria

Women living with HIV ages ≥18 years, able and willing to voluntarily consent to participate were recruited for this study.

3.6 Exclusion Criteria

At the time of obtaining informed consent, eligible participants who were in any acute psychological/physiological distress were excluded from this study

3.7 Sampling procedure and technique

Multistage sampling was conducted. In the First stage non-proportional stratified sampling was used by selecting equal number of participants in the selected strata (Urban and rural). At the centers, systematic sampling was used to select participants in the CTC clinic to participate in the study every second client on the waiting line was approached and asked to participate in the study.

To ensure sample equality and reduction of generalizability bias, participants were recruited based on their geographic location (Kinondoni Municipal and Lushoto District). Therefore, 50% of the estimated sample size was drawn from Kinondoni municipal and 50% from Lushoto district.

3.8 Sample size calculation

An estimated sample size of the study was calculated by using the formula obtained from a study on sample size calculation in medical studies which aimed to determine the number of samples needed to detect significant changes in clinical parameters, treatment effects or associations after data gathering. (Pourhoseingholi et al., 2013)

Sample size formula

$N= (Z^2 P(1-P)/d^2)$

Where;

Z=confidence interval 95%=1.96

Expected prevalence (P) is obtained from the same studies. The calculated prevalence was obtained from a study done in rural Kilifi in Kenya which measured the prevalence and correlates of depressive symptoms among people living with HIV(Nyongesa et al., 2019)

P= Expected prevalence 13.8%

d^2=Precision corresponding to the effect size 5%

$N= (1.96)^2 x0.138 (1-0.138)) / (0.05)^2$

N =182.79

Adjusting for missing data due to non-response and accommodating geography and age, we add 15%.

182.79 + 27.42 =210

Total proposed sample for this study was 210 participants living with HIV.

3.9 Variables

3.9.1 Independent Variable

Psychological factors such as internalized stigma, self-esteem, self-efficacy, ART-adherence and social demographic factors such as age, marital status, level of education, and household income.

3.9.2 Dependent Variable

Depression

3.10 Data collection tools

A password protected tablet device with a password protected Open Data Kit software which contains structured questionnaire such as socio-demographic questionnaire, Internalized HIV stigma Scale by Sayles and colleagues (2008), PHQ-9 by Fawzi (2020), Rosenberg Self-Esteem Scale by Rosenberg (1989), Coping Self-Efficacy Scale by Chesney (2006), and a self-report ART-adherence tool by Wilson (2014) preloaded in Kiswahili and English was used. Hard copies of the instruments were available in the event of technology failure.

A structured questionnaire was used to collect the socio-demographic characteristics that are Age, Marital status, Level of education, Household income.

The PHQ-9 was used for assessing the presence of depressive symptoms among women living with HIV. It has 9 items and a 4-point scale with a standard cut-off point of 5. Scores ≥ 5 were suggestive of having depression, PHQ-9 has been validated in Tanzania it has a good internal consistency with a Cronbach's Alpha of 0.83 (Fawzi et al., 2020).

The Rosenberg Self-Esteem Scale was used to assess participants self-worth by measuring both positive and negative feelings about the self. It has 10 items, 5 items (1,3,4,7,10) which are positively worded and 5 items (2,5,6,8,9) which are negatively worded. It had a 4-point Likert scale with total scores of 30. A score < 25 was suggestive of low self-esteem. (Rosenberg, 1965).This tool has been used in studies done in Tanzania (Id et al., 2020; Kessy, 2012). In a study done in Tanzania It had a good test-retest correlation between 0.82 and 0.88. (Mwakanyamale & Yizhen, 2019) it has been validated in South Africa it has a good internal consistency with a Cronbach alpha of 0.73 (Makhubela & Mashegoane, 2017).

Coping self-efficacy scale was used to assess the use of problem-focused coping, receiving of social support and stopping unpleasant emotions and thoughts among women living with HIV. It had a 4 point scale and 13 items whereby 6 items were for problem focused coping, 4 items were for stopping unpleasant thoughts and emotions and 3 items were for receiving social support. (Chesney et al., 2006). Has been validated in South Africa with Cronbach's alpha coefficient of 0.81. (Guse et al., 2016). alpha coefficients ranging from .85 to .87 (Koen et al., 2011; Wyk, 2010).A Median of (16) was used as a cut-off point to categorize coping self-efficacy score. Low coping self-efficacy was considered to be scores <16.

HIV ART-adherence is a self-report for HIV care it was used to assess the degree to which a patient's behaviour corresponds with the agreed recommendations from a health care provider. It had 3 items whereby item 1 was on the days taken, item 2 was on the frequency and item 3 was on the rating, Item 2 and 3 had a 6 point scale. (Wilson et al., 2014). Has been validated in south Africa it achieved a good internal consistency reliability with a Cronbach alpha of 0.79 (Phillips et al., 2017). 80 was used as a cut-off point whereby scores <80 indicated poor adherence (Lauffenburger et al., 2020).

Internalized HIV stigma scale-is a multi-dimensional scale for measuring HIV internalized stigma it was used to assess self-stigma among women living with HIV. It had 28 items it and a 5 point scale with Sub scales such as stereotype with 12 items, Disclosure with 5 items , social relationship with 7 items, self-acceptance with 4 items (Sayles et al., 2008). This tool has not been validated in Tanzania face validity will be used to validate the tool. The tool has been validated in United States of America. It has a good internal consistency reliability with a Cronbach's alpha of 0.85 or higher for 3 sub-scales and a Cronbach's alpha of 0.66 for self-acceptance Sub- scale (Sayles et al., 2008). Median was used to categorize internalized stigma score. 66 was used as a cut-off point whereby scores ≥66 indicated high internalized stigma (Barroso et al., 2014).

Translation of instruments

Scale items were translated from English to Swahili and then later back translated to English. Comparison between the original English questionnaire and the "back translation" was done to ensure the meanings of scale items were retained.

Pre-testing of the study instruments

Ten women living with HIV were invited for the piloting of the questionnaire. This pre-testing helped to check if the questionnaires are understandable, the time frame for the interview and also for making proper refinements. The 10 participants were not included in the study because of their prior exposure to the tools.

Psychometric properties of scale measures

To ensure face validity of inherent dimensions of the constructs assessed by the standardized scales in the Tanzania context reliability of scales used in this study was measured, Cronbach's alpha estimates were computed. Internalized HIV stigma scale had a Cronbach alpha of 0.92, the coping self-efficacy scale had a Cronbach alpha of 0.88. The PHQ-9 had a Cronbach alpha of 0.75, The HIV ART-adherence self-report scale for HIV care had a Cronbach Alpha of 0.70 and the Rosenberg self-esteem scale had a Cronbach Alpha of 0.82.

3.11 Study procedures

3.11.1 Recruiting and training of research assistants

Research assistants with a bachelor degree in social science and experience in data collection were recruited and trained for 1week they were trained on the objective of the study, details of the data collection tool (questionnaire) and ethical issues. Their roles were to recruit participants, to interview the participants and fill in the questionnaires the researcher also participated in data collection and selection of samples.

3.11.2 Data collection process

Eligible participants were given a full explanation on the importance of the study verbally. A written informed consent was obtained for the participants. The research assistants administered a questionnaire in Swahili for data collection, they later collected and submitted the tablets to the principal investigator.

3.11.3 Data management

Data was cleaned and kept in a password protected file to ensure safety management and later for analysis. Participants in the study were assigned study identification numbers, names or any other unique identifiers were not used on any study documentation. All tablets were password protected and all written informed consent forms which had participants code number on them, were kept in a locked file cabinet at Muhimbili University of Health and Allied Science.

2.12 Data Analysis

Data was entered using statistical package for the Social Science (SPSS) for windows version 23. Tables and figures were used to display variables. Descriptive and inferential statistics were used to analyze data. Bivariate association was calculated using the chi-square test to determine the presence of significant associations. All variables were then Subjected for multiple logistic regression for identification of independent associated risk factors for depression. Odd ratio and

95% confidence interval were reported. A variable with a p-value of less than 0.05 was considered statistically significant.

3.13 Ethical Issues

Ethical clearance was requested at MUHAS Senate Research and Publications Committee. Permission was obtained from the Municipal director, the Municipal medical officer of health and the medical officer in charge at a specific site. For women living with HIV who were eligible to participate the study team members explained to them what the study required of them. Potential interviewees read a script outlining the purpose of the study and given the opportunity to ask questions or clarifications. If she voluntary desires to participate, a study team member obtained a written informed consent from a woman who voluntary desired to participate. Participants were informed that refusal to participate in the study did not bear any consequences and that they were free to agree or disagree. Confidentiality of all study participants was strictly maintained across all study components.

CHAPTER FOUR

4.0 RESULTS

4.1 Descriptive statistics

4.1.1 Distribution of Socio-demographic characteristics, clinical factor and psychological factors of 210 women living with HIV in Tanzania.

A total of 210 women living with HIV consented to participate in this study. Their mean age were 31.55 years with a standard deviation (SD) 12.32. The women's ages were dichotomized in to three, categories among these participants 104 (49.5%) were young women aged 18-24, 27 (12.9%) were middle aged women aged 25-34 and 79 (37.6%) were older women aged 35 and above. With regards to marital status 86 (41%) were single others were legally married, cohabiting, widowed and divorced or separated. With regards to the level of education 126 (60 %) had pre-secondary level of education and others had post-secondary level of education. With regards to household income, 110 (52.4 %) had an income of 50,000 to 100,000, other had an income of 100,000 and more.

Participants who reported to have high Internalized stigma were 107 (51%) and low internalized stigma were 103 (49%). Participants who reported to have low self-efficacy were 101 (48.1%) and high self-efficacy were 109 (51.9%). Participants who reported to have low self-esteem were 190 (90.5%) and high self-esteem were 20 (9.5%). Moreover, Participants who reported to have poor ART-adherence were 42(20.0%) and good ART-adherence were 168(80.0%). The details are shown in the table 1 below.

Table 1: Distribution of socio-demographic characteristics, clinical factor and psychological factors of 210 women living with HIV in Tanzania.

Variables	Mean (SD)	N=210 (%)
Age	31.55 (12.32)	
18-24		104 (49.5)
25-34		27 (12.9)
35 and above		79 (37.6)
Marital status		
Single		86 (41.0)
Legally married		42 (20.0)
Cohabiting		31 (14.8)
Divorced/separated		23 (11.0)
Widowed		28 (13.3)
Level of education		
Pre-secondary school		126 (60.0)
Post-secondary school		84 (40.0)
Household income		
50,000 to 100,000		110 (52.4)
100,000 and more		59 (47.6)
Internalized stigma		
Low		103 (49.0)
High		107 (51.0)
Coping self-efficacy		
Low		109 (51.9)
High		101(48.1)
Self-esteem		
Low		190 (90.5)
High		20 (9.5)
ART-adherence		
poor		42 (20.0)
Good		168 (80.0)

3.1.2. Prevalence of depression

Among 210 women living with HIV who participated in the study, 80 (38.1%) have be found to have depressive symptoms for the past 2 weeks. The details are shown in figure 2 below.

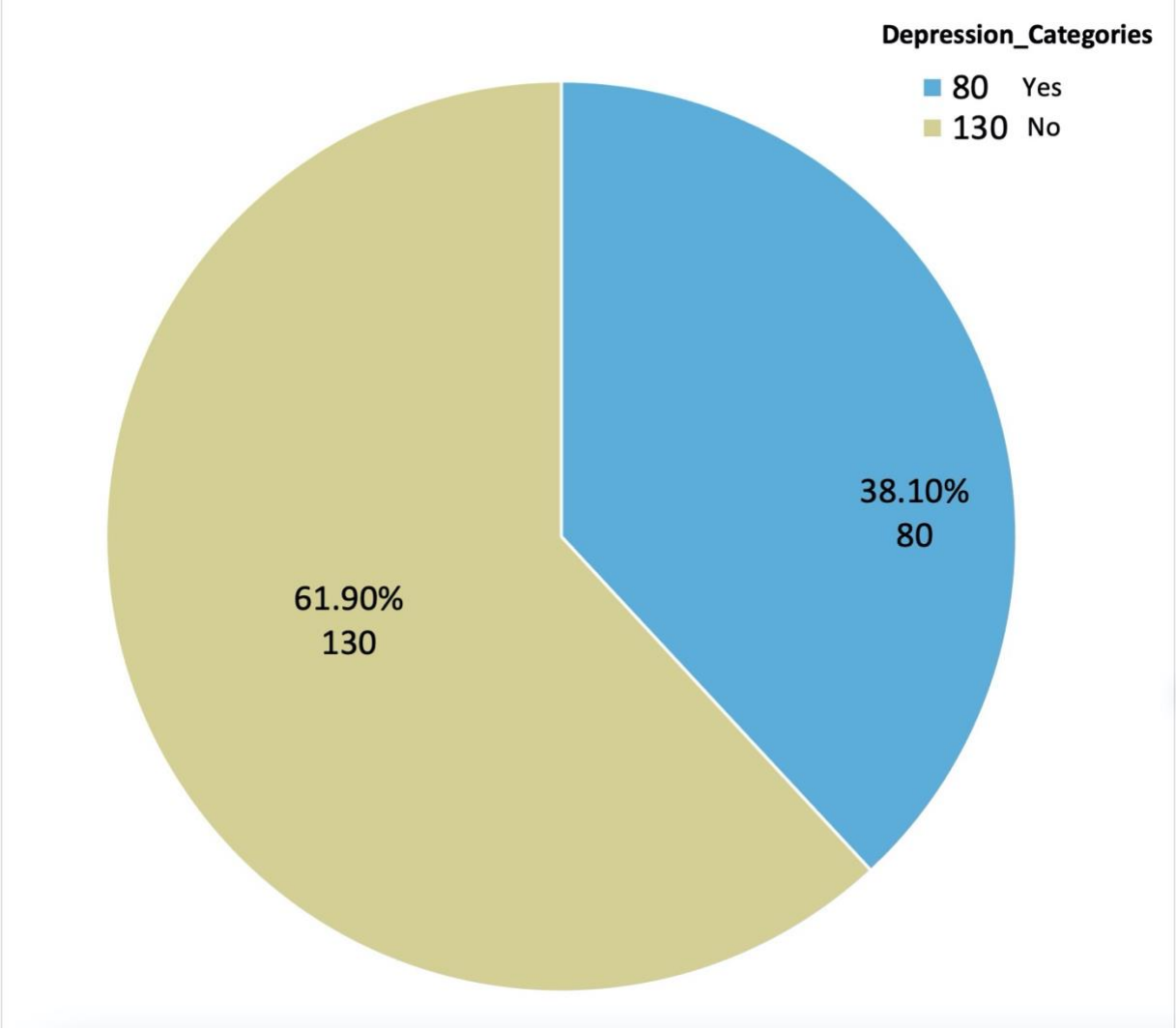


Figure 2: Prevalence of depression among 210 women living with HIV in Tanzania

4.2 Bivariate analysis

4.2.1 Factors associated with depression among women living with HIV

As evident in table 2 below 14 (51.9%) women aged 25-34 had depression compared to 30 (38.0%) of women aged 35 and above and 36 (34.6%) women aged 18-24 however, the difference in their proportions were not statistically significant (p= 0.259). Fifteen (48.4%) women who were cohabiting had depression compared to 11 (39.3%) women who were widowed, 99(39.1) who were divorced/separated, 16 (38.1%) women who were legally married and 29 (33.7%) women who were single. The difference in the proportions of participants were not statistically significant (p=0.714). Thirteen (41.7 %) participants who had a post- secondary level of education had depression compared to 45 (35.7%) participants who had a pre-secondary level of education. The difference in their proportions was not statistically significant (p=0.384).

Thirty-eight (38.0%) participants who received an income of 100,000 and more had depression compared to 42 (38.2%) participants who received an income of 50,000 to 100,000. The difference in the proportions of participants were not statistically significant (p=1.000). seventy-five (39.5%) Participants who had low self-esteem had depression as opposed to 5 (25.0%) who had good self-esteem. The difference in the proportion of participants were not statistically significant (p=0.205). Twenty-six (61.9%) of Participants with poor ART-adherence had depression as opposed to 54 (32.1%) who had good ART-adherence and the differences in the proportion of participants were statistically significant (p=<0.001). Thirty-six (33.0 %) Participants who had low self-efficacy had depression compared to forty-four (43.6 %) who had high coping self-efficacy but the difference in the proportion of participants were not statistically significant (p=0.116). fifty-five (51.4 %) participants with high internalized stigma had depression compared to 25 (24.3%) who had low internalized stigma. The difference in the proportion of participants were statistically significant (p=<0.001)

Table 2:Bivariate analysis- Association of socio-demographic characteristics, clinical factor, psychological factors and depression among 210 women living with HIV in Tanzania

Variable	Depression		Total N=210	Chi-square	P-value
	No Depression n=X (%)	Depression n=X (%)			
Age				2.701	0.259
18-24	68 (65.4)	36 (34.6)	104		
25-34	13 (48.1)	14 (51.9)	27		
35 and above	49(62.0)	30 (38.0)	79		
Marital status				2.117	0.714
Single	57 (66.3)	29 (33.7)	86		
Legally Married	26 (61.9)	16 (38.1)	42		
Cohabiting	16 (51.6)	15 (48.4)	31		
Widowed	17 (60.7)	11 (39.3)	28		
Divorced/ separated	14 (60.9)	9 (39.1)	23		
Level of Education				0.757	0.384
Pre-secondary school	81 (64.3)	45 (35.7)	126		
Post-secondary school	49 (58.3)	13(41.7)	84		
Household Income				0.001	1.000
50,000 to 100,000	68 (89.1)	42 (38.2)	110		
100,000 and more	62 (88.0)	38 (38.0)	100		
Self-esteem				1.607	0.205
Low	115 (60.5)	75 (39.5)	190		
High	15 (75.0)	5 (25.0)	20		
Art-adherence				12.620	**<0.001**
Poor	16 (38.1)	26 (61.9)	42		
Good	114 (67.9)	54 (32.1)	168		
Internalized stigma				16.380	**<0.001**
Low	78 (75.7)	25(24.3)	103		
High	52 (48.6)	55(51.4)	107		
Coping self-efficacy				2.468	0.116
Low	73 (67.0)	36 (33.0)	101		
High	57 (56.4)	44(43.6)	109		

4.3. Multivariate analysis

4.3.1 Factors associated with depression

Multivariate Logistic Regression was used to determine the strength of independent associations between independent variables and dependent variable. Table 3 summarizes the findings.

Among risk factors that were thought to be independently associated with depression internalized stigma and ART-adherence were associated with depression. Women living with HIV who had high internalized stigma were almost three times more likely to have depression (AOR=2.56, CI =1.36-4.83; P=0.004) compared to women who had low internalized stigma and this was statistically significant also Women living with HIV who had poor ART-adherence were three times more likely to have depression (AOR= 3.13, CI=1.43-6.83; P=0.004) compared to women who had good ART-adherence and this was statistically significant. Other factors such as age, level of education, marital status, household income, self-esteem, self-efficacy were not independently associated with depression in the multivariate analysis.

Table 3: Independent strength of association between socio-demographic characteristics, clinical factor, psychological factors and depression among 210 women living with HIV in Tanzania

Variable	N	Crude odds ratio OR (95% CI)	P-value	Adjusted odd ratio AOR (95% CI)	P-value
Age					
18-24	105	ref		ref	
25-34	94	2.03 (0.86-4.79)	0.104	1.47 (0.55-3.96)	0.448
35 and above	79	1.16 (0.63-2.12)	0.639	1.34 (0.55-3.24)	0.521
Marital status					
Single	86	0.83 (0.38-1.78)	0.627	0.79 (0.30 -2.07)	0.632
Legally Married	42	ref			
Cohabiting	31	1.52 (0.60-3.90)	0.380	1.70 (0.58 -4.99)	0.338
Widowed	28	1.05 (0.39- 2.80)	0.920	1.07 (0.35- 3.24)	0.909
Divorced/ separated	23	1.05 (0.37-2.97)	0.935	1.01 (0.32- 3.15)	0.986
Level of Education					
Pre-secondary school	126	0.78 (0.44-1.37)	0.385	0.56 (0.26 -1.17)	0.124
Secondary school	84	ref			
Household Income					
50,000 to 100,000	110	1.01 (0.58-1.76)	0.978	1.06 (0.57 -1.97)	0.864
100,000 and more	100	ref			
Self-esteem					
Low	190	1.96 (0.68- 5.61)	0.212	1.99 (0.61-6.43)	0.252
High	20	ref		ref	
ART-adherence					
Poor	42	3.43 (1.70-6.92)	0.001	3.13 (1.43 -6.83)	**0.004**
Good	168	ref		ref	
Internalized stigma					
Low	103	ref			
High	107	3.30 (1.83-5.95)	<0.001	2.56 (1.36- 4.83)	**0.004**
Coping self-efficacy					
Low	101	0.64 (0.37-1.12)	0.117	1.76 (0.93-3.31)	0.080
High	109	ref			

Key: CI=confidence interval, OR=odds ratio, AOR=adjusted odds ratio, p<0.05

CHAPTER FIVE

5.0 DISCUSSION

The broad objective of this study was to assess the prevalence of depression and its association to internalized stigma among women living with HIV in Tanzania. The discussion will include findings of univariate descriptive statistics, bivariate and multivariate analysis based on the specific research questions of the study.

5.1 Prevalence of depression

The finding of this study revealed that 38.1 % of women living with HIV reported to experience depressive symptoms in the past 2 weeks. These results are almost similar to the findings of a study which was conducted in Ethiopia, among 416 people living with HIV which had a prevalence of 38.94 % and depression was assessed with the 9-item Patient Health Questionnaire (PHQ-9) (Asmare Eshetu & Meseret, 2015) also a study done in South Africa among people living with HIV reported a prevalence of 37.6% the Beck's depression Inventory was used to assess for depression (Kagee & Martin, 2010). Another study conducted in Ethiopia among People living with HIV reported a prevalence of 36.65 % (Amare et al., 2018).The prevalence of depression in a study conducted in Sub-Saharan Africa among people living with HIV ranged from 9%-32% and the PHQ-9 was used to asses for depression with a cut-off point of 5 (Bernard et al., 2017).

Studies conducted in Tanzania in Mwanza region the prevalence of depression was 24%. Beck Depression Inventory with 21 items was used to assess depression among 275 people living with HIV (Mwita et al., 2019). In Dar-es-salaam region the prevalence of depression among 1487 women was found to be 57.8%. The Hopkins symptom checklist (HSCL-25) was used to assess for depression (Sudfeld et al., 2017). The prevalence of depression is observed to be lower than in other studies the variation may have been contributed by varying sample size and the use of different tools in screening for depression.

5.2 Association of Socio-demographic factors and depression

Socio-demographic factors like age, marital status, education level and household income revealed no significant association with depression scores in the multivariate analysis. These findings are similar to other studies where depression was not statistically significant associated with age among people living with HIV in Delhi (Bhatia & Munjal, 2014), marital status was not statistically significant associated with depression among people living with HIV in a study done in Nigeria (Obadeji et al., 2014) , level of education was not statistically significant associated with depression among people living with HIV in a study done in rural Uganda (Richards et al., 2018) and household income was not significantly associated with depression among people living with HIV in Ethiopia (Beyamo et al., 2020).

There are other studies that report different findings with respect to socio-demographic variables whereby age was significantly associated with depression among 395 people living with HIV and it was reported that the age group 25-34 years was significantly associated with depression in a study done in Ethiopia (Seid et al., 2020), marital status and Level of education were significantly associated with depression and it was reported that being divorced and having no formal education was statistically significantly associated with depression among 357 women living with HIV in a study done in Jijiga town in Ethiopia (Yousuf et al., 2020). Moreover household income was significantly associated with depression whereby having lower income was statistically significant with depression among women living with HIV in a study done in Coastal south India (Unnikrishnan et al., 2012).

5.3 Association between psychological factors and depression

With respect to the third objective internalized stigma and ART-adherence were found to have an association with depression. In the multivariate analysis high internalized stigma was significantly association with depression compared to low internalized stigma and also Poor ART-adherence was significantly associated with depression compared to good ART-adherence among women living with HIV in Tanzania. This findings are similar to studies one done in Uganda whereby internalized stigma was significantly associated with depression among people

living with HIV (Ashaba et al., 2018). Another study done in southwestern Kenya found that experiencing internalized stigma significantly increased the odds of reporting depressive symptoms among women living with HIV (Onono et al., 2020). In a study done in southern India reported a statistically significant positive association between Internalized stigma and depression among people living with HIV (Charles et al., 2012).In a study done in Tanzania ART-adherence was significantly associated with depression among 403 people living with HIV. (Belenky et al., 2014).

Self-esteem and coping self-efficacy showed no significant association to depression among women living with HIV in Tanzania. This is similar to a study which showed no significant association to depression in the multivariate analysis whereby self-esteem was not statistically significant associated with depression in a study done in Ghana among people living with HIV(Agyemang et al., 2020).

There are also other studies which reported different finding with regards to self-esteem, self-efficacy the difference may have been contributed by the varying sample size and the use of different tools. These studies showed that self-esteem and coping self-efficacy were significantly associated with depression. A study done in the United States, Puerto Rico, Canada, Namibia, China, and Thailand among 2182 people living with HIV showed that there was a significant association between self-esteem, self-efficacy and depression. The Center for Epidemiological Studies Depression Scale (CES-D) with 20 items was used to assess for depressive symptoms, The Rosenberg Self-Esteem Scale (RSES) was used to assess self-esteem and The 10-item HIV Symptom Management Self-Efficacy Scale was used to assess self-efficacy (Eller et al., 2014). In a study done in Nigeria among 720 people living with HIV reported a significant association between self-esteem and depression (Okwaraji et al., 2019).

CHAPTER SIX

6.0 CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 Conclusion

The study aimed to assess the prevalence of depression and its association to internalized stigma and other psychosocial factors among women living with HIV in Tanzania. The findings revealed that the prevalence of depression was 38.1%. This study showed an association between participants with higher internalized stigma and depression compared to those with low internalized stigma among women living with HIV in Tanzania. Sociodemographic and other psychological factors did not show any association to depression among women living with HIV in Tanzania

6.2 Recommendations

From the findings of this study, we recommend the following;

- Screening and early intervention of depression among women living with HIV attending CTC clinics.
- A need for psychosocial interventions so as to bring awareness to women on how to combat internalized stigma.
- Further longitudinal study to know the directionality of causation between internalized stigma and depression.

6.3 Study limitation and mitigations

- The use of self-report in assessing ART adherence, self-report measures may overestimate the actual adherence. Participants were encouraged to be honest in their response.

REFERENCES

Abas, M., Ali, G. C., Nakimuli-Mpungu, E., & Chibanda, D. (2014). Depression in people living with HIV in sub-Saharan Africa: time to act. *Tropical Medicine and International Health*, *19*(12), 1392–1396. https://doi.org/10.1111/tmi.12382

Agyemang, E. O., Dapaah, J. M., Osei, F. A., Appiah, S. C. Y., Mensah, N. K., Odoom, S. F., Owusu-Ansah, M., & Martyn-Dickens, C. (2020). Self-Esteem Assessment among Adolescents Living with HIV and Seeking Healthcare at Komfo Anokye Teaching Hospital-Kumasi, Ghana. *Journal of the International Association of Providers of AIDS Care*, *19*, 1–9. https://doi.org/10.1177/2325958220976828

Akhtar-Danesh, N., & Landeen, J. (2007). Relation between depression and sociodemographic factors. *International Journal of Mental Health Systems*, *1*, 1–9. https://doi.org/10.1186/1752-4458-1-4

Aljassem, K., Raboud, J. M., Hart, T. A., Benoit, A., Su, D., Margolese, S. L., Rourke, S. B., Rueda, S., Burchell, A., Cairney, J., Shuper, P., & Loutfy, M. R. (2016). Gender Differences in Severity and Correlates of Depression Symptoms in People Living with HIV in Ontario, Canada. *Journal of the International Association of Providers of AIDS Care*, *15*(1), 23–35. https://doi.org/10.1177/2325957414536228

Amare, T., Getinet, W., Shumet, S., & Asrat, B. (2018). *Prevalence and Associated Factors of Depression among PLHIV in Ethiopia : Systematic Review and Meta-Analysis , 2017. 2018*.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders. In *The 5-Minute Clinical Consult Standard 2016: Twenty Fourth Edition*. https://doi.org/10.4324/9780429286896-12

Amuri, M., Mitchell, S., Cockcroft, A., & Andersson, N. (2011). Socio-economic status and HIV/AIDS stigma in Tanzania. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *23*(3), 378–382. https://doi.org/10.1080/09540121.2010.507739

Ashaba, S., Cooper-Vince, C., Maling, S., Rukundo, G. Z., Akena, D., & Tsai, A. C. (2018). Internalized HIV stigma, bullying, major depressive disorder, and high-risk suicidality among HIV-positive adolescents in rural Uganda. *Global Mental Health*, *5*.

https://doi.org/10.1017/gmh.2018.15

Asmare Eshetu, D., & Meseret, S. (2015). Prevalence of Depression and Associated Factors among HIV/ AIDS Patients Attending ART Clinic at Debrebirhan Referral Hospital, North Showa, Amhara Region, Ethiopia. *Clinical Psychiatry*, *1*(1), 1–7. https://doi.org/10.21767/2471-9854.100003

Bandura, A. (1978). Self-efficacy: Toward a unifying theory of behavioral change. *Advances in Behaviour Research and Therapy*, *1*(4), 139–161. https://doi.org/10.1016/0146-6402(78)90002-4

Barroso, J., Relf, M. V., Williams, M. S., Arscott, J., Moore, E. D., Caiola, C., & Silva, S. G. (2014). A randomized controlled trial of the efficacy of a stigma reduction intervention for HIV-infected women in the deep south. *AIDS Patient Care and STDs*, *28*(9), 489–498. https://doi.org/10.1089/apc.2014.0014

Baugher, A. R., Beer, L., Fagan, J. L., Mattson, C. L., Freedman, M., Skarbinski, J., & Shouse, R. L. (2017). Prevalence of Internalized HIV-Related Stigma Among HIV-Infected Adults in Care, United States, 2011–2013. *AIDS and Behavior*, *21*(9), 2600–2608. https://doi.org/10.1007/s10461-017-1712-y

Belenky, N. M., Cole, S. R., Pence, B. W., Itemba, D., Maro, V., & Whetten, K. (2014). Depressive symptoms, HIV medication adherence, and HIV clinical outcomes in Tanzania: A prospective, observational study. *PLoS ONE*, *9*(5), 1–5. https://doi.org/10.1371/journal.pone.0095469

Bernard, C., Dabis, F., & De Rekeneire, N. (2017). Prevalence and factors associated with depression in people living with HIV in sub-Saharan Africa: A systematic review and meta-analysis. *PLoS ONE*, *12*(8), 1–22. https://doi.org/10.1371/journal.pone.0181960

Beyamo, A., Bashe, T., Facha, W., & Moshago, T. (2020). Depression and associated factors among adult hiv/aids patients attending antiretroviral therapy at wolaita sodo university teaching and referral hospital, Southern Ethiopia. *HIV/AIDS - Research and Palliative Care*, *12*, 707–715. https://doi.org/10.2147/HIV.S278794

Bhatia, M. S., & Munjal, S. (2014). Prevalence of depression in people living with HIV/AIDS undergoing art and factors associated with it. *Journal of Clinical and Diagnostic*

Research, *8*(10), WC01–WC04. https://doi.org/10.7860/JCDR/2014/7725.4927

Chan, B. T., Tsai, A. C., & Siedner, M. J. (2015). *RESEARCH AND PRACTICE HIV Treatment Scale-Up and HIV-Related Stigma in Sub-Saharan Africa : ALongitudinal Cross-Country Analysis*. *105*(8), 1581–1587. https://doi.org/10.2105/AJPH.2015.302716

Chang, J. L., Tsai, A. C., Musinguzi, N., Haberer, J. E., Boum, Y., Muzoora, C., Bwana, M., Martin, J. N., Hunt, P. W., Bangsberg, D. R., & Siedner, M. J. (2018). Depression and suicidal ideation among HIV-infected adults receiving efavirenz versus nevirapine in Uganda: A prospective cohort study. *Annals of Internal Medicine*, *169*(3), 146–155. https://doi.org/10.7326/M17-2252

Charles, B., Jeyaseelan, L., Pandian, A. K., Sam, A. E., Thenmozhi, M., & Jayaseelan, V. (2012). Association between stigma, depression and quality of life of people living with HIV/AIDS (PLHA) in South India - A community based cross sectional study. *BMC Public Health*, *12*(1), 1. https://doi.org/10.1186/1471-2458-12-463

Chesney, M. A., Neilands, T. B., Chambers, D. B., Taylor, J. M., & Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. *British Journal of Health Psychology*, *11*(3), 421–437. https://doi.org/10.1348/135910705X53155

Colbert, A. M., Kim, K. H., Sereika, S. M., & Erlen, J. A. (2010). An examination of the relationships among gender, health status, social support, and HIV-related stigma. *Journal of the Association of Nurses in AIDS Care*, *21*(4), 302–313. https://doi.org/10.1016/j.jana.2009.11.004

DeJean, D., Giacomini, M., Vanstone, M., & Brundisini, F. (2013). Patient experiences of depression and anxiety with chronic disease: A systematic review and qualitative meta-synthesis. *Ontario Health Technology Assessment Series*, *13*(16), 1–33.

Derlega, V. J., Winstead, B., Greene, K., Servoich, J., & Elwood, W. N. (2002). Perceived HIV-related stigma and HIV disclosure to relationship partners after finding out about the seropositive diagnosis. *Journal of Health Psychology*, *7*(4), 415–432. https://doi.org/10.1177/1359105302007004330

Earnshaw, V. A., & Chaudoir, S. R. (2009). From conceptualizing to measuring HIV stigma: A review of HIV stigma mechanism measures. *AIDS and Behavior*, *13*(6), 1160–1177. https://doi.org/10.1007/s10461-009-9593-3

Earnshaw, V. A., Smith, L. R., Chaudoir, S. R., Amico, K. R., & Copenhaver, M. M. (2013). HIV stigma mechanisms and well-being among PLWH: A test of the HIV Stigma Framework. *AIDS and Behavior*, *17*(5), 1785–1795. https://doi.org/10.1007/s10461-013-0437-9

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), 1–13. https://doi.org/10.1186/s12889-017-4467-5

Eller, L. S., Rivero-Mendez, M., Voss, J., Chen, W. T., Chaiphibalsarisdi, P., Iipinge, S., Johnson, M. O., Portillo, C. J., Corless, I. B., Sullivan, K., Tyer-Viola, L., Kemppainen, J., Rose, C. D., Sefcik, E., Nokes, K., Phillips, J. C., Kirksey, K., Nicholas, P. K., Wantland, D., … Brion, J. M. (2014). Depressive symptoms, self-esteem, HIV symptom management self-efficacy and self-compassion in people living with HIV. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *26*(7), 795–803. https://doi.org/10.1080/09540121.2013.841842

Emlet, C. A., Brennan, D. J., Brennenstuhl, S., Rueda, S., Hart, T. A., & Rourke, S. B. (2015). The impact of HIV-related stigma on older and younger adults living with HIV disease: Does age matter? *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *27*(4), 520–528. https://doi.org/10.1080/09540121.2014.978734

Fantahun, A., Cherie, A., & Deribe, L. (2018). Prevalence and Factors Associated with Postpartum Depression Among Mothers Attending Public Health Centers of Addis Ababa, Ethiopia, 2016. *Clinical Practice & Epidemiology in Mental Health*, *14*(1), 196–206. https://doi.org/10.2174/1745017901814010196

Fawzi, M. C. S., Ngakongwa, F., Liu, Y., Rutayuga, T., Somba, M., & Kaaya, S. F. (2020). *screening of depression in Tanzania*. 9–14. https://doi.org/10.1016/j.npbr.2018.11.002.Validating

FDREMOH. (2011). National Mental Health Strategy 2012/13 - 2015/16. There is no health without Mental Health. *Health Sector Development Programme IV 2010/11 – 2014/15, October 2010*, 1–114.

Feuillet, P., Lert, F., Tron, L., Aubriere, C., Spire, B., Dray-Spira, R., Carrieri, P., Hamelin, C., Lorente, N., Préau, M., Suzan-Monti, M., Mora, M., Allègre, T., Mours, P., Riou, J. M., Sordage, M., Chennebault, J. M., Fialaire, P., Rabier, V., … Patey, O. (2017). Prevalence of and factors associated with depression among people living with HIV in France. *HIV Medicine*, *18*(6), 383–394. https://doi.org/10.1111/hiv.12438

Gaynes, B. N., Pence, B. W., Atashili, J., O'Donnell, J., Kats, D., & Ndumbe, P. M. (2012). Prevalence and predictors of major depression in HIV-infected patients on antiretroviral therapy in Bamenda, a semi-urban center in Cameroon. *PLoS ONE*, *7*(7). https://doi.org/10.1371/journal.pone.0041699

Geibel, S., Gottert, A., Friedland, B. A., Jeremiah, K., McClair, T. L., Mallouris, C., Kentutsi, S., Hows, J., Sprague, L., & Pulerwitz, J. (2020). Internalized stigma among people living with HIV: assessing the Internalized AIDS-Related Stigma Scale in four countries. *AIDS (London, England)*, *34*(July), S33–S42. https://doi.org/10.1097/QAD.0000000000002649

Gonzalez, A., Miller, C. T., Solomon, S. E., Bunn, J. Y., & Cassidy, D. G. (2009). Size matters: Community size, HIV stigma, and gender differences. *AIDS and Behavior*, *13*(6), 1205–1212. https://doi.org/10.1007/s10461-008-9465-2

Guse, T., de Bruin, G. P., & Kok, M. (2016). Validation of the Children's Hope Scale in a Sample of South African Adolescents. *Child Indicators Research*, *9*(3), 757–770. https://doi.org/10.1007/s12187-015-9345-z

Harada, K., & Chen, C. J. (1984). Analysis of a Resonant Converter Controlled by Triac. *IEEE Transactions on Industry Applications*, *IA-20*(1), 236–240. https://doi.org/10.1109/TIA.1984.4504398

Hasan, M. T., Nath, S. R., Khan, N. S., Akram, O., Gomes, T. M., & Rashid, S. F. (2012). Internalized HIV/AIDS-related stigma in a sample of HIV-positive people in Bangladesh. *Journal of Health, Population and Nutrition*, *30*(1), 22–30. https://doi.org/10.3329/jhpn.v30i1.11272

Hellmuth, J., Colby, D., Valcour, V., Suttichom, D., Spudich, S., Ananworanich, J., Prueksakaew, P., Sailasuta, N., Allen, I., Jagodzinski, L. L., Slike, B., Ochi, D., Paul, R., Phanuphak, P., Phanuphak, N., Kroon, E., Secdalan, C., Chomchey, N., Rattanamanee, S., … Robb, M. (2017). Depression and Anxiety are Common in Acute HIV Infection and Associate with Plasma Immune Activation. *AIDS and Behavior*, *21*(11), 3238–3246. https://doi.org/10.1007/s10461-017-1788-4

Id, S. K., Siril, H., Mcadam, K., Ainebyona, D., Somba, M., Mcadam, E., Oljemark, K., Todd, J., Andrew, I., Simwinga, A., Mleli, N., Makongwa, S., Liu, Y., Id, J. L., Haberlen, S., & Fawzi, M. C. S. (2020). *Agents of change : Comparing HIV-related risk behavior of people attending ART clinics in Dar es Salaam with members of their social networks*. 1–17. https://doi.org/10.1371/journal.pone.0238240

Kagee, A., & Martin, L. (2010). Symptoms of depression and anxiety among a sample of South African patients living with HIV. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *22*(2), 159–165. https://doi.org/10.1080/09540120903111445

Kakyo, T. A., Muliira, J. K., Mbalinda, S. N., Kizza, I. B., & Muliira, R. S. (2012). Factors associated with depressive symptoms among postpartum mothers in a rural district in Uganda. *Midwifery*, *28*(3), 374–379. https://doi.org/10.1016/j.midw.2011.05.001

Kessy, H. C. F. (2012). Differences In Self Esteem Between Adopted and Looked After Orphans In Dar es Salaam, Tanzania. *Huria: Journal of the Open University of Tanzania*, *12*(1), 132–151.

Kinyanda, E., Hoskins, S., Nakku, J., Nawaz, S., & Patel, V. (2011). Prevalence and risk factors of major depressive disorder in HIV/AIDS as seen in semi-urban Entebbe district, Uganda. *BMC Psychiatry*, *11*. https://doi.org/10.1186/1471-244X-11-205

Koen, M. P., van Eeden, C., & Wissing, M. P. (2011). The prevalence of resilience in a group of professional nurses. *Health SA Gesondheid*, *16*(1), 1–11. https://doi.org/10.4102/hsag.v16i1.576

Lauffenburger, J. C., Fontanet, C. P., Isaac, T., Gopalakrishnan, C., Sequist, T. D., Gagne, J. J., Jackevicius, C. A., Fischer, M. A., Solomon, D. H., & Choudhry, N. K. (2020). Comparison of a new 3-item self-reported measure of adherence to medication with pharmacy claims data in patients with cardiometabolic disease. *American Heart Journal*, *228*, 36–43. https://doi.org/10.1016/j.ahj.2020.06.012

Li, X., Huang, L., Wang, H., Fennie, K. P., He, G., & Williams, A. B. (2011). Stigma mediates the relationship between self-efficacy, medication adherence, and quality of life among people living with HIV/AIDS in China. *AIDS Patient Care and STDs*, *25*(11), 665–671. https://doi.org/10.1089/apc.2011.0174

Makhubela, M., & Mashegoane, S. (2017). Psychological validation of the rosenberg self-esteem scale (Rses) in south africa: Method effects and dimensionality in black african and white university students. *Journal of Psychology in Africa*, *27*(3), 277–281. https://doi.org/10.1080/14330237.2017.1294303

Marcus, M., Yasamy, M. T., van Ommeren, M., & Chisholm, D. (2012). Depression, a global public health concern. *WHO Department of Mental Health and Substance Abuse*, 1–8. http://www.who.int/mental_health/management/depression/who_paper_depression_wfmh_2012.pdf

Marwick, K. F. M., & Kaaya, S. F. (2010). Prevalence of depression and anxiety disorders in HIV-positive outpatients in rural Tanzania. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *22*(4), 415–419. https://doi.org/10.1080/09540120903253981

Milanović, S. M., Erjavec, K., Poljičanin, T., Vrabec, B., & Brečić, P. (2015). Prevalence of depression symptoms and associated socio-demographic factors in primary health care patients. *Psychiatria Danubina*, *27*(1), 31–37.

Mwakanyamale, A. A., & Yizhen, Y. (2019). Psychological maltreatment and its relationship with self-esteem and psychological stress among adolescents in Tanzania: A community based, cross-sectional study. *BMC Psychiatry*, *19*(1), 1–9. https://doi.org/10.1186/s12888-019-2139-y

Mwita, M., Sciences, A., Mathai, M., & Ng, P. (2019). Prevalence and correlates of depression

and anxiety disorders among patients on treatment for HIV / AIDS in Mwanza-Tanzania. *Tanzania Journal of Health Science*, *Vol.2(1)*(March), 38–50.

NACOPHA. (2013). *The People Living With HIV Stigma Index Report Tanzania December 2013*. *December*. http://www.stigmaindex.org/sites/default/files/reports/Tanzania STIGMA INDEX REPORT - Final Report pdf.pdf

Ngocho, J. S., Watt, M. H., Minja, L., Knettel, B. A., Mmbaga, B. T., Williams, P., & Sorsdahl, K. (2019). Depression and anxiety among pregnant women living with HIV in Kilimanjaro region, Tanzania. *PLoS ONE*, *14*(10), 1–15. https://doi.org/10.1371/journal.pone.0224515

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

Obadeji, A., O Ogunlesi, A., & O Adebowale, T. (2014). Prevalence and Predictors of Depression in People living with HIV/AIDS Attending an Outpatient Clinic in Nigeria. *Iranian Journal of Psychiatry and Behavioral Sciences*, *8*(1), 26–31. http://www.ncbi.nlm.nih.gov/pubmed/24995027%0Ahttp://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC4078690

Okwaraji, F. E., Onyebueke, G. C., & Nduanya, C. U. (2019). Assessment of depression and self esteem among outpatient hiv clinic attendees in a nigerian tertiary health institution. *The Journal of Medical Research*, *5*(2), 61–64. https://doi.org/10.31254/jmr.2019.5205

Onono, M., Odwar, T., Abuogi, L., Owuor, K., Helova, A., Bukusi, E., Turan, J., & Hampanda, K. (2020). Effects of Depression, Stigma and Intimate Partner Violence on Postpartum Women's Adherence and Engagement in HIV Care in Kenya. *AIDS and Behavior*, *24*(6), 1807–1815. https://doi.org/10.1007/s10461-019-02750-y

Pantelic, M., Sprague, L., & Stangl, A. L. (2019). It's not "all in your head": Critical knowledge gaps on internalized HIV stigma and a call for integrating social and structural conceptualizations. *BMC Infectious Diseases*, *19*(1), 32–37. https://doi.org/10.1186/s12879-019-3704-1

Parcesepe, A. M., Nash, D., Tymejczyk, O., Reidy, W., Kulkarni, S. G., & Elul, B. (2020). Gender, HIV-Related Stigma, and Health-Related Quality of Life Among Adults Enrolling in HIV Care in Tanzania. *AIDS and Behavior*, *24*(1), 142–150. https://doi.org/10.1007/s10461-019-02480-1

Phillips, T., Brittain, K., Mellins, C. A., Zerbe, A., Remien, R. H., Abrams, E. J., Myer, L., & Wilson, I. B. (2017). A Self-Reported Adherence Measure to Screen for Elevated HIV Viral Load in Pregnant and Postpartum Women on Antiretroviral Therapy. *AIDS and Behavior*, *21*(2), 450–461. https://doi.org/10.1007/s10461-016-1448-0

Pourhoseingholi, M. A., Vahedi, M., & Rahimzadeh, M. (2013). Sample size calculation in medical studies. *Gastroenterology and Hepatology from Bed to Bench*, *6*(1), 14–17. https://doi.org/10.22037/ghfbb.v6i1.332

Rao, D., Feldman, B. J., Fredericksen, R. J., Crane, P. K., Simoni, J. M., Kitahata, M. M., & Crane, H. M. (2012). A Structural equation model of HIV-related stigma, depressive symptoms, and medication adherence. *AIDS and Behavior*, *16*(3), 711–716. https://doi.org/10.1007/s10461-011-9915-0

Relf, M. V., Pan, W., Edmonds, A., Ramirez, C., Amarasekara, S., & Adimora, A. A. (2019). Discrimination, Medical Distrust, Stigma, Depressive Symptoms, Antiretroviral Medication Adherence, Engagement in Care, and Quality of Life among Women Living with HIV in North Carolina: A Mediated Structural Equation Model. *Journal of Acquired Immune Deficiency Syndromes*, *81*(3), 328–335. https://doi.org/10.1097/QAI.0000000000002033

Rezaei, S., Ahmadi, S., Rahmati, J., Hosseinifard, H., Dehnad, A., Aryankhesal, A., Shabaninejad, H., Ghasemyani, S., Alihosseini, S., Bragazzi, N. L., Raoofi, S., Kiaee, Z. M., & Ghashghaee, A. (2019). Global prevalence of depression in HIV/AIDS: A systematic review and meta-analysis. *BMJ Supportive and Palliative Care*, 1–9. https://doi.org/10.1136/bmjspcare-2019-001952

Richards et al. (2018). HHS Public Access. *Physiology & Behavior*, *63*(5), 1–18. https://doi.org/10.1080/09540121.2016.1191609.Socio-demographic

Rodkjaer, L. (2014). The Impact of a Holistic Intervention on Self-Efficacy and Risk of

Depression in HIV-Infected Individuals in Denmark. *Journal of HIV for Clinical and Scientific Research*, *March 2016*, 011–018. https://doi.org/10.17352/2455-3786.000003

Rosenberg, M. (1965). Society and the adolescent self-image. *Society and the Adolescent Self-Image*, 1–326. https://doi.org/10.2307/2575639

Rueda, S., Mitra, S., Chen, S., Gogolishvili, D., Globerman, J., Chambers, L., Wilson, M., Logie, C. H., Shi, Q., Morassaei, S., & Rourke, S. B. (2016). Examining the associations between HIV-related stigma and health outcomes in people living with HIV/AIDS: a series of meta-analyses. *BMJ Open*, *6*(7), e011453. https://doi.org/10.1136/bmjopen-2016-011453

Sandmire, H. F., Austin, S. D., & Bechtel, R. C. (1976). Experience with 40,000 Papanicolaou smears. *Obstetrics and Gynecology*, *48*(1), 56–60. https://apps.who.int/iris/bitstream/handle/10665/254610/WHO-MSD-MER-2017.2-eng.pdf;

Sayles, J. N., Hays, R. D., Sarkisian, C. A., Mahajan, A. P., Spritzer, K. L., & Cunningham, W. E. (2008). Development and Psychometric Assessment of a Multidimensional Measure of Internalized HIV Stigma in a Sample of HIV-positive Adults. *AIDS and Behavior*, *12*(5), 748–758. https://doi.org/10.1007/s10461-008-9375-3

Schönnesson, L. N., Diamond, P. M., Ross, M. W., Williams, M., & Bratt, G. (2006). Baseline predictors of three types of antiretroviral therapy (ART) adherence: A 2-year follow-up. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *18*(3), 246–253. https://doi.org/10.1080/09540120500456631

Seid, S., Abdu, O., Mitiku, M., & Tamirat, K. S. (2020). Prevalence of depression and associated factors among HIV/AIDS patients attending antiretroviral therapy clinic at Dessie referral hospital, South Wollo, Ethiopia. *International Journal of Mental Health Systems*, *14*(1), 1–8. https://doi.org/10.1186/s13033-020-00389-0

Shittu, R. O., Issa, B. A., Olanrewaju, G. T., Mahmoud, A. O., Odeigah, L. O., Salami, A. K., & Aderibigbe, S. A. (2013). Prevalence and correlates of depressive disorders among people living with HIV/AIDS, in north central Nigeria. *Journal of AIDS and Clinical Research*, *4*(11). https://doi.org/10.4172/2155-6113.1000251

Stangl, A. L., Earnshaw, V. A., Logie, C. H., Van Brakel, W., Simbayi, L. C., Barré, I., & Dovidio, J. F. (2019). The Health Stigma and Discrimination Framework: A global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. *BMC Medicine*, *17*(1), 18–23. https://doi.org/10.1186/s12916-019-1271-3

Stangl, A. L., Lloyd, J. K., Brady, L. M., Holland, C. E., & Baral, S. (2013). A systematic review of interventions to reduce HIV-related stigma and discrimination from 2002 to 2013: how far have we come? *Journal of the International AIDS Society*, *16*(3 Suppl 2). https://doi.org/10.7448/ias.16.3.18734

Sudfeld, C. R., Kaaya, S., Gunaratna, N. S., Mugusi, F., Fawzi, W. W., Aboud, S., & Fawzi, M. C. S. (2017). Depression at antiretroviral therapy initiation and clinical outcomes among a cohort of Tanzanian women living with HIV. *Aids*, *31*(2), 263–271. https://doi.org/10.1097/QAD.0000000000001323

Tao, J., Vermund, S. H., & Qian, H. Z. (2018). Association Between Depression and Antiretroviral Therapy Use Among People Living with HIV: A Meta-analysis. *AIDS and Behavior*, *22*(5), 1542–1550. https://doi.org/10.1007/s10461-017-1776-8

The Joint United Nations Programme on HIV/AIDS. (2018). *Global partnership for action to eliminate all forms of HIV-related stigma and discrimination*. 20. https://www.unaids.org/sites/default/files/media_asset/global-partnership-hiv-stigma-discrimination_en.pdf

Tran, B. X., Phan, H. T., Latkin, C. A., Nguyen, H. L. T., Hoang, C. L., Ho, C. S. H., & Ho, R. C. M. (2019). Understanding global HIV stigma and discrimination: Are contextual factors suffciently studied? (Gapresearch). *International Journal of Environmental Research and Public Health*, *16*(11). https://doi.org/10.3390/ijerph16111899

Tsai, A. C., Bangsberg, D. R., Frongillo, E. A., Hunt, P. W., Muzoora, C., Martin, J. N., & Weiser, S. D. (2012). Food insecurity, depression and the modifying role of social support among people living with HIV/AIDS in rural Uganda. *Social Science and Medicine*, *74*(12), 2012–2019. https://doi.org/10.1016/j.socscimed.2012.02.033

Tsai, A. C., Bangsberg, D. R., Kegeles, S. M., Katz, I. T., Haberer, J. E., Muzoora, C.,

Kumbakumba, E., Hunt, P. W., Martin, J. N., & Weiser, S. D. (2013). Internalized stigma, social distance, and disclosure of HIV seropositivity in rural uganda. *Annals of Behavioral Medicine*, *46*(3), 285–294. https://doi.org/10.1007/s12160-013-9514-6

Turan, B., Budhwani, H., Fazeli, P. L., Browning, W. R., Raper, J. L., Mugavero, M. J., & Turan, J. M. (2017). How Does Stigma Affect People Living with HIV? The Mediating Roles of Internalized and Anticipated HIV Stigma in the Effects of Perceived Community Stigma on Health and Psychosocial Outcomes. *AIDS and Behavior*, *21*(1), 283–291. https://doi.org/10.1007/s10461-016-1451-5

UNAIDS. (2003). Fact sheet - Stigma and Discrimination. *UNAIDS Fact Sheet on Stigma and Discrimination*, *December*, 1–3. http://data.unaids.org/publications/fact-sheets03/fs_stigma_discrimination_en.pdf

UNAIDS. (2020). UNAIDS DATA 2020. *UNAIDS DATA 2020*. https://www.unaids.org/sites/default/files/media_asset/2020_aids-data-book_en.pdf

Unnikrishnan, B., Jagannath, V., Ramapuram, J. T., Achappa, B., & Madi, D. (2012). Study of Depression and Its Associated Factors among Women Living with HIV/AIDS in Coastal South India. *Isrn Aids*, *2012*, 1–4. https://doi.org/10.5402/2012/684972

Uthman, O. A., Magidson, J. F., Safren, S. A., & Nachega, J. B. (2014). Depression and adherence to antiretroviral therapy in low-, middle- and high-income countries: a systematic review and meta-analysis. *Current HIV/AIDS Reports*, *11*(3), 291–307. https://doi.org/10.1007/s11904-014-0220-1

Van Dam, N. T., Sheppard, S. C., Forsyth, J. P., & Earleywine, M. (2011). Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *Journal of Anxiety Disorders*, *25*(1), 123–130. https://doi.org/10.1016/j.janxdis.2010.08.011

Vos, T., Allen, C., Arora, M., Barber, R. M., Brown, A., Carter, A., Casey, D. C., Charlson, F. J., Chen, A. Z., Coggeshall, M., Cornaby, L., Dandona, L., Dicker, D. J., Dilegge, T., Erskine, H. E., Ferrari, A. J., Fitzmaurice, C., Fleming, T., Forouzanfar, M. H., … Zuhlke, L. J. (2016). Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the

Global Burden of Disease Study 2015. *The Lancet*, *388*(10053), 1545–1602. https://doi.org/10.1016/S0140-6736(16)31678-6

Wilson, I. B., Fowler, F. J., Cosenza, C. A., Michaud, J., Bentkover, J., Rana, A., Kogelman, L., & Rogers, W. H. (2014). Cognitive and Field Testing of a New Set of Medication Adherence Self-Report Items for HIV Care. *AIDS and Behavior*, *18*(12), 2349–2358. https://doi.org/10.1007/s10461-013-0610-1

Wohl, A. R., Galvan, F. H., Myers, H. F., Garland, W., George, S., Witt, M., Cadden, J., Operskalski, E., Jordan, W., Carpio, F., & Lee, M. L. (2011). Do social support, stress, disclosure and stigma influence retention in HIV care for Latino and African American men who have sex with men and women? *AIDS and Behavior*, *15*(6), 1098–1110. https://doi.org/10.1007/s10461-010-9833-6

Wyk, M. M. Van. (2010). *Validation of a coping self-efficacy scale in an African context*. 1–41.

Yousuf, A., Musa, R., Isa, M. L. M., & Arifin, S. R. M. (2020). Anxiety and Depression Among Women Living with HIV: Prevalence and Correlations. *Clinical Practice & Epidemiology in Mental Health*, *16*(1), 59–66. https://doi.org/10.2174/1745017902016010059

APPENDIX

CONSENT FORMS

Appendix I: Informed Consent Form (English Version)

Financial Source/Donor: National Institute of Health (NIH)

WHAT ARE THE GENERAL MAIN THINGS YOU OUGHT TO KNOW ABOUT THE RESEARCH?

You are being asked to take part in this research study because you are a woman living with HIV. Research studies are voluntary and include only individuals who choose to take part. Please read this consent form carefully and take your time making your decision.

I Diana Humphrey Kisamo pursuing Master's degree in Clinical Psychology at Muhimbili University of Health and Allied Science will discuss this consent form with you please feel free to ask if you have any words or information that you do not clearly understand explained to you. The nature of the study, risks, inconveniences, discomforts, and other important information about the study are listed below.

This document will inform you of the study details and your potential role in it. You will be given a copy of it. Ask the researcher mentioned above if you have any questions concerning this research any time.

WHY IS THIS STUDY BEING DONE?

The aim of this study is to determine the prevalence of depression and its association to internalized stigma among women living with HIV in Tanzania as part of my degree award fulfillment. If you agree to be in this study, you will be asked to give your written consent. Only women living with HIV will be included in this study.

HOW MANY PEOPLE WILL TAKE PART IN THIS STUDY?

A total of 201 women living with HIV in Tanzania will take part in this study

WHAT IS INVOLVED IN THE STUDY?

If you agree to be in this study, you will be asked to sign this consent form.

If you agree to participate, you will be asked to complete a set of questions. An electronic tablet will be used to present the questions and capture your response to each question.

I will be available to assist you if you need assistance. The location to answer questions would be at the health center.

Participating in this study is voluntary, and if you decide not to participate or to respond to a certain question, there is no penalty or loss of benefits that you are already entitled to. We will not link your name with the information that you give us. All information will remain confidential

HOW LONG WILL I BE IN THIS STUDY?

You will participate in this study one time only for about sixty minutes. You can choose to stop participating at any time.

WHAT ARE THE RISKS OF THE STUDY?

There are no physical risks associated with this study. There is, however, the potential risk of loss of confidentiality. Every effort will be made to keep your information confidential; however, this cannot be guaranteed. When answering some of the questions, you might feel uncomfortable. You may refuse to answer any of the questions or stop participating at any time. Once you are finished answering the questions the data from the questionnaires will be input into the study's database, which is on a secured, protected server. Access to the database requires a password. No identifying information, like your name, will be included in this database.

ARE THERE BENEFITS TO TAKING PART IN THE STUDY?

If you agree to take part in this study, there is no direct benefit to you. However, they will be of benefit in providing information that can be used to develop interventions that will help women living with HIV to learn new skills to adapt to stigma and living with HIV.

WILL MY INFORMATION BE KEPT CONFIDENTIAL?

Study records that identify you will be kept confidential in accordance with international standards for conducting research on human subjects. Privacy Regulations provide safeguards for privacy, security, and authorized access. Except when required by law, you will not be identified by name, national identification number, address, telephone number, or any other direct personal identifier in study records.

Your information will be given a code number, and this number will be used on all documents so as not to reveal your identity. The list linking your name and code number will be kept in a

locked file cabinet in a locked office at the Muhimbili University of Health and Applied Sciences. All paper documents that could identify you, as well as all data that just has your code number on it, will be kept in a locked file cabinet in a locked office at the Muhimbili University of Health and Applied Sciences.

All electronic data will be kept in a sensitive electronic data (SED) folder at the Muhimbili University of Health and Allied Science. Your research related records may be reviewed in order to comply with national and international guidelines. Reviewers may include representatives of the Muhimbili University of Health and Allied Science Institutional Review Board. The study results will be retained in a research record for at least six years after the study is completed. At that time either the research information will be destroyed.

Additionally, you should understand that the researcher is not prevented from taking steps, including reporting to authorities, to prevent serious harm to yourself or others. If we learn in the course of this study that you pose a serious danger to yourself (for example, you are planning on attempting suicide) or to others (for example, you are planning to hurt someone else), we may refer you for an emergency evaluation, or may be required to alert appropriate authorities. If this happens, your participation in the study would no longer be confidential.

WHAT ARE THE COSTS?

There are no financial costs associated with participation.

WHAT ABOUT COMPENSATION?

If you chose to voluntarily participate in this study, you will receive 10,000 Tanzanian Schillings for transport compensation.

WHAT ABOUT MY RIGHTS TO DECLINE PARTICIPATION OR WITHDRAW FROM THE STUDY?

You may choose not to be in the study, or, if you agree to be in this study, you may withdraw from the study at any time. If you withdraw from the study, no new data about you will be collected for study purposes other than data needed to keep track of your withdrawal. Your decision to participate or to withdraw from the study will not involve any penalty or loss of benefits to which you are entitled, and will not affect your access to health care.

WHOM DO I CALL IF I HAVE QUESTIONS OR PROBLEMS?

If you have any questions related to this study or if you are in need of support, counselling or other Mental health services as a result of participating in this study please contact the principal researcher Diana Humphrey Kisamo +255 693169293 or my supervisor Dr. Saidi Kuganda +255713498335 or you can also contact the chairperson of the Research Senate and Publication committee, Dr.Bruno Sunguya- 0685-217272

STATEMENT OF CONSENT

"I have read the written information above. The purpose of this study, procedures to be followed, risks and benefits have been explained to me. I have been allowed to ask questions, and my questions have been answered to my satisfaction. I have been told whom to contact if I have questions, to discuss problems, concerns, or suggestions related to the research, or to obtain information or offer input about the research. I have read this consent form and agree to be in this study, with the understanding that I may withdraw at any time. I have been told that I will be given a signed and dated copy of this consent form."

Signature of the participant ……. Date ……

Signature of the researcher who Received Consent …… Date…….

Name of the researcher who Received Consent…….....

Appendix II: Informed consent Form (Swahili Version)

Financial Source/Donor: National Institute of Health (NIH)

VITU GANI VYA MUHIMU UNAHITAJI KUJUA KUHUSU UTAFITI HUU

Umehusishwa katika utafiti huu kwa sababu ni mwanamke unaeishi na VVU. Ufafiti huu ni wa hiari na unajumuisha wale walio tayari kushiriki tu. Tafadhali soma fomu hii ya idhini kwa umakini na tumia muda wako kufanya maamuzi.

Mimi Diana Humphrey Kisamo ninaesomea Shahada ya Uzamili ya Saikolojia Tiba katika chou Kikuu cha afya na sayansi shirikishi Muhimbili nitaongea na wewe kuhusu fomu ya idhini. Tafadhali kuwa huru kuuliza maneno au taarifa yoyote ambayo hujaelewa ili kuelimishwa zaidi.Taarifa zote kuhusu chimbuko la utafiti, athari, usumbufu na taarifa nyingine zote muhimu kuhusu utafiti zimeorodheshwa chini.

Waraka huu utakupa maelezo yote kuhusu utafiti na nafasi yako katika utafiti huu, na utapewa nakala yako. Tafadhali wakati wowote utakapokuwa na swali kuhusu utafiti huu muulize mtafiti au aliyetajwa hapo juu

KWA NINI TUNAFANYA TAFITI HII

Dhumuni la tafiti hii ni kuweza kutathmini kiwango cha sonona na uhusiano wake na unyanyapaaji wa ndani na mambo mengine ya kisaikolojia na jamii kati ya wanawake wanaoishi na Virusi vya Ukimwi Tanzania kama sehemu ya kutimiza tuzo yangu ya shahada ya uzamili .Ukikubali kushiriki kwenye tafiti hizi utatakiwa kujaza fomu ya idhini.. Wanawake waishio na VVU tu ndio wata shiriki kwenye utafiti huu.

NI WATU WANGAPI WATASHIRIKISHWA KWENYE TAFITI?

Kwa makadirio wanawake 201 waishio na VVU Tanzania watashirikishwa katika tafiti hizi..

MAMBO YALIYOMO KWENYE TAFITI HII

Ukikubali kuwa kwenye tafiti hii utatakiwa kujaza fomu ya idhini.Ukikubali kushirii utaulizwa maswali mbalimbali. Kifaa cha kielekroniki kitatumika kuulizia maswali na kunasa majibu yako, Nitakuwa hapo kutoa msaada pale utapohitaji.Eneo litakalotumika ni kituo cha afya cha serikali.

Kushiriki kwenye utafiti huu ni jambo la hiari, ikiwa hutataka kushiriki au kujibu baadhi ya maswali hakutakuwa na faini yoyote ile au kupoteza faida zozote zile ambazo ulikuwa unapata.Hatutaoanisha jina lako na maelezo utakayotoa. Maelezo yote yatabaki kuwa siri.

NI MUDA GANI UTAFITI UTACHUKUA?

Utashiriki kwenye utafiti huu mara moja tu kwa takribani ya dakika 60. Lakini unaweza kusitisha kushiriki muda wowote ule.

HATARI ZA UTAFITI HUU NI NINI?

Hakuna hatari zozote za kimwili kutokana na tafiti hizi, lakini kuna uwezekano wa kupoteza usiri. Tunafanya kila jitihada kuweza kuweka maelezo yenu kwa usiri mkubwa lakini hili halina dhamana. Kuna baadhi ya mambo au maswali yanaweza yakakufanya ukose uhuru kidogo, unaweza ukakataa kujibu maswali hayo au kuacha kushiriki muda wowote ule.

Baada ya kumaliza kujibu maswali majibu yako kutoka kwenye dodoso yatahifadhiwa kwenye hifadhi data ya utafiti ambayo iko salama. Kuweza kupata takwimu hizi utahitaji kuwa na neno la siri. Maelezo yoyote yatakayokutambulisha kama jina lako hayatawekwa kwenye takwimu hizo.

KUNA FAIDA GANI KUSHIRIKI KWENYETAFITI HIZI

Ukikubali kushiriki kwenye tafiti hizi hakuna faida ya moja kwa moja kwako ingawa kunaweza kuwa na faida ya kutoa taarifa ambazo zinaweza kutumika kuunda mbinu mbalimbali zinazoweza kuwasaidia wanawake wanaoishi na virusi vya ukimwi kujifunza njia mbadala za kukabiliana na unyanyapaaji na kuishi na virusi vya ukimwi.

JE MAELEZO YANGU YATAHIFADHIWA KWA USIRI?

Rekodi zote ambazo zinakutambulisha zitahifadhiwa kwa usiri kwa mujibu wa viwango vya kimataifa vinavyoeleza jinsi ya kufanya tafiti zinazohusu binadamu. Taratibu za usiri zinalinda usiri, usalama na upatikanaji wa mamlaka. Isipokuwa pale inapohitajika na sharia, hautatambulishwa kwa jina, namba yako ya taifa, anwani, namba ya simu au njia yoyote ya moja kwa moja kwenye tafiti hizi

Maelezo yako yatapewa namba ya siri na namba hiyo itatumika kwenye hati zote ili kuto kukutambulisha. Utambulisho unaooanisha jina lako na namba ya siri zitafungiwa kwenye dawati ndani ya ofisi iliyofungwa hapa chuo cha Afya na Sayansi Shirikishi Muhimbili na

zitahifadhiwa sehemu nyeti na salama. Hati zote za karatasi ambazo zina maelezo yako binafsi yakuweza kukutambulisha wewe na maelezo mengine yenye namba yako ya siri yatahifadhiwa na kufungiwa ndani ya kabati kwenye ofisi ambayo nayo itafungwa hapa chuo cha afya na sayansi shirikishi Muhimbili.

Takwimu zote za kielektronic zitahifadhiwa sehemu nyeti na salama chuo cha Afya na Sayansi Shirikishi Muhimbili. Rekodi zote zinazoendana na tafiti hii zitatathminiwa zizingatie muongozo wa kitaifa na kimataifa. Kutakuwa na wawakilishi kutoka bodi ya utathiminishaji chuo cha Afya na Sayansi Shirikishi Muhimbili. Matokeo ya tafiti hizi yatahifadhiwa kwa miaka sio chini ya sita mpaka pale tafiti zitakapokamilika, baada ya hapo maelezo yote yanaweza kufutwa na kuharibiwa.

Kwa kuongezea mkaguzi hazuiwi kuchukua hatua na kuripoti kwa uongozi ili kuzuia madhara yoyote unayoweza kujiletea wewe au wengine. Kwenye tafiti hizi tukigundua kwamba unaweza ukajiletea madhara yoyote (kwa mfano unafikiria kujiua) au kwa wengine (kwa mfano unafikiria kuwaumiza wengine) tutakupeleka kwa uchunguzi zaidi na kufikisha taarifa kwa uongozi husika. Hali hii ikitokea ushiriki wako kwenye tafiti hizi hautakuwa wa siri tena.

NI NINI GHARAMA ZAKE?

Hakuna gharama zozote za kifedha kuhusiana na ushiriki

VIPI KUHUSU MALIPO?

Ukikubali kushiriki kwenye tafiti hizi utalipwa shilingi 10,000 kwa ajili ya usafiri

HAKI ZANGU NI ZIPI NIKIKATAA KUSHIRIKI AU KUJITOA KWENYE TAFITI?

Unaweza kukataa kushiriki kwenye tafiti hizi, na pia unaweza kujitoa kushiriki muda wowote ule. Ukiamua kujitoa kwenye tafiti hizi hakuna takwimu mpya kuhusu wewe zitakazokusanywa zaidi ya zile zinazoonyesha kujitoa kwako. Maamuzi yako ya kushiriki au kujitoa kwenye tafiti hayatahusisha faini yoyote au kupoteza faida zozote unazotakiwa kupata au kuathiri matibabu yako

NANI WA KUWASILIANA NAE KWA MASWALI AU TATIZO?

Ukiwa na swali lolote kuhusiana na utafiti huu au kama unahitaji msaada au mshauri wa magonjwa ya akili au wahudumu wengine wa afya ya akili tafadhali wasiliana na mtafiti mkuu Diana Humphrey Kisamo +255 693169293 au msimamizi wangu wa utafiti Dr.Saidi Kuganda +255713498335 au unaweza wasiliana na Mwenyekiti wa kamati ya utafiti na machapisho ya chou Dr. Bruno Sunguya .

IDHINI

“Maelezo kuhusu tafiti, njia za kufuata, hatari na faida zote nimeelezewa. Nimepata nafasi ya kuuliza maswali na nimeridhishwa na majibu. Nimepewa mtu wa kuwasiliana nae pale nitakapokuwa na maswali, matatizo au mapendekezo yanayoendana na tafiti. Nimeisoma fomu hii ya idhini na kukubali kushiriki kwenye tafiti hii kwa uelewa kwamba naweza kujitoa muda wowote. Nimeambiwa nitapewa nakala ya fomu hii iliosainiwa.”

Sahihi au kidole gumba cha mshiriki …… Tarehe …….

Sahihi ya mtafiti aliyepokea Idhini ……..Tarehe……

Jina la mtafiti aliyepokea idhini …….

QUESTIONNAIRE

Appendix III: Questionnaire (English Version)

INTRODUCTION TO PARTICIPANT

Thank you for agreeing to participate in this study. This is a study about women's health and living with HIV.

I understand that some of these questions may be difficult for you to answer. Please take as much time as you need so I can gather information that is as accurate as possible. Of course, your responses will be confidential. Your name will not be reported to anyone, or recorded on any form. We will be using a unique identification number instead of your name; therefore, there will be no way to link your name to

this interview. If you cannot or do not wish to answer a certain question, tell me and I will just go on to the next question. Remember, there are no right or wrong answers to these questions; just answer them as best you can.

If anything is unclear, please stop me and I will try to make the question clearer. If at any point in the interview, you wish to stop, also let me know. Finally, I need to re-emphasize that all your answers are confidential, and the responses you provide will in no way affect your clinical care.

Section A: GENERAL INFORMATION [GI]

GI1. Participant ID Number

□ Tanzania ___ ___ ___ ___

G12. Site

□ urban (Magomeni)

□ semi-urban (Mbweni)

□ rural (Lushoto)

Section B: DEMOGRAPHICS [DEM]

I am now going to ask you some questions about your background. If anything is unclear, please stop me and I will try to make the question clearer.

B1. How old are you? [age]

___ ___ years

B2. Choose the answer that BEST applies to you now from the list I am going to read to you. Are you now... [marstat]

- ☐ Legally married/ Common law married [1]
- ☐ Not married, but living with a partner [2]
- ☐ Widowed [3]
- ☐ Divorced/Marriage annulled [4]
- ☐ Separated [5]
- ☐ Never Married [6]
- ☐ Other: [7]

B3. What is the highest grade or year of school you have completed? [educ]

- ☐ No schooling [1]
- ☐ Grades 1-6 [2]
- ☐ Grades 7-11 [3]
- ☐ Completed high school/ diploma or equivalent [4]
- ☐ Some college / Associate Degree [5]
- ☐ Completed 4 years of college (BA/BS) [6]
- ☐ Attended/completed graduate school [7]

B4. Household Income [income]

What is the average monthly income of your household income? Your household includes family members or other people who live with you and depend on that money. Include pay or money from all sources such as wages, salaries, tips, government grants, pension or retirement, and any other kind of support.

TANZANIA (schilling)

- ☐ 50,000 or less ($USD22.66) [1]
- ☐ 50,001 to 100,000 ($USD45.31) [2]
- ☐ 100,001 to 250,000 ($USD113.28) [3]
- ☐ 250,001 to 500,000 ($USD226.56) [4]
- ☐ 500,001 to 1,000,000 ($USD453.12) [5]
- ☐ 1,000,001 or more (>$USD453.12) [6]

INTERNALIZED STIGMA

I am going to ask you some more questions about HIV and perceptions that other people might have. Similar to the previous questions, some questions may seem hard to answer or ask about sensitive things. We are doing this to gather important information so we can better understand these issues and whether these issues need more attention among groups of women are living with HIV.

STEREOTYPES	**none of the time [1]**	**a little bit of the time [2]**	**some of the time [3]**	**most of the time [4]**	**all of the time [5]**
IS1. HIV is different than other diseases like cancer because people with HIV are judged.	□	□	□	□	□
IS2. People assume I have done something bad to get HIV.	□	□	□	□	□
IS3. Society looks down on people who have HIV.	□	□	□	□	□
IS4. People think that if you have HIV then you got what you deserve.	□	□	□	□	□
IS5. People blame me for having HIV.	□	□	□	□	□
IS6. People assume I slept around because I have HIV.	□	□	□	□	□
IS7. People think that if you have HIV you do not deserve to have children.	□	□	□	□	□
IS8. People are afraid to let someone with HIV adopt a child.	□	□	□	□	□
IS9. People think I am a bad person because I have HIV.	□	□	□	□	□
IS10. Medical providers assume people with HIV sleep around.	□	□	□	□	□
IS11. People lose their jobs because they have HIV.	□	□	□	□	□
IS12. People think you can't be a good parent if you have HIV.	□	□	□	□	□

INTERNALIZED STIGMA

(continued)

DISCLOSURE CONCERNS	**none of the time [1]**	**a little bit of the time [2]**		**some of the time [3]**	**most of the time [4]**	**all of the time [5]**
IS13. I am concerned if I go to the HIV clinic someone I now might see me.	□	□	□	□	□	□
IS14. I am concerned if I have physical changes from the HIV medicines people will know I have HIV.	□	□	□	□	□	□
IS15. I am concerned if I go to an AIDS organization someone I know might see me.	□	□	□	□	□	□
IS16. I am concerned people will find out I have HIV by looking at medical paperwork.	□	□	□	□	□	□
IS17. I am concerned that if I am sick people will find out about my HIV.	□	□	□	□	□	□
SOCIAL RELATIONSHIPS	**none of the time [1]**	**a little bit of the time [2]**		**some of the time [3]**	**most of the time [4]**	**all of the time [5]**
IS18. Nurses and doctors treat people who have HIV as if they are contagious.	□	□	□	□	□	□
IS19. Nurses and doctors dislike caring for patients with HIV.	□	□	□	□	□	□
IS20. I feel abandoned by family members because I have HIV.	□	□	□	□	□	□
IS21. People treat me as less than human now that I have HIV.	□	□	□	□	□	□
IS22. People avoid me because I have HIV.	□	□	□	□	□	□
IS23. People I am close to are afraid that they will catch HIV from me.	□	□	□	□	□	□

IS24. I feel like I am an outsider because I have HIV.	□	□	□	□	□	□

INTERNALIZED STIGMA

(continued)

SELF-ACCEPTANCE	**none of the time [1]**	**a little bit of the time [2]**	**some of the time [3]**	**most of the time [4]**	**all of the time [5]**
IS25. I feel ashamed to tell other people that I have HIV.	□	□	□	□	□
IS26. I am comfortable telling everyone I know that I have HIV.	□	□	□	□	□
IS27. My family is comfortable talking about my HIV.	□	□	□	□	□
IS28. It is important for a person to keep HIV a secret from co-workers.	□	□	□	□	□

Reference: Sayles JN, Hays RD, Sarkisian CA, Mahajan AP, Spritzer KL, Cunningham WE. (2008). Development and psychometric assessment of a multidimensional measure of internalized HIV stigma in a sample of HIV-positive adults. AIDS & Behavior, 12 (5), 748-58. DOI: 10.1007/s10461-008-9375-3.

DEPRESSION

(PHQ-9)

I would now like to ask you about other problems that people sometimes have. Similar to the questions we just answered, please decide how much the problems bothered or distressed you in the last two weeks, including today. Please indicate whether the symptom did not bother you at all, bothered you several days, more than half the days, or nearly every day. Over the last 2 weeks, how <u>often</u> have you been bothered by any of the following problems?

	Not At All	**Several Days**	**More than 7 Days**	**Nearly Every Day**
	1	**2**	**3**	**4**
PHQ1. Little interest or pleasure in doing things	□	□	□	□
PHQ2. Feeling down, depressed, or hopeless	□	□	□	□
PHQ3. Trouble falling or staying asleep, or sleeping too much	□	□	□	□
PHQ4. Feeling tired or having little energy	□	□	□	□
PHQ5. Poor appetite or overeating	□	□	□	□
PHQ6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	□	□	□	□
PHQ7. Trouble concentrating on things, such as reading the newspaper or watching television	□	□	□	□
PHQ8. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have	□	□	□	□

been moving around a lot more than usual.				
PHQ9. Thoughts that you would be better off dead or of hurting yourself in some way	☐	☐	☐	☐

Reference: Kroenke. K., Sptizer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med, 16 (9), 606-13. doi: 10.1046/j.1525-1497.2001.016009606.x

HIV ART ADHERENCE [ADH]

I will next ask you about your experience taking HIV medications. Please take as much time as you need so I can gather information that is as accurate as possible. Remember, there are no right or wrong answers to these questions; just answer them as best you can. If anything is unclear, please stop me and I will try to make the question clearer. As you answer the next set of questions, the timeframe for your answer should be the last 30 days or one month.

ADH1. In the last 30 days, on how many days did you miss at least one dose of any of your HIV medicines?	_____ days (write in number of days between 0 and 30)
ADH2. In the last 30 days, how good a job did you do at taking your HIV medicines in the way you were supposed to?	☐ very poor [1] ☐ poor [2] ☐ fair [3] ☐ good [4] ☐ very good [5] ☐ excellent [6]

ADH3. In the last 30 days, how often did you take your HIV medicines in the way you were supposed to?	□ never [1] □ rarely [2] □ sometimes [3] □ usually [4] □ almost always [5] □ always [6]

Reference: Wilson IB, Fowler FJ, Cosenza CA, Michaud J, Bentkover J, Rana A, Kogelman L & Rogers WH. (2014). Cognitive and field testing of a new set of medication adherence self-report items for HIV care. AIDS & Behavior, 18, 2349-2358. DOI:10.1007/s10461-103-0610-1.

COPING SELF-EFFICACY [CSE]

I'll now be asking you some questions about when things aren't going well for you or when you're having problems. I would like to know how confident or certain you are that you can do the following things. As you think of your answer, please let me know how confident or certain you are using the following rating scale.

0. Cannot Do At All
1. Moderately Certain Can Do
2. Certain Can Do

	Rating		
	Cannot Do At All [0]	Moderately Certain Can Do [1]	Certain Can Do [2]
CSE1 Sort out what can be changed, and what cannot be changed.			
CSE2 Get emotional support from friends and family.			
CSE3 Find solutions to your most difficult problems.			
CSE4 Take small steps to resolve a problem that is upsetting to me.			
CSE5 Leave options open when things get stressful.			
CSE6 Make a plan of action and follow it when confronted with a problem.			
CSE7 Take your mind off unpleasant thoughts.			

COPING SELF-EFFICACY [CSE]
(continued)

	Rating	
Cannot Do At All [0]	Moderately Certain Can Do [1]	Certain Can Do [2]
CSE8 Keep from feeling sad.		
CSE9Stop yourself from being upset by unpleasant thoughts.		
CSE10 Make new friends.		
CSE11 Get friends to help you with the things you need.		
CSE12 Make unpleasant thoughts go away.		
CSSE13 Think about one part of the problem at a time.		

Reference: Chesney MA, Neilands TB, Chambers DB, Taylor JM, Folkman S.(2006). A validity and reliability study of the coping self-efficacy scale. Br J Health Psychol, 11 (3), 421-37. DOI: 10.1348/135910705X53155.

NOTE:

Use Problem Focused Coping: CSE1, CSE3, CSE4, CSE5, CSE6, CSE13

Stop Unpleasant Emotions and Thoughts: CSE7, CSE8, CSE9, CSE12

Get Support from Friends and Family: CSE2, CSE10, CSE11

SELF-ESTEEM [SE]

I'll now be asking you some questions about your feelings. For each statement, please let me know if you strongly agree, agree, disagree, or strongly disagree.
Interviewer: Read each statement to the participant and ask the participant for her rating.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
SE1. I feel that I am a person of worth, at least on an equal plane with others.	□	□	□	□
SE2. I feel that I have a number of good qualities.	□	□	□	□
SE3. All in all, I am inclined to feel that I am a failure.	□	□	□	□
SE4. I am able to do things as well as most other people.	□	□	□	□
SE5. I feel I do not have much to be proud of.	□	□	□	□
SE6. I take a positive attitude towards myself.	□	□	□	□
SE7. On the whole, I am satisfied with myself.	□	□	□	□
SE8. I wish I could have more respect for myself.	□	□	□	□
SE9. I certainly feel useless at times.	□	□	□	□
SE10. At time, I think am no good at all.	□	□	□	□

Reference: Rosenberg, M. (1989). Society and the adolescent self-image. Revised edition. Middletown, CT:Wesleyan University Press.

Appendix IV: Questionnaire (Swahili Version)

DODOSO KWA AJILI YA KUSUDIO LA UTAFITI.

UTAMBULISHO WA MSHIRIKI

Asante kwa kukubali kushiriki kwenye huu utafiti. Ni utafiti ambao unahusu afya ya wanawake wanaoishi na Virusi Vinavyosababisha Ukimwi (VVU)

Natambua kuwa baadhi ya maswali haya yanaweza yakawa na changamoto kujibu. Tafadhali tumia muda mwingi kadri utakavyohitaji ili kusudi niweze kukusanya taarifa zenye usahihi kwa kadri inavyowezekana. Na kwa hakika, majibu yako yatabaki kuwa siri. Jina lako halitatajwa kwa mtu yeyote, wala kurekodiwa katika fomu yeyote. Tutatumia namba pekee ya utambuzi badala ya jina lako; kwa hiyo hakutakuwa na namna yoyote ya kuweza kuwianisha jina lako na usahili huu. Kama huwezi, au hutaki kujibu swali lolote, nijulishe na nitaendelea na swali lifuatalo. Kumbuka, hakuna jibu la kweli au la uongo kwa maswali haya; jibu kwa ubora kadri uwezavyo.

Kama kuna kitu chochote hakijaeleweka, tafadhali nisimamishe na nitajitahidi kulifanya swali lieleweke. Katika wakati wowote wa mahojiano ukihitaji kukatisha mahojiano haya, tafadhali nijulishe. Mwisho kabisa, napenda kusisitiza kuwa majibu yako yote utakayotoa yatabaki kuwa siri, na pia hayataathiri kwa namna yeyote matibabu yako.

Kipengele A: Taarifa za Awali [GI]

G1. Namba ya Mshiriki

___ ___ ___ ___

G2. Site

- o Urban (Magomeni)
- o Semi-urban (Mbweni)
- o Rural (Lushoto)

Sehemu B: Taarifa za Mshiriki [DEM]

Nitaanza kwa kuuliza maswali kuhusu historia yako. Kama nitakuwa sijaeleweka tafadhali nieleze na nitajitahidi kukuelewesha zaidi.

B1. Una miaka mingapi? [umri]

Miaka___ ___

B2. Chagua jibu linaloendana na wewe zaidi kwenye orodha nitakayokusomea. Kwa sasa wewe ni….

- Mwanandoa kisheria/ mwanandoa wa kawaida [1]
- Hujaolewa lakini mnaishi pamoja na mwenza [2]
- Mjane [3]
- Mtalaka/ ndoa imebatilishwa [4]
- Mmeachana [5]
- Hujawahi kuolewa [6]
- Mengineyo: _____ [7]

B3. Kiwango chako cha juu cha elimu ni kipi?

- Hujaenda shuleni [1]
- Darasa la nne au chini [2]
- Umemaliza shule ya msingi (darasa la saba) [3]
- Umemaliza shule ya sekondari, kidato cha pili [4]
- Umemaliza elimu ya sekondari, kidato cha nne [5]
- Umemaliza kidato cha sita (astashahada) [6]
- Cheti/Stashahada [7]
- Umemaliza chuo kikuu (shahada) au zaidi [8]

B5. Mapato ya familia

Kwa makadirio mapato yenu ya kaya kwa mwezi yapoje? Hii inajumuisha watu wote kwenye familia na wengineo wanaotegemea mapato hayo. Mapato hayo ni kutoka kwenye mshahara, na njia nyingine zote za kujipatia kipato kama malipo ya kazi, ruzuku, hela kutokana na kustaafu na nyinginezo

TANZANIA (shillings)

- 50,000 au pungufu ($USD22.66) [1]
- 50,001 mpaka 100,000 ($USD45.31) [2]
- 100,001 mpaka 250,000 ($USD113.28) [3]
- 250,001 mpaka 500,000 ($USD226.56) [4]
- 500,001 mpaka 1,000,000 ($USD453.12) [5]
- 1,000,001 au zaidi (>$USD453.12) [6]

UNYANYAPAA WA NDANI

Sasa nitakuuliza maswali zaidi kuhusu VVU na mtazamo ambao watu wengine wanaweza kuwa nao. Sawa na maswali yaliyotangulia, baadhi ya maswali yanaweza kuonekana ni magumu kuyajibu au yanaulizia vitu nyeti sana. Tunafanya hivi kukusanya taarifa ili kusudi tuweze kuelewa vizuri masuala haya na kuamua kama masuala haya yanahitaji kupewa kipaumbele katika makundi ya wanawake wanaoishi na VVU.

STEREOTYPES	**Hakuna wakati wowote [1]**	**Nyakati chache [2]**	**Baadhi ya wakati [3]**	**Wakati mwingi [4]**	**Wakati wote [5]**
IS1. VVU ni tofauti na magonjwa mengine kama kansa kwasababu watu wanaoishi na VVU wanahukumiwa (na jamii)	□	□	□	□	□
IS2. Watu wanadhani kuwa nimefanya jambo baya ndio maana nimepata VVU.	□	□	□	□	□
IS3. Jamii inawadharau watu wenye VVU.	□	□	□	□	□
IS4. Watu wanafikiri kwamba ukiwa na VVU unakuwa umepata ulichostahili.	□	□	□	□	□
IS5. Watu wananilaumu kwa kuwa na VVU.	□	□	□	□	□
IS6. Watu wanadhani nimepata VVU kwa kufanya ngono na watu wengi	□	□	□	□	□
IS7. Watu wanafikiri ya kwamba kama una VVU hustahili kuwa na watoto.	□	□	□	□	□
IS8. Watu wanaogopa kumruhusu mtu mwenye VVU kuasili mtoto	□	□	□	□	□
IS9. Watu wanafikiri mimi ni mtu mbaya kwasababu nina VVU.	□	□	□	□	□
IS10. Watoa huduma wa afya wanachukulia watu wenye VVU kuwa ni watu wanaofanya ngono na watu wengi	□	□	□	□	□
IS11. Watu wanapoteza kazi zao kwasababu wana VVU.	□	□	□	□	□
IS12. Watu wanafikiri huwezi kuwa mzazi mzuri ikiwa una VVU.	□	□	□	□	□

UNYANYAPAA WA NDANI
(inaendelea)

SHAKA LA KUWEKA WAZI HALI YA VVU	**Hakuna wakati wowote [1]**	**Nyakati chache [2]**	**Baadhi ya wakati[3]**	**Wakati mwingi [4]**	**Wakati wote [5]**
IS13. Nina shaka kuwa nikienda kliniki ya VVU mtu anayenifahamu anaweza kuniona.	□	□	□	□	□
IS14. Nina shaka kuwa kama nitakuwa na mabadiliko ya muonekano wa mwili wangu kwasababu ya dawa za VVU, watu watajua kuwa nina VVU.	□	□	□	□	□
IS15. Nina shaka kuwa kama nitaenda kwenye taasisi inayojihusisha na maswala ya VVU/UKIMWI mtu ninayemfahamu anaweza kuniona.	□	□	□	□	□
IS16. Nina shaka kuwa watu watajua kuwa nina VVU kwa kuangalia vyeti/makaratasi yangu ya hospitali.	□	□	□	□	□
IS17. Nina shaka kuwa kama ninaumwa watu watajua kuhusu hali yangu ya VVU.	□	□	□	□	□
MAHUSIANO YA KIJAMII	**Hakuna wakati wowote [1]**	**Nyakati chache [2]**	**Baadhi ya wakati[3]**	**Wakati mwingi [4]**	**Wakati wote [5]**
IS18. Manesi na madaktari wanahudumia watu wenye VVU kama vile ni watu wenye kuambukiza	□	□	□	□	□
IS19. Manesi na madaktari hawapendi kuwahudumia wagonjwa wenye VVU.	□	□	□	□	□
IS20. Ninahisi kutelekezwa na wanafamilia kwasababu nina VVU.	□	□	□	□	□

IS21. Watu wananitendea kama mimi sio binadamu kwasababu sasa nina VVU.	□	□	□	□	□
IS22. Watu wananikwepa kwasababu nina VVU.	□	□	□	□	□
IS23. Watu wangu wa karibu wana hofu kwamba watapata VVU kutoka kwangu.	□	□	□	□	□
IS24. Ninajiona ni kama mtu baki kwasababu nina VVU.	□	□	□	□	□

UNYANYAPAA WA NDANI
(inaendelea)

KUJIKUBALI	**Hakuna wakati wowote [1]**	**Nyakati chache [2]**	**Baadhi ya wakati[3]**	**Wakati mwingi [4]**	**Wakati wote [5]**
IS25. Ninahisi kuaibika nikiwaambia watu wengine kuwa nina VVU.	□	□	□	□	□
IS26. Niko huru kumwambia mtu yeyote ninayemfahamu kwamba nina VVU.	□	□	□	□	□
IS27. Familia yangu iko huru kuongea kuhusu hali yangu ya kuwa na VVU.	□	□	□	□	□
IS28. Ni muhimu kwa mtu kufanya VVU kuwa siri kwa wafanyakazi wenzake	□	□	□	□	□

Reference: Sayles JN, Hays RD, Sarkisian CA, Mahajan AP, Spritzer KL, Cunningham WE. (2008). Development and psychometric assessment of a multidimensional measure of internalized HIV stigma in a sample of HIV-positive adults. AIDS Behav, 12 (5), 748-58. DOI: 10.1007/s10461-008-9375-3.

SONONA (PHQ-9)

Mhojaji: Ningependa kukuuliza kuhusu matatizo ambayo watu wanakuwa nayo kwa wakati mwingine. Sawa na maswali ambayo tumeshajibu tafadhali amua ni kwa kiasi gani matatizo haya yamekusumbua au kukukera ndani ya wiki mbili zilizopita ikiwemo leo. Tafadhali onesha kama dalili hizi hazikukusumbua hata kidogo, zilisumbua kwa siku kadhaa, zilisumbua zaidi ya nusu ya siku hizo au takriban kila siku. Ndani ya wiki mbili zilizopita ni mara ngapi umekuwa ukisumbuliwa na matatizo yafuatayo?

PHQ1. Kutokuwa na hamu au raha ya kufanya kitu	HAMNA HATA KIDOGO	1
	SIKU KADHAA	2
	ZAIDI YA SIKU SABA	3
	TAKRIBAN KILA SIKU	4
PHQ2. Kuhisi huzuni sana au kukata tamaa	HAMNA HATA KIDOGO	1
	SIKU KADHAA	2
	ZAIDI YA SIKU SABA	3
	TAKRIBAN KILA SIKU	4
PHQ3. Matatizo ya kupata usingizi au kuweza kulala au kulala sana	HAMNA HATA KIDOGO	1
	SIKU KADHAA	2
	ZAIDI YA SIKU SABA O	3
	TAKRIBAN KILA SIKU	4
PHQ4. Kuhisi kuchoka au kutokuwa na nguvu	HAMNA HATA KIDOGO	1
	SIKU KADHAA	2
	ZAIDI YA SIKU SABA	3
	TAKRIBAN KILA SIKU	4
PHQ5. Kutokuwa na hamu ya kula au kula sana	HAMNA HATA KIDOGO	1
	SIKU KADHAA	2
	ZAIDI YA SIKU SABA	3
	TAKRIBAN KILA SIKU	4

PHQ6. Kujisikia vibaya-au kujiona kuwa umeshindwa kabisa au umejiangusha au kuikatisha tamaa familia yako	HAMNA HATA KIDOGO SIKU KADHAA ZAIDI YA SIKU SABA TAKRIBAN KILA SIKU	1 2 3 4
PHQ7. Kushindwa kuwa makini kwa mfano unaposoma gazeti au kuangalia TV	HAMNA HATA KIDOGO SIKU KADHAA ZAIDI YA SIKU SABA TAKRIBAN KILA SIKU	1 2 3 4
PHQ8. Kutembea au kuongea taratibu sana mpaka watu wakawa wameona tofauti, au kinyume chake kwamba hutulizani na unahangaika sana kuliko ilivyo kawaida	HAMNA HATA KIDOGO SIKU KADHAA ZAIDI YA SIKU SABA TAKRIBAN KILA SIKU	1 2 3 4
PHQ9. Mawazo kuwa ni afadhali zaidi ufe au ujidhuru kwa namna fulani	HAMNA HATA KIDOGO SIKU KADHAA ZAIDI YA SIKU SABA TAKRIBAN KILA SIKU	1 2 3 4
PHQ10.Kama ulitia alama matatizo yoyote, ni kivipi matatizo hayo yamefanya iwe vigumu kwako kufanya kazi yako, kushughulikia vitu nyumbani, au kuchangamana na watu wengine?	SIO VIGUMU KABISA VIGUMU KIASI VIGUMU SANA VIGUMU KABISA	1 2 3 4

KUJIJENGEA UFANISI/UVUMILIVU [CSE]

Sasa nitakuuliza baadhi ya maswali yanayohusiana na wakati ambapo mambo yako hayaendi vizuri au wakati una matatizo. Ningependa kufahamu kwa kiwango gani unajiamini au una uhakika kwamba unaweza kufanya mambo yafuatayo. Wakati unafikiria majibu yako, tafadhali nifahamishe ni kwa kiwango gani unajiamini au una uhakika kwa kutumia kipimo hiki.

0. **Siwezi kufanya kabisa**
1. **Naweza kufanya kwa wastani**
2. **Kwa uhakika naweza kufanya**

	Rating
CSE1 Uchambua mambo yapi unaweza kuyabadili, na yapi huwezi kuyabidili.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE2 Kupata msaada wa kihisia kutoka kwa marafiki na familia.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE3 Kutafuta suluhisho la matatizo yako ambayo ni magumu kabisa.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE4 Kuchukua hatua ndogo ndogo kutatua tatizo linalonikera	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya

CSE5 Kuamua kuwa na uchaguzi zaidi ya mmoja wakati mambo yanapokuwa na msongo	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE6 Kutengeneza mpango mkakati na kuufuata wakati unapokabiliwa na matatizo.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE7 Kutoa mawazo yanayokufedhehesha katika akili yako.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya

CSE8 Kujizuia kupatwa na huzuni.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE9 Kujizuia mwenyewe kutopata mfadhaiko kutokana na mawazo yanayokufedhehesha.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE10 Kutengeneza marafiki wapya.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE11 Kuwafanya marafiki wakusaidie vitu unavyohitaji.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE12 Kufanya mawazo yanayokufedhehesha yaondoke.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya
CSE13 Kufikiria kila sehemu ya tatizo kwa wakati wake.	0. Siwezi kufanya kabisa 1. Naweza kufanya kwa wastani 2. Kwa uhakika naweza kufanya

Reference: Chesney MA, Neilands TB, Chambers DB, Taylor JM, Folkman S.(2006). A validity and reliability study of the coping self-efficacy scale. Br J Health Psychol, 11 (3), 421-37. DOI: 10.1348/135910705X53155.

UZINGATIAJI WA DAWA ZA VVU [ADH]

Sasa nitakuuliza kuhusu uzoefu wako katika kutumia dawa za VVU. Tafadhali tumia muda mwingi kadri utakavyohitaji ili kusudi niweze kukusanya taarifa zenye usahihi kadri inavyowezekana. Kumbuka, hakuna jibu la kweli au la uongo kwa maswali haya; tafadhali jibu vile ambavyo unaona ni sawa kwa upande wako. Kama kuna kitu chochote hakijaeleweka, tafadhali nisimamishe na nitajitahidi kulifanya swali lieleweke. Utakapokuwa unajibu kundi la maswali yanayofuata, majibu yako yanapaswa kuwa ndani ya kipindi cha siku 30 au mwezi mmoja uliopita.

ADH1. Je, ndani ya siku 30 zilizopita, ni siku ngapi umekosa kutumia angalau dozi moja ya dawa zako za matatibu ya VVU?	Siku _____ (Andika namba za siku kati ya 0 na 30)
ADH2. Je, ndani ya siku 30 zilizopita, ni kwa kiwango gani umefanya kazi nzuri ya kumeza dawa zako za matibabu ya VVU kama ulivyotakiwa?	☐ Vibaya sana [1] ☐ Vibaya [2] ☐ Kawaida [3] ☐ Vizuri [4] ☐ Vizuri kiasi [5] ☐ Vizuri sana [6]
ADH3. Je, ndani ya siku 30 zilizopita, ni mara ngapi umetumia dawa zako za matibabu ya VVU kwa vile ulivyotakiwa?	☐ Sijawahi [1] ☐ Kwa nadra [2] ☐ Mara chache [3] ☐ Kawaida [4] ☐ Karibia mara zote [5] ☐ Mara zote [6]

Reference: Wilson IB, Fowler FJ, Cosenza CA, Michaud J, Bentkover J, Rana A, Kogelman L & Rogers WH. (2014). Cognitive and field testing of a new set of medication adherence self-report items for HIV care. AIDS & Behavior, 18, 2349-2358. DOI:10.1007/s10461-103-0610-1.

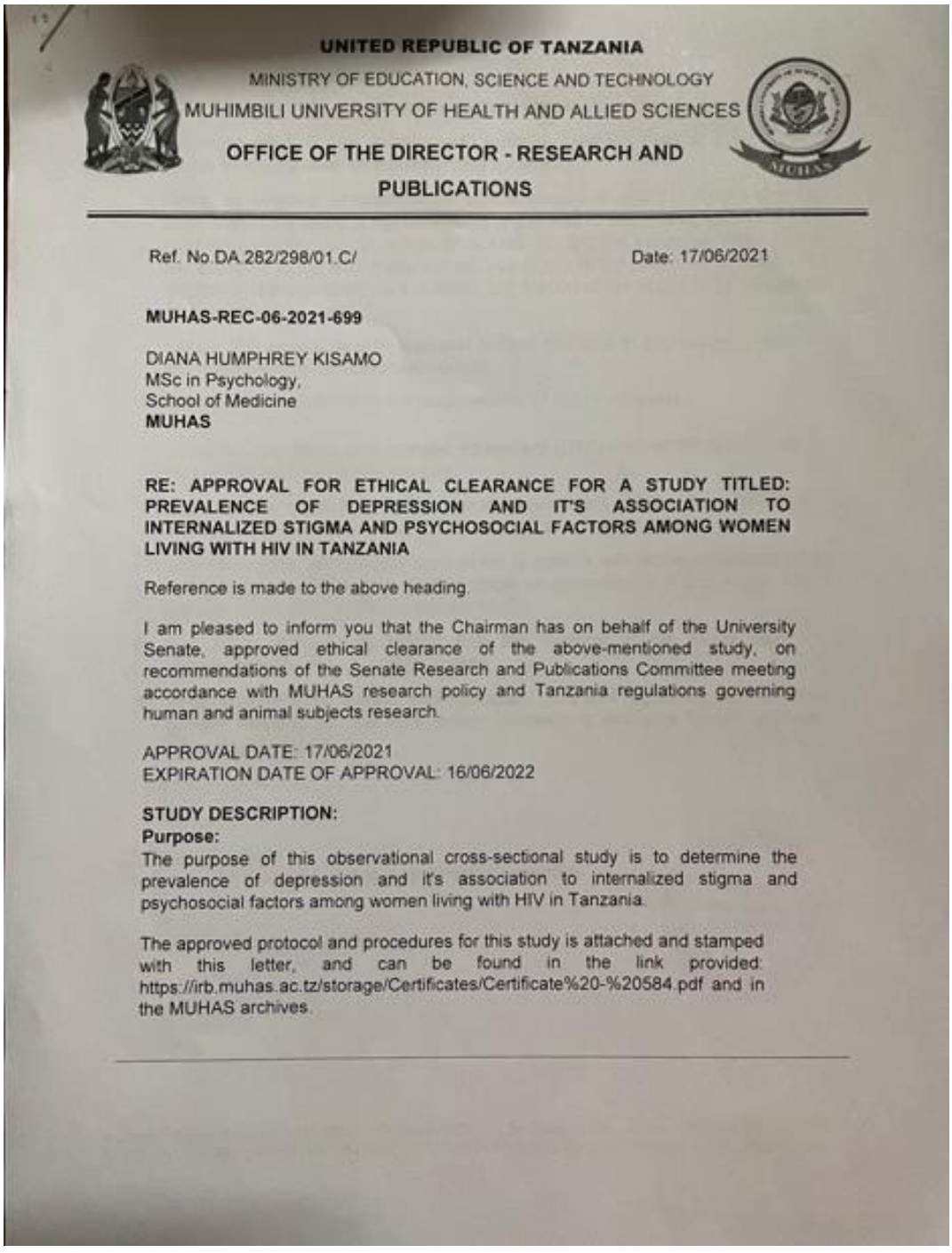
KUJITHAMINI [SE]

Sasa nitakuuliza baadhi ya maswali kuhusu hisia zako. Kwa kila kauli, tafadhali niambie kama unakubali kabisa, unakubali, hukubali, au hukubali kabisa.

Statement	Nakubali kabisa	Nakubali	Sikubali	Sikubali kabisa
SE1. Ninajisikia kuwa mtu mwenye thamani, angalau kwa usawa na watu wengine.	□	□	□	□
SE2. Ninajisikia kuwa na kiasi fulani cha sifa nzuri.	□	□	□	□
SE3. Kwa ujumla, ninaegemea upande wa kujisikia kwamba mimi ni mtu niliyeshindwa.	□	□	□	□
SE4. Nina uwezo wa kufanya vitu kama watu wengine wengi wanavyoweza.	□	□	□	□
SE5. Ninajisikia kutokuwa na vitu vingi vya kujivunia.	□	□	□	□
SE6. Nina mtazamo chanya kuhusu mimi mwenyewe.	□	□	□	□
SE7. Kwa ujumla, nimeridhika na nafsi yangu.	□	□	□	□
SE8. Natamani ningekuwa naiheshimu zaidi nafsi yangu.	□	□	□	□
SE9. Kwa hakika kuna wakati ninajisikia kuwa sina maana.	□	□	□	□
SE10. Kuna wakati, ninafikiria sifai kabisa.	□	□	□	□

Reference: Rosenberg, M. (1989). Society and the adolescent self-image. Revised edition. Middletown, CT:Wesleyan University Press.

Appendix V: Approval for Ethical Clearance



UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR - RESEARCH AND PUBLICATIONS

Ref. No.DA.282/298/01.C/ Date: 17/06/2021

MUHAS-REC-06-2021-699

DIANA HUMPHREY KISAMO
MSc in Psychology,
School of Medicine
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: PREVALENCE OF DEPRESSION AND IT'S ASSOCIATION TO INTERNALIZED STIGMA AND PSYCHOSOCIAL FACTORS AMONG WOMEN LIVING WITH HIV IN TANZANIA

Reference is made to the above heading.

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 17/06/2021
EXPIRATION DATE OF APPROVAL: 16/06/2022

STUDY DESCRIPTION:
Purpose:
The purpose of this observational cross-sectional study is to determine the prevalence of depression and it's association to internalized stigma and psychosocial factors among women living with HIV in Tanzania.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%20584.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain data transfer agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain material transfer agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country,
8. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.

Dr. Bruno Sunguya
Chairman, MUHAS Research and Ethics Committee

Cc: Director of Postgraduate Studies

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research & Publications
Box 65001

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1038, Direct Line:+255-22-2152489;Telefax:+255-22-2152489;E-mail:drp@muhas.ac.tz;Web:https://www.muhas.ac.tz

Appendix VI: Introduction Letter (Lushoto District)

UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.406/2019

21ST June, 2021

The Executive Director,
Lushoto District Council,
P.O. Box 5095,
LUSHOTO

Re: INTRODUCTION LETTER

The bearer of this letter is Dr. Diana Humphrey Kisamo, a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MSc. Clinical Psychology.

As part of her studies she intends to do a study titled: "***Prevalence of Depression and its Association to Internalized Stigma and Psychosocial Factors Among Women Living with HIV in Tanzania***"

The research has been approved by the Chairman of University Senate.

Kindly provide her the necessary assistance to facilitate the conduct of her research.

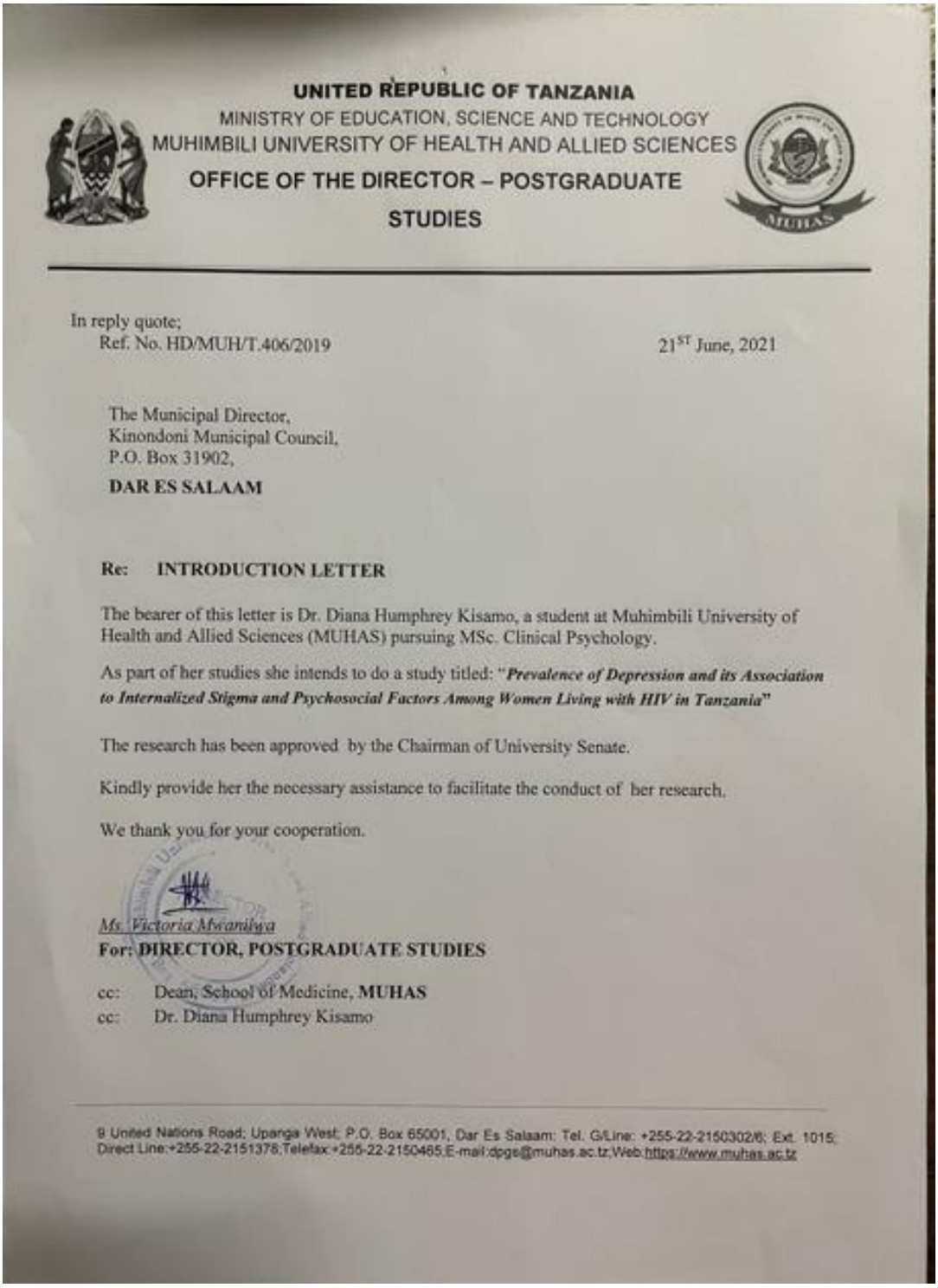
We thank you for your cooperation.

Ms. Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES

cc: Dean, School of Medicine, **MUHAS**
cc: Dr. Diana Humphrey Kisamo

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz

Appendix VII: Introduction Letter (Kinondoni Municipal)



UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.406/2019 21ST June, 2021

The Municipal Director,
Kinondoni Municipal Council,
P.O. Box 31902,
DAR ES SALAAM

Re: INTRODUCTION LETTER

The bearer of this letter is Dr. Diana Humphrey Kisamo, a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MSc. Clinical Psychology.

As part of her studies she intends to do a study titled: "***Prevalence of Depression and its Association to Internalized Stigma and Psychosocial Factors Among Women Living with HIV in Tanzania***"

The research has been approved by the Chairman of University Senate.

Kindly provide her the necessary assistance to facilitate the conduct of her research.

We thank you for your cooperation.

Ms. Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES

cc: Dean, School of Medicine, **MUHAS**
cc: Dr. Diana Humphrey Kisamo

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378,Telefax:+255-22-2150465,E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz