HIV RELATED STIGMA, DEPRESSIVE MORBIDITY AND TREATMENT ADHERENCE IN PATIENTS ON ANTIRETROVIRAL THERAPY ATTENDING THE MWANAYAMALA HOSPITAL, DAR ES SALAAM

Dr. Theonest Rutayuga, (MD)

Master of Medicine (Psychiatry and Mental Health) Dissertation

Muhimbili University of Health and Allied Sciences.

October, 2011

HIV RELATED STIGMA, DEPRESSIVE MORBIDITY AND TREATMENT ADHERENCE IN PATIENTS ON ANTIRETROVIRAL THERAPY ATTENDING THE MWANAYAMALA HOSPITAL, DAR ES SALAAM

By

Dr. Theonest Rutayuga, (MD)

A Dissertation Submitted in Partial fulfillment of the Requirement for the Master Degree in Psychiatry of Muhimbili University of health and Allied Sciences

Muhimbili University of health and Allied Sciences

October, 2011

CERTIFICATION

The undersigned certifies that he has read and hereby recommends this dissertation for acceptance by Muhimbili University of Health and Allied Sciences, a dissertation titled "HIV **Related Stigma, Depressive Morbidity and Treatment Adherence in Patients on Antiretroviral Therapy Attending the Mwanayamala Hospital, Dar es Salaam", p**resented in fulfillment of the Requirement for the Master Degree in Psychiatry of Muhimbili University of health and Allied Sciences.

_____

Prof. Sylvia Kaaya - Psychiatrist (Supervisor)

Date_____

DECLARATION AND COPYRIGHT

I, **Dr Theonest Rutayuga** do hereby declare that this is my original work and has never been submitted for a similar or other degree award in any other university.

Candidate's signature_____

ACKNOWLEDGEMENT

With all respect I would like to thank my supervisor, Prof. Sylvia Kaaya for her valuable tireless supervision, support, guidance and inspiration towards the preparation and completion of this dissertation.

I am thankful to Dr. Jessie Mbwambo, Dr. Fausta Philip and Dr. Margret Hogan for providing me with current literatures and their constructive comments during the research proposal development. Also I would thank all academic and other members of the department of psychiatry, Prof. Boy Sebit, Prof. Gad Kilonzo, Dr. Khalifa Mrumbi, Dr. Frank Masao, Mrs. Lusajo Kajula, Dr. Aziz Touraj, Dr. Samwel Likindikoki and Dr. Kissah Mwambene, Dr. Joyce Mugasa, Dr. Violet Mwanjali, for their fruitful support at various stages of my work.

My sincere gratitude should go to Dr. Germana Mmbaga of the department of Epidemiology and Biostatistics for her professional assistance in preparation of the study proposal and finally writing this dissertation. Also I would like to extend my gratitude to Mr. Faustine Mayunga for his assistance during data analysis.

I would like to express my thanks to Mrs. Ketula Mlasu and Mrs. Judith Malika Bendera for assisting me in data collection process. I also really appreciate the cooperation of staff working in the Mwananyamala Care and Treatment Clinic, and special thanks should go to the patients for their responses and cooperation during the interviews.

I would like to thank my colleague students in the department of psychiatry for their contribution and support during this work. My special thanks should go to Dr. Cassian Nyandindi for his encouragement.

I thank the Mwananyamala Municipal Hospital, CTC and MDH program authorities for allowing me to conduct this study at their health facilities and for the sincere support they offered me throughout the period of field work. Also my thanks should go to Dr. Gunini

Kamba, the Kinondoni Municipal Medical Officer of Health for accepting me to conduct this study in the district.

My sincere gratitude should go to my sponsor, Tanzania Government, the Ministry of Health and Socio welfare for providing me with funds to cover part of the costs for this work.

Lastly, but not least I thank my family especially my wife Edna and our daughter Lisa for their understanding and patience for the moments I could not pay attention to their needs due to high demands of this work.

ABSTRACT

Introduction: There are about 33 million people who are living with HIV and AIDS worldwide and approximately 67% are in sub Saharan African countries. In Tanzania 2 million people are living with HIV/AIDS and 30% of them are in need of antiretroviral treatment.

Several studies highlighted some psychological experiences in people living HIV/AIDS including feelings of shame, guilt, helplessness, self-blame and self-isolation that suggest negative self-image and this negative self-image has influence on accessing medical care.

Stigma and depressive morbidity related to HIV infection has serious individual and public health ramifications, including reluctance to testing for HIV, refusal to initiate treatment as well as poor treatment compliance and hence increased risk of HIV disease transmission and progression.

No studies reported in Tanzania have systematically explored associations between HIV related stigma, depressive morbidity and uptake of medical recommendation hence limited local information is available for improvements in uptake of medical recommendations.

Objectives: To determine the influences of HIV AIDS stigma and depressive morbidity on uptake of selected medical recommendations among persons living with HIV (PLHA) attending the Mwananyamala HIV and AIDS care and treatment clinic (CTC).

Study design: Hospital based descriptive cross sectional study where quantitative methods were used to collect information.

Methods: An Average of 6 per day of 370 randomly selected patients were invited to participate in the study then they were assessed, on socio demographic and socioeconomic measures, uptake of selected medical recommendations and depressive morbidity and

HIV related stigma measures. Outcome measures included; antiretroviral adherence, defined as adequate if 95% or more medications were taken as prescribed in the past 4 days analyzed dichotomously; whether counseling sessions were attended or not during the index clinic visit and whether the last scheduled clinic visit was kept or not, also reported dichotomously and all summarized as simple frequencies. The predictors of interest explored were HIV related stigma and depressive symptoms. The magnitudes of stigma and depressive morbidity were computed using sum scores of responses; depressive morbidity was summarized as mild, moderate and severe and levels of stigma as tertiles. Logistic regression models using a backwards removal method were used to determine the strength of associations between the predictors of interest and the outcomes after adjusting for socio-demographic and economic confounders.

Results: A total of 220 participants were included in the study, 69 (31.4%) being males and 151 (68.6%) females. Mean age (SD) was 35.5 (9.7) years with an age range of 18 to 68 years. All patients were on ART medication for not more than six months. The proportion non adherent to ART medication was 21.3%, and the proportion missing the last scheduled clinic visit was 19.1%. In linear regression analysis participants reporting divorce/widow (er) or cohabiting status were more likely to adhere to ART medication than those that were married (p value<0.01). In adjusted multivariate models, mild depressive morbidity was independently associated with non-adherence to the last scheduled clinic visit (OR 2.7; 95% confidence interval 1.02, 7.27; p<0.05) and attending individual counseling (OR 0.20; 95% confidence interval 0.05, 0.85 p <0.05) and was marginally associated with non adherence to ART medication (OR 2.6; 95% confidence interval 0.98, 6.82; p=0.06). Low level of stigma was independently associated with adequate adherence to ART medication (OR 3.00, 95% confidence interval 1.34, 6.91, p<0.01). No significant association was shown between internalized stigma and attending scheduled clinic visits or individual counseling during the index visit, or between depression and attending individual counseling sessions during the index visit.

Conclusion and recommendations: Internalized stigma and depressive morbidity are challenges to the uptake medical of medical recommendations among PLHA. The study showed that PLHA who experience internalized stigma and depressive morbidity are more likely to be recently non-adherent to ART medications, while depressive morbidity influenced attending the last scheduled clinic visit. It is therefore recommended that interventions for recognition and management of both internalized stigma and depressive morbidity be a focus of the activities of health care workers in HIV and AIDS treatment clinics as one way of improving uptake of medical recommendations and including retention in HIV care and treatment.

TABLE OF CONTENTS Page

LIST OF TABLES

ACRONYMS/ABBREVIATIONS

ACCTG	Adapted California Cooperative Treatment Group
AIDS	Acquired Immunodeficiency Syndrome
ARVs	Anti retroviral drugs
ART	Anti retroviral Therapy
CIS-R	Clinical Interview Schedule- Revised
CTC	Care and Treatment Clinic
DSM-1V	Diagnostic Statistical Manual Version IV
HIV	Human Immunodeficiency Virus
MDH	Muhimbili Dar city Council and Harvard HIV care and treatment Program
NACP	National Aids Control Program
PHQ-9	Patient Health Questionnaire- 9
PLHA	People living with HIV/AIDS
UNAIDS	United Nations Program on HIV/AIDS
WHO	World Health Organization

CHAPTER ONE

1.0 INTRODUCTION AND LITERATURE REVIEW

Magnitude of HIV AIDS

Globally, 33.4 million people were estimated to be living with HIV and AIDS at the end of 2008. Sub Saharan Africa was the worst-affected region as more than two thirds (67%) of all people living with HIV live in this region, the majority being women. There was an average of 2.1 million deaths due to AIDS globally, Sub Saharan Africa contributing two thirds of all deaths. This makes HIV a leading cause of death and the cause of a 15-year drop in life expectancy in Sub Saharan Africa (UNAIDS/WHO, 2009.)

The Tanzania HIV/AIDS and Malaria Indicator Survey (2007-2008) estimated 6% of adults aged 15-49 years are infected with HIV, the prevalence being higher among women than men (7% and 5%, respectively). In the year 2007, the National AIDS Control Program (NACP) estimated that 2.0 million people were living with HIV/AIDS and about 30% of them were in need of antiretroviral drugs (ARVs).

AIDS-related stigma and discrimination have serious individual and public health ramifications; these include a reluctance to be tested for HIV and to disclose positive test results to partners, as well as poor treatment adherence and hence increased risk of HIV disease transmission and progression. Nyablade et al in 2005 demonstrated that AIDS-related stigma is a common phenomenon worldwide that occurs in a variety of contexts including the family, community, workplace, and in health care settings. A cross sectional study conducted in USA on stigma showed that about 67% of people living with HIV (PLHA) reported to have experienced high levels of stigma (Sayles, 2007). A survey in Cape Town, South Africa examining the prevalence of discrimination experiences and internalized stigma among 420 HIV-positive men and 643 HIV-positive women found that 40% of persons with HIV/AIDS had experienced discrimination resulting from having HIV infection (Simbayi, et al, 2007)

Understanding of HIV Related Stigma

Definition of Stigma

Goffman (1963) defined stigma as a discrediting attribute and persons who possess this attribute are reduced in other people's minds from whole and normal persons to tainted and discounted ones. Because stigma is a social construct and the stigmatized person is a product of the society that generates stigma, the stigmatized person may believe the negative stereotypes attached to HIV related stigma. Self prejudice may occur that manifests in accepting that they deserve to be treated poorly and unequally and hence exempt themselves from available social resources that may include health care.

Disease related stigma is not a new phenomenon. It has been documented with regards to leprosy, tuberculosis and syphilis. Diseases associated most frequently with stigma tend to be incurable and they have either severe, progressive and disfiguring outcomes or modes of transmission that are thought to be under the control of a person's own behavior (Herek et al., 1998).

UNAIDS defines HIV-related stigma and discrimination as a process of devaluation of people either living with or associated with HIV and AIDS. Discrimination follows belief in negative stereotypes associated with stigma resulting in unfair and unjust treatment of an individual based on his or her real or perceived HIV status. (UNAIDS, 2003).

Forms of Stigma

A comparative analysis of findings from studies conducted in Ethiopia, Tanzania, Vietnam, and Zambia (Ogden and Nyblade, 2005), identified four major forms in the presentation of stigma namely: physical and social exclusion, violence**,** loss of identity, rights and status and internalized stigma. The externalized and internalized forms of stigma are considered by interventionists as distinct and stigma has often been classified into these two categories namely felt (internalized) and enacted (externalized) stigma.

Internalized Stigma includes the way individuals think about themselves. PLHA tend to experience feelings of shame, inferiority, and embarrassment or lack a sense of purpose. Perhaps related to these experiences is a belief in the stereotype that HIV infections are the result of sexual misbehavior. This generates both prejudice and self prejudice and the affected persons may believe they deserve to be poorly treated. When such perceptions are internalized the result is self stigma. The person's self concept is congruent with the stigmatizing responses of others as a result they accept their discredited status as valid (Herek and Glunt, 1998).

Enacted Stigma follows prejudice and is the unfair and unjust treatment of an individual based on his or her real or perceived HIV status. It occurs when a distinction is made against a person on the basis of belonging, or being perceived to belong, to a "particular group" (UNAIDS, 2003). Inequalities in social and economic power are the foundation on which stigmatization is promulgated. When women and other groups including the poor and the homeless become infected with HIV or develop AIDS, their already disadvantaged status, subjects them to higher levels of differential treatment (Anish et al, 2008). In acknowledging that stigma functions at the intersection of culture, power and difference, Parker and Aggleton (2003) argued that stigmatization is central to the constitution of the prevailing social order.

Various studies have identified the health care sector as one of the contexts within which PLHA experience stigma and discrimination often for the first time. This is not surprising given observations by Anish et al (2008) and Parker and Angelton (2003) that are noted above; power differentials between providers and users of services are inherent and can become problematic if stigma awareness is not high amongst health service providers. In-depth interviews in India, with 884 hospital staff and HIV-infected patients and observations of hospital practices highlighted drivers and manifestations of stigma. These included testing patients for HIV without consent, disclosing test results to relatives and other health care workers without the consent of patients, labeling of HIV-infected patients' belongings or files, and unwarranted use of precautions to prevent transmission. One reason given for sharing a patient's status was to encourage health care workers to take adequate precautions to protect themselves while treating or handling the patients (Mahendra et al, 2007). A study conducted

in Belize central America, on stigmatization of patients among doctors and nurses in public hospitals revealed that stigmatization was highest (29%) for attitudes of blame/judgment, and disclosing of patient's HIV AIDS status to colleagues (Andrewin et al 2008). Furthermore, in the Eastern Caribbean where the prevalence of AIDS is second only to Sub Saharan Africa, a study revealed that PLHA reported feeling scorned by some service providers and they identified instances of passive neglect and active refusal by hospital and clinic staff to provide care (Rutledge et al., 2008). In Ethiopia common forms of stigma and discrimination reported to occur in health care settings included differential marking or labeling patients HIV diagnosis on observation charts or in the wards, gossiping about patients, verbal harassment, avoidance and isolation of patients, and referrals for testing without necessary counseling (Banteyerga et al., 2004). A very similar survey in Tanzania reports on a wide range of enacted stigma incidents that were observed in health care settings. These were categorized broadly as, neglect (e.g., making a client wait longer in hope of avoiding treating them), differential treatment (e.g., requiring HIV testing before providing care), denial of care and unnecessary referrals, testing and disclosing HIV status without consent, and verbal abuse/gossip (Nyablade et al, 2005).

Causes of Stigma

Incomplete and contradictory knowledge can contribute to persistence of stigma, even when people have some basic understanding of HIV and AIDS. A survey which included 402 participants in Ethiopia revealed 15% of respondents thought that HIV can be transmitted through kissing, 30% thought it can be transmitted through mosquito bites and 10% through sharing food (Banteyerga et al., 2004).

Fear that HIV can be transmitted through casual contact, for example through non-invasive interactions such as touching a person living with HIV or sharing dining plates and utensils can also lead to stigma. A comparative community based study conducted in four international sites (Thailand, South Africa, Zimbabwe and Tanzania) showed that despite widespread and accurate knowledge of HIV transmission participants in all states described

fear of transmission from causal contact and this fear led to the social isolation and neglect of PLHA (Suzanne et al., 2009). A study that used qualitative data collection methods in Tanzania reported high levels of fear of contagion among health care providers, which was associated with lack of understanding of HIV transmission and of the practice of universal precautions (Mbwambo et al., 2004). A subsequent survey conducted in Tanzania in 2004-5 confirmed these fears were deeply embedded: Nearly half of participants in the general population cited at least one of 12 scenarios of casual contact that they feared could transmit HIV. Exposure to saliva was shown to be the most common fear. (Ogden et al., 2005).

Values driven by social, gender and sexual norms often link people with HIV to assumed "immoral" behaviors. For example, assumptions are often made that people living with HIV were infected through behavior considered socially "improper" or "unacceptable" such as being unfaithful or promiscuous, leading to shame and blame for the people living with HIV, and often their families. A qualitative study on stigma and discrimination in Vietnam used in depth interviews to show that assumption of HIV infection were linked almost synonymously to social evils. These imaginations of blame and judgment were made by informants from the general population as well as policy makers and within the health care system (Hong et al., 2004). A baseline survey among health workers in India assessed blaming or judgmental attitudes towards PLHA and revealed the majority of health workers seemed to associate HIV with negative or immoral behaviours. For example, over two-thirds (68%) of respondents indicated that HIV is spread by immoral behaviours. In the same study HIV was also associated with populations at higher risk of exposure, for example, almost one half (43%) of respondents indicated that only women who were sex workers were at risk of acquiring HIV infection. A substantial proportion of respondents expressed explicit blaming attitudes; almost 40 percent indicated that men with HIV deserved to be infected and ill (Mahendra, 2007). In Nigeria the results of a study among nurses and laboratory technicians showed that 35 percent felt that HIV-positive people deserved the illness as punishment for their "sexual misbehaviors" (Adebajo et al., 2003). In Tanzania a qualitative study revealed that some doctors and nurses took excessive precautions when caring for HIV positive patients because

they feared the stigma that is attached to being HIV infected. It was further shown though health care workers may become infected at work as an occupational hazard fear that the community could label them as being promiscuous or immoral (Mbwambo et al., 2004).

Impact of HIV AIDS Related Stigma

HIV related stigma has been associated with limited private and public disclosure of HIV status, poor practice of preventive behaviors, such as using condoms, discussing safer sex with a partner, postponing or rejecting care and traveling outside local communities in search of non-stigmatizing care (Nyablade et al., 2003).A cross-sectional study among 202 PLHA conducted in the USA on the associations of stigma with self reported access to medical care and ART adherence revealed one third of the participants reported high levels of stigma; 77% had poor access to medical care and 43% reported suboptimal ART adherence. Only 11% reported no regular source of HIV care. In adjusted analysis stigma was found to be significantly associated with poor access to care (OR=4.42, 95% CI 1.88-10.37) but not ART adherence (Sayles et al., 2007).

Another South African study showed that among 903 PLHA who sexually active, 378 (42%) had sex with a person to whom they had not disclosed their status in the previous three months for fear of being rejected. It was also noted that participants who had not disclosed their HIV status to their sex partners were more likely to have multiple sex partners, HIV negative partners, partners of unknown HIV status and unprotected intercourse with non concordant sex partners (Simbayi et al, 2007).

HIV Related Stigma and Depression

HIV-related internalized stigma, with attendant feelings of shame, guilt and concern regarding disclosure is often associated with a negative self-image that may in turn exert subtle negative influences on social interactions and perceptions of the self. Such negative perceptions of self are among psychological predictors of disorders such as major depression. Almost all people

who receive an HIV diagnosis experience, at some point, feelings of self-hatred, guilt and shame that can be expressed as depression and despair with social withdrawal and some PLHA reported to simply wait for death, (Hong, et al 2004). A cross-sectional survey among 667 PLHA in the Netherlands in six social settings revealed three manifestations of stigmatizing responses in the family setting namely; receiving advice to conceal one's status, being avoided and being treated with exaggerated kindness. One manifestation in healthcare settings included awkward social interactions. The stigmatizing responses predicted psychological distress in PLHA (Stutterheim, 2009). A survey study conducted in Thailand among 408 PLHA on associations between HIV related stigma and depression used internalized and perceived stigma measures. Findings showed that depression was significantly associated with both dimensions of stigma. Perceived stigma was regressed on internalized shame while controlling for other independent variables. The findings showed that higher levels of perceived stigma were significantly associated with higher levels of internalized shame (Li et al., 2008).

Fewer studies in sub Saharan African have assessed associations between depressive morbidity and HIV related stigma among PLHA. A cross sectional qualitative study recruiting participants from Tanzania, Zambia and Ethiopia, revealed amongst PLHA three thematic areas of internalized stigma that were associated with despondency and feelings of helplessness. These included PLHA internalized guilt and blame for being positive and acceptance of inferior status in society; PLHA that were psychologically affected became despondent and tended to isolate themselves and even giving up future aspirations (Nyablade, 2003). A cross sectional survey among 347 PLHA attending psychosocial group in a Western Kenyan provincial town using the Patient Health Questionnaire (PHQ- 9) depression assessment tool revealed that 34% of this population had depressive morbidity (Monhan et al., 2008). A similar study in rural Tanzania revealed that 20% of the respondents had significant psychiatric morbidity, the majority (12.7%) with depressive morbidity (Marwick and Kaaya, 2008).

1.2. PROBLEM STATEMENT

Almost 30 years after the first AIDS case was diagnosed in Tanzania in 1983, HIV related stigma remains a persistent problem. HIV related stigma in settings outside Tanzania, has been associated with reluctance to disclose HIV sero-status, poor adherence to medication and increased risk of psychological disabilities. No systematic exploration of the association between HIV related stigma and psychological wellbeing has been reported in the Tanzania context.

1.3. RATIONALE

Few quantitative studies of psychological factors associated with HIV related stigma have been conducted in Tanzania despite the growing body of knowledge about HIV infection particularly in health care settings. Better understanding of associations between stigma and depression will inform more comprehensive strategies for disclosure of HIV serostatus, and HIV transmission risk initiatives amongst PLHA including adherence to ART treatment.

1.4. CONCEPTUAL FRAME WORK

Figure 1 below, outlines the hypothesized links between sociodemographic and economic, factors, stigma, depression and uptake of clinic based medical interventions. Greater social adversity may increase vulnerability to HIV associated stigma that may in turn decrease self esteem and increase depressive symptomatology. High depressive symptomatology may inlfuence uptake of medical recommendations

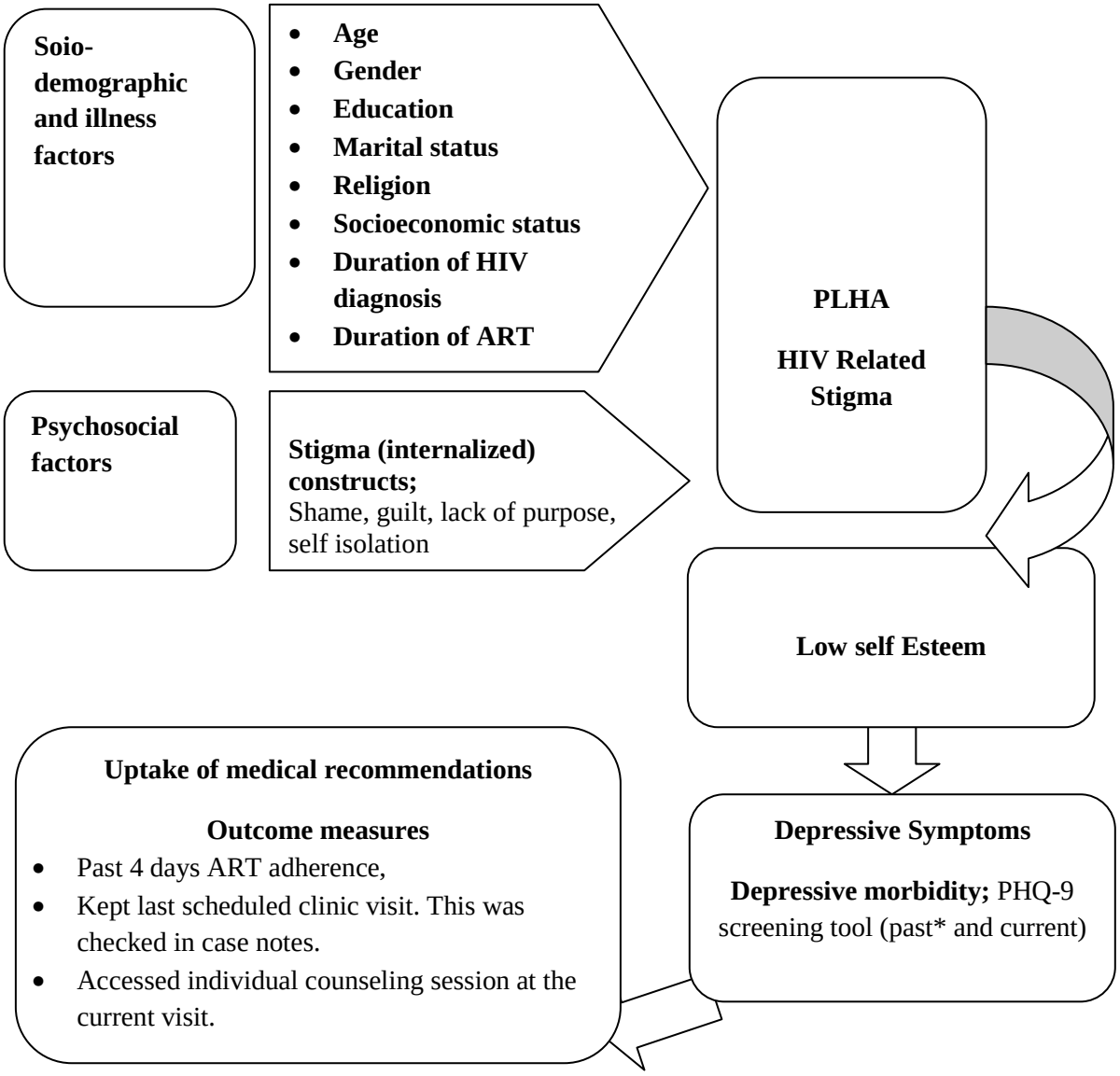

Figure 1: Possible associations between socio-demographic/economic factors, felt stigma and depression in the process towards effects on uptake of medical recommendations in PLHA.

Past* = Since knowledge of HIV diagnosis

1.5. RESEARCH QUESTIONS

1. What is the extent of HIV related stigma among PLHA attending the Mwananyamala HIV and AIDS care and treatment clinic (CTC)?

2. What are the common forms of stigma experienced by PLHA attending the Mwananyamala HIV and AIDS care and treatment clinic (CTC)?

3. What is the magnitude of depressive symptoms amongst PLHA attending the Mwananyamala HIV and AIDS care and treatment clinic (CTC)?

4. What is the influence of stigma and the depressive morbidity on uptake of medical recommendation among the PLHA attending the Mwananyamala HIV and AIDS care and treatment clinic (CTC)?

1.6. OBJECTIVES

1.6.1. Broad objective

To determine the influence of HIV AIDS stigma and depressive morbidity on uptake of selected medical recommendations among PLHA attending the Mwananyamala HIV and AIDS care and treatment clinic (CTC).

1.6.2. Specific objectives

1. To determine the magnitude of HIV related stigma.
2. To assess the common forms of stigma.
3. To determine the magnitude of depressive morbidity.
4. To assess the influences of HIV/AIDS stigma and depressive morbidity on uptake of medical recommendations.

CHAPTER TWO

2.0. METHODOLOGY

2.1. Study area

The study was conducted at the HIV and AIDS care and treatment clinic (CTC) of the Mwananyamala Municipal Hospital of Kinondoni Municipality in Dar es Salaam region. The municipality with both commercial and non commercial centers and is the most populated district of the Dar es Salaam region. It was selected for the convenience of recruiting in a short period of time, an adequate number of PLHA recently initiated on ARVs.

The services offered by CTC clinics include; HIV counseling, testing and continued adherence counseling, Medical treatment of PLHA for opportunistic infections and sexually transmitted infections (STIs), and provision of antiretroviral drugs. About 180 to 200 PLHA attend the clinic per day. Approximately 140 of these patients have been initiated on anti retroviral therapy and about 600 patients would have been initiated ART treatment six months prior to the clinic date. Most initiated patients that are stable on medication and adherent are referred to smaller CTC facilities that are closer to their homes of drug pick up clinics that also monitor their care. At the study clinic there are two categories of clinic visit for patients on ART treatment namely, monthly and two monthly visits, the latter being for more clinically stabilized patients. For every visit approximately 40 (20.0%) of daily expected patients miss their scheduled clinic appointments.

2.2. Study design

A hospital based descriptive cross sectional study using quantitative research methods was used to collect information between December 2010 and March 2011 The cross sectional study was chosen because the study was meant to collect information and there was no follow of the participants to the study.

2.3. Study participants

The sample population comprised all PLHA attending the CTC at Mwananyamala Municipal Hospital who met eligibility criteria during the study period.

2.3.1 Selection criteria

Inclusion criteria were:

- HIV positive patients, attending CTC, aged 18 years and above.
- Patients initiated on ART treatment and had been on treatment for at most six months.
- Patients who gave consent to participate in the study.

The exclusion criteria were:

- Patients with less than 18 years of age,
- Patients who were on ART for more than six months and those who are too physically unwell to take the interview and
- Patients that did not consent to participate in the study.

2.4. Sample size estimates

The estimated sample size N was computed using the following formula:

$$N = \frac{z^2pq}{d^2}$$

Where;

N = Estimated Sample Size

Z = is the standard deviation in normal population, which turns out to be 1.96 on using the 95% confidence interval.

P= prevalence of ART adherence = 78% (Eholie et al, 2007)

q = (1-P) = proportion

d= margin of error= 0.05

$N=1.96^{2*}\ 0.78*0.22/\ 0.05^{2}$

N= 264.

In this study, 220 participants were enrolled.

2.5. Sampling technique

A list of all scheduled visits of patients that met eligibility criteria was generated for each day during the entire period of data collection, using the scheduled clinic visit date in the clinical database. This list comprised the sampling frame and included all enrolled patients aged 18 years and above that had been initiated on ARV's in the past six months. In order to ensure a sample size of at least 220 participants would be selected, the random list generated 370 participants. The list was then broken down by day when the patient was scheduled to attend the CTC during the planned data collection duration. A list of ID numbers of patients expected on a particular day was used to randomly select the study population. Using random number tables, ten eligible patients were randomly selected as potential study participants. Data were collected during all (four) adult HIV CTC clinic days in a week.

2.6. Research instruments

Standardized structured questionnaire that was researcher administered was used for data collection. The questionnaire had been translated into Swahili as shown in appendix D.

Socio-demographic and illness measures including: participant's age, sex, marital status, religious affiliation, level of education and place of residence. Information on the duration since HIV positive status was made known to the patient as well as the duration since ART medication was initiated was also collected.

Socio-economic proxy measures collected included; patients number of years of formal education (at primary, secondary and post secondary levels of education); participants main source of income over the past 6 months (none, from partner/family members; from pension, rent or savings/loans as well as from self employment or employment); from employed respondents, the nature of their current (past six months) occupation was explored. Due to the complexities of assessment of wealth status in low income settings, other socio-economic status proxy measures that were collected included six household assets (having a radio, a television, a refrigerator, a bicycle, a motorcycle and a car) and four household characteristics (having electricity, main material of the floor of the house, main source of drinking water for household members and type of toilet facility) were also collected. Finally, one item assessing food security in the past six months was measured.

Internalized Stigma was assessed using the PLHA questionnaire. PLHA Questionnaire is a structured screening tool with 8 items for the assessment of HIV related self stigma and it was validated for use in Tanzania, (Kalichman et al, 2009).

The forms of stigma were assessed using items, adapted from the validated Tanzania HIV/AIDS indicator survey (Nyablde et al, 2005*)*.Four forms of stigma were reported dichotomously as yes or no and the results are presented as frequencies of each item. Dimensions of stigma that were assessed included Isolation (5 items), verbal stigma (2 items), Loss of identity or role (2 items) and loss of access to resource and livelihood (5 items). . Isolation was measured in the form of exclusion from social gathering, abandonment, lack of visits by family members or friends and isolation in households (refusal to eat with the respondent or sleeping alone in the room). Verbal stigma was explored in the form of gossip, voyeurism and taunting. Loss of identity or role in the community was checked using items of loss of respect or standing within the family or in the community and denial of religious rites. Denial of rights to health, education and employment or loss of housing or having property taken away was used to assess loss of access to resource and livelihood.

Depressive morbidity was measured using the Patient Health Questionnaire-9 (PHQ-9). The PHQ-9 (Monahan et al, 2009) is a structured screening tool that was developed for use in primary care settings has only 9 items which made it a convenient tool for depressive morbidity assessments in a busy outpatient clinic. The nine item question assesses presence and frequency of core symptoms of depression (8 items) as defined by the Diagnostic and Statistical Manual (DSM version IV) and one item assesses functioning impairments as a result of symptoms. The presence of each item in the two weeks prior to interview is scored on a 4 point Likert scale from 0=not experienced at all to 3 experienced nearly every day. A Swahili version of the PHQ-9 has been partially validated in Kenya. The tool showed good face validity and adequate internal consistency with Cronbach's alpha of 0.8 (Omollo et al, 2006).

Adherence to ART measures: The adapted California Cooperative Treatment Group (ACCTG) Questionnaire was used to assess ART adherence. ACCGT is a self report of adherence which was validated in California (Haubrich et al, 1999), and an adapted Swahili version had been used in Dar es Salaam, (Ware et al, 2009). The patients were asked about their adherence over the past four days. The instrument starts by asking types of ARV drugs that participant is using during this time (past four days), number of tablets the participant takes ing per dose and then the number of times the ARV drug dose is taken per day. The date and script of the last ARV prescription reported by the patient is then recorded from the patient's file. This was done to check for similarities and consistencies in documented prescriptions and patients accounts of drug use. The number of days of missed ARV doses was then assessed and documented.

Attendance to scheduled clinic visits and counseling session at current visit: Whether the last scheduled clinic visit was kept by the participant, and if during the index visit, counseling services were accessed (responses yes/no) were both analyzed as dichotomous variables.

2.7. Data collection and management

Two nursing officers, with research experience, were hired as research assistants and underwent a brief protocol training session of two days that included understanding the study objectives, research ethics, data collection methods and familiarization with the study data collection tools.

The study instrument was *pretested at* Muhimbili National Hospital HIV clinic *prior* to the start of study activities. Twenty pilot phase participants were interviewed twice on the same day by different members of the research team. The first ten interviews were conducted by the principal investigator, with five of each repeated by a research assistant. The remaining 10 interviews were conducted as repeated interviews by the research assistants. This was done to check for inter-rater reliability. The data generated were used to test and refine the study interview guide and data capture tool. At this setting it was found that the individual counseling is not conducted on every visit and most patients have not disclosed their serostatus to others and there was under reporting on assessing forms of stigma.

About six consented participants were subjected to structured interviews on each day of the main data collection phase. At the end of each day of data collection the principal investigator assessed the completed interview forms to check for omissions and inappropriate responses. This helped to improve the quality of data collected as regular debriefing meetings discussed the data collection progress, identified problems and developed and implemented solutions further reinforcing data quality.

All the completed interviews were stored in a locked cabinet that only the PI had access to, so as to maintain participants' confidentiality. Because of technical audit purposes and for reference during in future data analyses, the completed interview forms will be stored for three years before destroying them.

2.8. Data Analysis

Independent variables were age, gender, marital status, level of education, religion, place of residence and socioeconomic characteristics. The household assets, food security items, house

floor material and source of drinking water items were used to measure socioeconomic status. Household assets included having a radio, television, refrigerator, bicycle, motorcycle, and a car. House hold characteristics including having a finished floor in the home, a tapped source of drinking water and toilet facility that was either a water closet or ventilated improved pit latrine when given a score of one each resulted in a total score of 9 on a wealth index. A score of six items and below was categorized as relatively lower socioeconomic status (SES), the score between seven and eight items was categorized as middle SES, and the score of nine and above was high SES index. These independent variables were analyzed using frequencies and measures of central tendency. HIV/AIDS illness related variables included duration since first clinic visit, duration of ARV use and the number of days since the last ARV prescription.

Objectives 1 & 2. To determine the magnitude of HIV related stigma & to assess the common forms of stigma. Analysis of self stigma among PLHA involved computation of mean sum scores of responses to the 8 items of the PLHA stigma questionnaire. The tertile of stigma was constructed. The tertile below 2.38 was reported as low stigma, between 2.38 and 3.37 as moderate stigma and tertile above 3.37 was reported as high stigma. The scale was normally distributed relative to the outcomes of interest. Simple descriptive statistics were used to assess the overall magnitude of self stigma and extent of the various forms of stigma.

Objective 3: To determine the magnitude of depressive morbidity. The PHQ-9 was used to provide summary scores of depressive morbidity. This PHQ-9 is scored from 0-27; this number being sum scoer of individual scores of the 9 items. Kroenke et al suggested cut off points to identify mild (5-9), moderate (10-14), moderately severe (15-19) and severe ($\geq$20).

Objective 4:

Outcome measures; The past 4 days ART adherence were defined as adequate if 95% or more of ART medications were taken as prescribed or not hence a dichotomous final variable assessed drug taking adherence. Simple frequencies were used to summarize measures for attending the last scheduled clinic visit and counseling sessions during the index visit. In univariate analyses the Chi square statistics was be used to assess variation by sociodemographic measures and dependent variables of interest that are non parametric, using

odds ratios for assessing the size of the variation. The independent variables of interest were felt stigma and depressive morbidity and these were the predictor variables.

Parametric summary statistic estimates were used for scales that were normally distributed relative to the study outcome measures and include descriptions of mean scores and their 95% confidence intervals. Univariate analyses were used to assess variations of predictors of interest by outcome measures of interest using the Chi square and p values to assess the significance and strength of associations.

Multivariate analyses: All independent variables that varied with an outcome measure at p-values less that 0.2 were identified for inclusion in multivariate analyses models. As outcomes were dichotomously analyzed, logistic regression models were used to regress them on independent variables of interest to assess magnitude and associations in order to respond to objective number 4. The exploratory nature of these analyses determined choice of a backward logistic regression method in regression analyses of significant predictors revealed through cross tabulation. The regression main effects model entered independent predictors with p value<0.05 and removed those with p value>0.1.

2.9. Ethical Considerations

Ethical clearance to conduct the study was sought from Muhimbili University of Health and Allied Sciences Ethical Review Board. Permission to do the study was obtained from Mwananyamala Municipal Hospital and MDH program management to allow provision information necessary for the study from data base system regarding PLHA at CTC.

Informed consent to participate in the study was sought from potential study participants. These participants were assured of confidentiality and the benefits and risks of participation were stated clearly in the consent form. Also all clients were informed that, there was no financial gain obtained by participating in this study.

CHAPTER THREE

3.0 RESULTS

Description of the study participants and their socioeconomic characteristics

Of the randomly selected 320 potential participants, 225 (68.8%) were identified on the day of their scheduled clinic visit and invited to participate. Of these, 220 consented, giving coverage of 97.8% of those attending clinics on scheduled dates that were included in these analyses. The study sample comprised 151 (68.6%) females, and the male to female ratio was 1:2. Of all 220 patients the mean age (SD) was 35.5 (9.7) years, with an age range of 18-68 years (Table 1). . Female patients formed the majority in all the participant age groups except for those above 42 years age group; and were significantly younger than men ($p < 0.01$)

Participants officially married were considered in the most stable and supportive of partner relationships and comprised 77 (35.0%), while 91 (41.4%) were widowed, divorced or cohabitees, and 52 (23.6%) were single (defined as having never lived with an intimate partner). Majority (56.8%) had no formal education or only had primary school education. Forty three percent (43.2%), had secondary school or above level of education and amongst them 40.4% were females and 49.9% males, however this difference was not statistically significant. The participants were almost evenly distributed by religion with a slight majority (51.4%) being Muslims and 48.6% Christian. About three quarters were residing in the Kinondoni district and 23.0% were from Ilala and Temeke districts.

The wealth index measure (not standardized) that assesses more long term wealth status using shows the majority (40.9%) of the respondents were of low socioeconomic status, a large proportion of them being female (75.6%); with only 21.8% in the high socioeconomic status group. Just over one fifth (20.5%) reported no regular source of income, while 175 (79.5%) were employed. Among participants with no regular source of income, 77.8% were females. Large proportion of the respondents 85 (40.1%) were earning 135,000/= or less per month. It was found that amongst women 45.1% were earning 135,000/= per month and only 29.4% were males. About 27.9% of males were earning 360,000/= and above per month while only 18.1% were females. The difference was statistically significant. However the difference was not statistically significant. (See Table 1).

Table 1: Distribution of the respondents' sociodemographic characteristics by sex among 220 PHLA, attending HIV and AIDS CTC services in Dar es Salaam

	Sex		Total N=220 (%)
	Male N= 69 (%)	Female N= 151 (%)	
Age group			
<= 29	15 (21.7)	48 (31.8)	63 (28.6)
30 – 34	14 (20.3)	33 (21.9)	47 (21.4)
35 – 41	14 (20.3)	48 (31.8)	62 (28.2)
42+	26 (37.7)	22 (14.6)	48 (21.8)
Marital status			
Married	30 (43.5)	47 (31.1)	77 (35.0)
Unmarried	20 (29.0)	32 (21.2)	52 (23.6)
Divorced/widow/cohabiting	19 (27.5)	72 (47.7)	91 (41.4)
Educational level			
Never/primary school	35 (50.7)	90 (59.6)	125 (56.8)
Secondary school and above	34 (49.3)	61 (40.4)	95 (43.2)
Religion			
Christian	37 (53.6)	70 (46.4)	107 (48.6)
Moslem	32 (46.4)	81 (53.6)	113 (51.4)
Residence			
Kinondoni	54 (78.2)	113 (74.8)	167 (75.9)
Temeke	6 (8.7)	19 (12.6)	25 (11.4)
Ilala	9 (13.0)	19 (12.6)	28 (12.7)
Wealth index			
Low SES	22 (31.9)	68 (45.0)	90 (40.9)
Middle SES	31 (44.9)	51 (33.8)	82 (37.3)
High SES	16 (23.2)	32 (21.2)	48 (21.8)
Source of income			
no regular source	10 (14.4)	35 (23.2)	45 (20.5)
Employed	59 (85.5)	116 (76.8)	175 (79.5)
Income generating job description			
housewife/husband/student	5 (7.6)	21 (14.9)	26 (12.6)
self employed	39 (59.1)	79 (56.0)	118 (57.0)
wage earner/salaried	22 (33.3)	41 (29.1)	63 (30.4)
Earning per month*			
≤135,000/=	20 (29.4)	65 (45.1)	85 (40.1)
135,000/= to <360,000/=	29 (42.6)	53 (36.8)	82 (38.7)
360,000/= to < 540,000/=	19 (27.9)	26 (18.1)	45 (21.2)

Key: *p<0.05

Magnitude of HIV related internalized stigma and depressive morbidity:

Almost a third of the patients (n=72; 32.7%) had moderate levels of stigma while 76 (34.5%) had relatively high levels of stigma (See Table 2). Of the 72 participants with moderate stigma 47 (65.3%) were females. Only 31.9% of all male respondents had high levels of stigma. These variations by sex were however not statistically significant.

The majority of the respondents 45.9% were found to have mild depression and only 23 (10.4%) were found to have moderate to severe depression. About 74.3% of patients with mild depression were females; however these variations by sex were not significant statistically.

Table 2: Distribution of stigma and depression scores by sex

	Sex		
	Male N=69 (%)	**Female N=151 (%)**	**Total N=220**
Self stigma*			
Low stigma	22 (31.9)	50 (33.1)	72 (32.7)
Moderate stigma	25 (36.2)	47 (31.1)	72 (32.7)
High stigma	22 (31.9)	54 (35.8)	76 (34.6)
Depression**			
No	35 (50.7)	61 (40.4)	96 (43.6)
Mild	26 (37.7)	75 (49.7)	101 (45.9)
Moderate to severe	8 (11.6)	15 (9.9)	23 (10.5)

Key: * p=0.76; ** p=0.25 (both 2 sided)

Forms of Stigma: Table 3 summarizes the forms of stigma experienced by being treated differently by others because of their HIV positive serostatus. The assessment was done by asking a series of questions for each of the four stigma forms of isolation, verbal stigma, loss of identity role and loss of access to resources as tabulated. Of all respondents 17.7% affirmed

at least one question assessing isolation; 13.9% affirmed either being gossiped about, sworn at, taunted, or experiences of voyeurism. About 17.3% of the respondents reported loss of respect in the community and being denied religious rites because of their seropositive status. There were patients who reported loss of access to resources like housing, health care, education and employment because of their status. Using these items about 17.0% experienced at least one aspect of this form of stigma.

Table 3: Forms of stigma experienced by the respondents

Forms of Stigma	**N=220**	**%**	**% experiencing at least one per group**
Isolation			17.7
Isolated from social gathering			
No	196	89.1	
Yes	24	10.9	
Abandoned by spouse/partner			
No	167	75.9	
Yes	53	24.1	
Abandoned by family/or sent away			
No	175	79.5	
Yes	45	20.5	
No longer visited or visited less by family/friends			
No	183	83.2	
Yes	37	16.8	
Isolated in household			
No	185	84.1	
Yes	35	15.9	
Verbal stigma			13.9
Teased, insulted or sworn at			
No	192	87.3	
Yes	28	12.7	
Gossiped about			
No	187	85.0	
Yes	33	15.0	

Loss of identity/role			17.3
Lost respect within family/community			
No	157	71.4	
Yes	63	28.6	
Denied religious rites/services			
No	207	94.1	
Yes	13	5.9	
Loss of access to resources			17.0
Loss of customers to buy produce/lost job			
No	207	94.1	
Yes	13	5.9	
Denied promotion/further training			
No	215	97.7	
Yes	5	2.3	
Forms of Stigma	**N=220**	**%**	**% experiencing at least one per group**
Lost housing/not able to rent housing			
No	197	89.5	
Yes	23	10.5	
Given poorer quality health services			
No	206	93.6	
Yes	14	6.4	
Had property taken away			
No	196	89.1	
Yes	24	10.9	

Adherence to medical recommendations

Most participants were adherent to ARV medication (72.7%), did not miss the last scheduled visit (80.9%) and attended counseling sessions during the index visit (91.8%). Assessment of these outcome measures by sex, showed males were 70% (OR 1.70; 95% CI 0.91-3.17) more likely to be recently (past four days) non-adherent to ARV medication than were females; and were also less likely by 39% to report no missed visit at the last scheduled clinic appointment (OR 0.61; 95% CI 0.30-1.22; p=0.19); these variations were, however, not significant in the univariate analyses. The distribution of counseling attendance during the index visit did not vary by sex (See Table 4).

ART adherence and associated factors: Adherence was cross tabulated by sociodemographic measures, levels of stigma and depressive morbidity. The study findings showed that 80.2% of the participants with divorced/widowed/cohabiting status were adherent to ART medication while the 62.3% of the participants with married status were adherent (χ^2=6.90, p=<0.01). With regard to educational level, 75.2% of participants with no or primary education were adherent to ART medication and about 69.5% of participants with the secondary school and above level of education were adherent, this difference being statistically significant (p=0.04). About one third of the patients with moderate or high stigma were recently non-adherent to ART medication while only 13.9% of the participants with low stigma were non-adherent. Of all patients who were found to have moderate to severe depression, only 47.8% were adherent to medication while those with no depression about one fifth were not adherent and the difference was statistically significant. (χ^2=8.62, p value<0.01). See table 5.

Table 4: Distribution of uptake of medical recommendations amongst 220 PLHA attending HIV and AIDS CTCs in Dar es Saalam by sex

	Sex		Total	Odds ratio	95%CI	P value
	Male N=69 (%)	Female N=151 (%)	N (%)			
ART taking						
Not adherent	24 (34.8)	36 (23.8)	60 (27.3)	1.70	0.91- 3.17	0.031
Adherent	45 (65.2)	115 (76.2)	160 (72.7)	1.00		
Last clinic visit						
Missed	17 (24.6)	25 (16.6)	42 (19.1)	1.65	0.90- 2.14	0.054
Not missed	52 (75.4)	126 (83.4)	178 (80.9)	1.00		
Index visit counseling						
Attended	63 (91.3)	139 (92.1)	202 (91.8)	0.91	0.33- 2.52	0.202
Not attended	6 (8.7)	12 (7.9)	18 (8.2)	1.00		

Table 5: Distribution of ART adherence by various independent factors amongst 220 PLHA attending CTC services in Dar es Salaam

	Adherence to ARVs in the past four days				
	Not adherent N (%)	Adherent N (%)	Total	Chi square	P -value
Marital status				6.90	0.01
Married	29 (37.7)	48 (62.3)	77		
Unmarried	13 (25.0)	39 (75.0)	52		
Divorced/widow/cohabiting	18 (19.8)	73 (80.2)	91		
Place of residence				2.42	0.08
Kinondoni	42 (25.1)	125 (74.9)	167		
Temeke	7 (28.0)	18 (72.0)	25		
Ilala	11 (39.3)	17(60.7)	28		
Religion				2.46	0.16
Christian	24 (22.4)	83 (77.6)	107		

Moslem	36 (31.9)	77 (68.1)	113		
Educational level				0.96	0.04
Never/primary	31 (24.8)	94 (75.2)	125		
Secondary and above	29 (30.5)	66 (69.5)	95		
Level of Stigma				0.73	0.01
Low stigma	10 (13.9)	62 (86.1)	72		
Moderate stigma	25 (34.7)	47 (65.3)	72		
High stigma	25 (32.9)	51 (67.1)	76		
Depression				8.62	0.01
None	21 (21.9)	75 (78.1)	96		
Mild	27 (26.7)	74 (73.3)	101		
Moderate to severe	12 (52.2)	11 (47.8)	23		

Adherence to last scheduled clinic visit and associated factors

Table 6 summarizes sociodemographic, depression and stigma measures of participants by attending their last clinic visit. About one fourth of the interviewed Moslems missed the last clinic visit compared with only 14.0% of Christians (χ^2=3.47, p=0.02). Among participants with mild depressive symptoms 18.8% missed the last clinic visit as did 39.1% of those with moderate to severe depression. This variation was also statistically significant (χ^2=7.248, p =0.016). The distribution of levels of stigma did not vary by clinic attendance.

Table 6: Distribution of attendance to last scheduled clinic visit by sociodemographic, socioeconomic, depression and stigma measures amongst 220 PLHA attending CTC services in Dar es Salaam

	Attended last scheduled clinic visit				
	Did not attend N=42 (%)	**Attended N= 178 (%)**	**Total**	**Chi square**	**P – value**
Age category				4.777	0.28
<= 29	14 (22.2)	49 (77.8)	63		
30 – 34	6 (12.8)	41 (87.2)	47		
35 – 41	16 (25.8)	46 (74.2)	62		
42+	6 (12.5)	42 (87.5)	48		
Sex				2.002	0.05
Male	17 (24.6)	52 (75.4)	69		
Female	25 (16.6)	126 (83.4)	151		
Religion				3.470	0.02
Christian	15 (14.0)	92 (86.0)	107		
Moslem	27 (23.9)	86 (76.1)	113		
Education				1.180	0.08
Never/primary	27 (11.1)	98 (88.9)	125		
Secondary and above	15 (12.9)	80 (87.1)	95		
Wealth status				2.236	0.29
Low	17 (18.9)	73 (81.1)	90		
Middle	19 (23.2)	63 (76.8)	82		
High	6 (12.5)	42 (87.5)	48		
Residence				0.254	0.48
Kinondoni	32 (19.2)	135 (80.8)	167		
Temeke	4 (16.0)	21 (84.0)	25		
Ilala	6 (21.4)	22 (78.6)	28		
Depression				7.248	0.02
None	14 (14.6)	82 (85.4)	96		
Mild	19 (18.8)	82 (81.2)	101		
Moderate to severe	9 (39.1)	14 (60.9)	23		
Stigma levels				0.214	0.52
Low stigma	13 (18.1)	59 (81.9)	72		
Moderate stigma	15 (20.8)	57 (79.2)	72		
High stigma	14 (18.4)	62 (81.6)	76		

Table 7: Distribution of attendance to individual counseling at index visit by socio-demographic, socioeconomic, depression and stigma measures amongst 220 PLHA attending CTC services in Dar es Salaam

	Individual counseling session in this visit			**Chi square**	**P – value***
	Yes N (%)	**No N (%)**	**Total**		
Sex					
Male	64 (92.8)	5 (7.2)	69	0.04	0.20
Female	139 (92.1)	12 (7.9)	151		
Marital status					
Married	72 (93.5)	5 (6.5)	77	3.85	1.00
Unmarried	48 (92.3)	4 (7.7)	52		
Divorced/widow/cohabiting	83 (91.2)	8 (8.8)	91		
Religion					
Christian	98 (91.6)	9 (8.4)	107	0.14	0.19
Moslem	105 (92.9)	8 (7.1)	113		
Educational level					
Never/primary	113 (90.4)	12 (9.6)	125	078	0.14
Secondary and above	90 (94.7)	5 (5.3)	95		
Depression				5.80	0.57
None	86 (89.6)	10 (10.4)	96		
Mild	97 (96.0)	4 (4.0)	101		
Moderate to severe	19 (82.6)	4 (17.4)	23		
Stigma level				1.23	0.57
Low	67 (93.1)	5 (6.9)	72		
Moderate	64 (88.9)	8 (11.1)	72		
High	71 (93.4)	5 (6.6)	76		

Key: *Fischer's Exact Test

Adherence to counseling session during index visit

A large proportion of participants (90%) attended the individual counseling during the index visit. The variation in the distribution of sociodemographic characteristics, depression and levels of stigma by currently attending individual counseling sessions during the index clinic visit was not significant statistically. (See table 7).

Multivariate analysis

Analysis of ART adherence regressed on predictors of interest: The independent predictors were marital status, depression and levels of stigma. The patients who were found to have low HIV related stigma were about three times more likely to be adherent to ART medication than those with high stigma (OR 3.0; 95% CI 1.34-6.91; $p<0.01$), this observation being statistically significant. Patients with moderate stigma were 10% less likely to be adherent than those with high level of stigma (OR 0.9, 95% CI 0.41, 1.82, $p=0.81$), this finding was not significant.

Table 8: Logistic regression analysis of factors associated with ART adherence, clinic attendance and individual counseling at index visit, amongst 220 PLHA attending CTC services in Dar es Salaam

Factors	**Adherent on ART***			**Attended last clinic visit****			**Attended current counseling session****		
	OR (ß)	95% CI	p value	OR(ß)	95% CI	p value	OR(ß)	95% CI	p value
Marital status									
Married	1.00	--	--	--	--	--	--	--	--
Single	2.20	0.93-4.95	0.07	--	--	--	--	--	--
Divorced/ widow(er) /cohabiting	2.70	1.27-5.55	<0.01	--	--	--	--	--	--
Depression									
No	3.40	1.26-9.22	<0.05	3.50	1.27-9.76	<0.05	0.55	0.16-1.95	0.36
Mild	2.60	0.98-6.82	0.06	2.70	1.02-7.27	<0.05	0.20	0.05-0.85	<0.05
Moderate to severe	1.00	--	--	1.00	--	--	1.00	--	--
Stigma									
Low	3.00	1.34-6.91	<0.01	--	--	--	--	--	--
Moderate	0.90	0.47-1.82	0.81	--	--	--	--	--	--
High	1.00	--	--	--	--	--	--	--	--

Key: * Factors entered into the full effects regression model using the backward method were marital status, depression and levels of stigma;. ** Factors entered in the full effects regression model were sex, level of education, depression and levels of stigma ;. *** Factors entered in the full effects regression model were marital status, religion, levels of education, depression and levels of stigma;

In the multivariate analysis, marital status remained in the model as an independent predictor of recent adherence to ART medications. Patients who were divorced/widow/cohabiting were 2.7 times more likely to adhere to medical recommendations than those who were married (OR 2.7; 95% CI= 1.272, 5.546; p = 0.009); participants that were single were 2.2 times more likely to adhere to ART medication than those that were married though the statistical significance of this variation was marginal (p=0.07). (See table 8).

Depressive symptoms were significantly associated with recent ART adherence. Lowest levels of depressive symptoms showed a 3.4 times higher likelihood of adherence to ART medication than when depression was moderate to severe (OR 3.4; 95% CI 1.26, 9.22; p=0.05); and when mild, was associated with marginally significant better ART medication adherence (OR 2.6; 95% CI 0.98, 6.82; p=0.06) than when depression was moderate or severe.

Analysis of attending the last scheduled clinic visit regressed on predictors of interest: The independent predictors of interest were sex (male, female), religion (Christian, Moslem), educational level, (no/primary, and secondary/college) depression and levels of stigma. By the backward logistic regression method participants with mild depression were 2.7 times more likely to attend the last clinic visit as scheduled than those with moderate to severe depression (95% CI 1.02, 7.27, $p<0.05$) and those with no depression were 3.5 times more likely to adhere to their last clinic visit than those with moderate to severe depression (p=0.02). Stigma as a predictor of adherence to the last scheduled clinic visit did not remain in the regression model suggesting a lack of association when adjusted for socio-demographic measures, religion and levels of depression, suggesting some confounding with these measures. (See table 8).

Analysis of attending individual counseling during the index visit regressed on predictors of interest. Marital status, religion (Christian, Moslem), education level (nil/primary, secondary and above), depression and levels of stigma were entered in logistic regression as predicting factors. The results showed that patients with mild depression were about 80% less likely to attend individual counseling sessions than participants with moderate to severe depression

(OR 95% CI 0.045, 0.852, $p<0.05$). The patients with no depression were 45% less likely to attend the index visit's individual counseling, than participants with moderate to severe depression but the difference was statistically insignificant. The remaining independent variables when regressed with adherence to individual counseling during the index visit were found statistically insignificant (See table 8).

CHAPTER FOUR

DISCUSSION

The main objective of this study was to determine the influence of HIV related stigma and depressive morbidity on uptake of selected medical recommendations among people living with HIV/AIDS (PLHA) who were on antiretroviral medication for not more than six months and attending the care and treatment centre at the Mwananyamala municipal hospital, Dar es Salaam.

The findings revealed that the experiences of internalized stigma and depressive morbidity were very prevalent and common among PLHA. About one third of the PLHA reported experiencing moderate or high internalized stigma in the past three months. These results are similar to findings from several studies worldwide. A cross-sectional study conducted in the USA on the associations of stigma with self reported access to medical care and ART adherence revealed one third of the participants reported high levels of stigma (Sayles et al, 2007). In urban South Africa, the prevalence of internalized stigma, discrimination and depression among men and women living with HIV/AIDS was shown to be high with more than one in three men and women endorsing AIDS related self abasing views. In fact people living with HIV infection have internalized AIDS stigmas to a far greater extent than the extent of negative attitudes towards AIDS held by the general population. Kalichman et al (2005) revealed while about 16% of the general population believed that people with AIDS should be ashamed of their condition, 38% of people with HIV said they were ashamed. Furthermore, while 13% of the general population reported that people with HIV/AIDS must have done something to deserve their condition, 41% of people with HIV/AIDS felt guilty about acquiring HIV infection.

With regards to the experience of depressive symptoms in the past two weeks, this study showed that 45.9% of PLHA had mild forms of depressive morbidity and 10.4% reported moderate to severe depression. The smaller proportion with moderate to severe depression could reflect non-attendance to service by persons with more severe and disabling depressive symptoms, hindering patients from attending the clinic. These rates of depression are

consistent with observations in urban South Africa, which show 30% of people with HIV/AIDS indicating depression in the past week (Simbayi et al, 2007). The lower prevalence in these analyses could also reflect depressive morbidity closer to levels of disorder, than rates observed by Simbayi et al, (2007) as the PHQ-9, requires a two week duration of symptoms that is similar to the duration criteria for diagnosis of depressive disorder. In a Western Kenyan provincial town, patients with HIV attending a community support group were assessed using the PHQ-9, revealed 34% of the respondents had depressive morbidity at any level of severity (Monahan et al., 2008). On the other hand, a survey in rural Tanzania amongst HIV care and treatment clients showed, using the Clinical Interview Schedule (CIS-R), a 20% prevalence of significant psychiatric morbidity, the majority (12.7%) with depressive morbidity (Marwick and Kaaya, 2008). The lower rate of depression could be due to the rural context being less stressful and more supportive than urban Tanzania. There is some evidence that support rates for psychiatry morbidity, being higher in more stressful inner city settings in high income countries. An important question is whether the rates of depressive morbidity in PLHA in Tanzania exceed rates in the general population. A recent community based study that screened for disorders using the CIS-R, suggests, this may be the case, as Jenkins et al (2011), show much lower prevalence of common mental disorders that include depression of 3.1%.

This study also highlighted several forms of enacted stigma reported by PLHA. The most prevalent losses were reported within the forms of loss of identity or role, and social isolation. Of the two items assessing loss of identity, 28.6% perceived they had lost the respect of family and community members; within the construct of isolation, the most prevalent loss was of spouse or partner support in the form of abandonment (24.1%). Various qualitative studies support presence of patterns that reflect negative attitudes towards PLHA in the community (Nyablade et al, 2003) and from health care providers (Rutledge, 2009; Mahendra et al, 2007; Nyablade et al 2005) that would support these high reported levels of enacted stigmatizing. These findings may however, underestimate the true magnitude of enacted stigma, as rates of HIV diagnosis disclosure are low amongst PLHAs. MacNeil et al (1999) reported for example

partner disclosure rates as low as 18.8% six months after diagnosis in patients in an HIV care setting, while amongst pregnant women with HIV, Anteleman et al (2001) noted partner disclosure rates of 22% two months after diagnosis that improved to only 41% four years after diagnosis. Hence, low rates of disclosure of HIV serostatus by most PLHA to significant others, could perhaps reflect self protection practices from discrimination.

This study revealed a substantial proportion of patients (27.3%) who were recently non-adherent to ART medication and about 19.1% missed their last scheduled clinic visit. Most patients (91.8%), however, attended the individual counseling sessions during the index clinic visit. System factors could explain the high adherence to counseling sessions during clinic visit. The standard operating procedures at the clinic that was the study site, required that patients to attend an individual counseling session prior to a doctor or pharmacy consultation.

There was a consistent pattern of marital status differences in uptake of medical recommendations. The patients who are divorced, widowed or cohabiting were more likely to adhere to ART medication than those that were legally married. While the design of this study does not allow establishing reasons for this variation, it is possible that fear of stigmatizing responses and low partner disclosure can explain the variation; this is because partners in stable legal relationships perhaps have much more to lose if abandonment occurs. Lower disclosure to partners increases difficulty in adhering to medical recommendations related to HIV care and treatment, if this occurs in the context of secrecy. Furthermore, divorced/widowed/cohabiting patients may have much less in terms of social support and so may be more likely to appreciate support provided by clinics. These potentially plausible mechanisms to explain variations in uptake of medical recommendations by marital status however need to be explored in future studies.

This study indicated that patients with less exposure to formal education were more likely to adhere to ART medication than those with higher levels of education ($p < 0.05$). This finding was consistent with the findings of Eholie et al, (2008), in Abidjan, Cote d''Ivore which reported significant association between higher levels of education and poor ART medication adherence ($p < 0.05$). These results were, however, contrary to findings of other studies, which

show associations between lower levels of education with poorer adherence. Iliyasu Z et al, (2005), in urban Nigeria, showed compliance to ART among AIDS patients to be higher (58.7%) in patients with formal education when compared to those without formal education (26.3%; $p<0.01$).

In adjusted analyses, this study revealed that internalized stigma and depressive morbidity are both significantly associated with some behaviors indicating uptake of medical recommendations. Depressive symptoms were significantly associated with lower recent adherence to ART medications and higher rates of missing recently scheduled clinic visits. Furthermore, depressive symptoms were associated with higher attendance to counseling sessions. For the latter, it is likely that patients in the Tanzanian context present with more somatized forms of depression and may not have recognized the depressive nature of their illness (Kaaya et al, 2008; Lee et al, 2008). Concerns about the possible physical health nature of presented somatic symptoms of depression may have prompted greater access to counseling services. Evidence also points to poor recognition of depression by providers in HIV care and treatment settings (Likindikoki, 2010) and in primary care settings (Mbatia et al 2010) in Tanzania; this may compound the concerns of patients. Poor ART adherence was shown in this study amongst patients with relatively higher levels of internalized stigma. Studies in the USA have also shown associations between HIV elated stigma and both poor access to medical care and suboptimal ART adherence (Sayles et al., 2007).

Study limitations

There may have been an under-reporting or over-reporting of the responses depending on the participants perceptions on what would be acceptable responses to the questions. However, this was checked for particularly reports of missed clinic visits against documentation in case notes and participants responses correlated perfectly with the documentation suggesting bias due to conforming responses may have been minimal in this low literacy population.

The limited time available allowed only for a cross sectional study. Hence, it is unclear if stigma preceded depression or depression was an outcome of stigma in the relationship

between these two risk factors of interest and ability of participants to attend the last clinic visit. Furthermore, the small sample size did not allow for more extensive analysis particularly of attendance to the counseling session during the index visit. However, the findings point to depression and stigma independently predicting at least recent ART adherence. Despite these limitations, the findings suggest new directions for operations research with larger sample sizes and more analytic designs to further understand mechanisms of influences of depression and stigma on adherence to medical recommendations and to inform interventions for improving retention in care and health outcomes of ART care and treatment.

The study sample is also biased (ascertainment bias) towards people who have already engaged in medical care and who are already on ART. While ability to access scheduled clinic visits was the outcome in these analyses, the findings may underestimate the association between poor access and internalized stigma and depression for the most vulnerable group of PLHA who do not access care or HIV services at all. Limited resources including time and funding, restricted the study to an observational design, but as noted above, the findings do provide descriptive information that can inform the development of new research questions.

CD4 machine ran out of reagent two months prior to start of my data collection at the CTC and the problem lasted for two more months after commencing data collection activity. Since it is a government policy to initiate ART medication after doing this investigation, the number of patients for daily enrolment in the study was reduced to reflect the lower numbers of patients accessing the clinic that had been initiated on ARV medications for at least 6 months.

CHAPTER FIVE

CONCLUSION

The study showed that PLHA experience high rates of internalized stigma (33%), and depressive morbidity (45.9%) and that patients with internalized stigma are more likely to be non adherent to ART medication; while those with depressive morbidity are more likely to be non adherence to both are more likely to be non adherent to ART medication and attending scheduled clinic visits. Internalized stigma and depressive morbidity are hence challenges to the uptake of medical recommendations among PLHA accessing care and treatment services, with potential implications for HIV treatment outcomes. In this study depressive morbidity was more consistently associated with poor uptake of medical recommendations including ART adherence and keeping scheduled clinic visits. It is likely that stigma predisposes to development of depression through impacts on self esteem, though the study design did not allow for determining this. Future research to better understand the mechanisms of associations between stigma and depression in PLHA are necessary; as well as studies to inform development of stigma and depression reduction interventions.

RECOMMENDATIONS

Sensitization on awareness of HIV/AIDS internalized stigma and depressive morbidity as possible risk factors for poor adherence to medical recommendations should be implemented among clinicians and program developers. Operations research is required to develop and pilot interventions that reduce stigma and reduce depressive morbidity in PHLA accessing care.

Longitudinal studies are warranted to better understand relationships between HIV internalized stigma and depression if any; and contributions of associations to health outcomes through the disease trajectory. Such information can better guide the development of theoretically sound interventions to improve HIV care and health care for PLHA.

REFERENCES

Andrewin A and Chien L., (2008) Stigmatization of Patients with HIV/AIDS among doctors and nurses in Belize. *AIDS Patients care STD* 22(11) 897-906.

Anish P.,Sayles J, Vishal A., Robert H., Sharif R., Daniel J., Greg S.,Thomas J, (2008). Stigma in the HIV/AIDS epidemic: a review of the literature and recommendations for the way forward. *AIDS, 22 (suppl 2):*S67–S79.

Antelman, G., Smith Fawzi, M.C., Kaaya, S., Mbwambo, J., Msamanga, G.I., Hunter, D.J., & Fawzi, W.W. (2001). Predictors of HIV-1 serostatus disclosure: a prospective study among HIV-infected pregnant women in Dar es Salaam, Tanzania. Aids, 15(14), 1865-1874.

Banteyerga H., Kidanu A., Nyblade L, MacQuarrie K., Pande R., (2004) Exploring HIV and AIDS Stigma and related discrimination in Ethiopia; Causes, manifestation, consequences and coping mechanism. Miz-Hasab Research Center Addis Ababa Ethiopia.

Eholie SP, Tanon A, Polneus S, Ouiminga M, Djadji A, (2008). Field adherence to HAART in HIV infected adults in Abidjan Cote d''Ivore. J AIDS 2007 Jul 1; 45(3):355-358.

Gilbert L., Walker L., (2007) My biggest fear was that people would reject me once they knew my status... stigma as experienced by patients in an HIV/AIDS clinic in Johannesburg, South Africa. *Fam Syst Health.* 26(4):431-442.

Goffman E., (1963) Notes on Management of Spoiled Identity. New York: Simon & Schuster, Inc.

Haubrich R H., (1999). The value of patient-reported adherence to antiretroviral therapy in predicting virologic and immunologic response. California Collaborative Treatment Group. AIDS; 13:1099–1107.

Herek G. and Glunt E., (1993) Public Attitudes towards AIDS Related Issues in USA.

Hong K., Nguyen T., Ogden J. (2004) Understanding HIV and AIDS related stigma and discrimination in Vietnam.

Iliyasu Z, Kabir M, (2005). Compliance to antiretroviral therapy among AIDS patients in Kano teaching hospital, Kano, Nigeria. Niger J. Med. 14(3):290-4.

Jenkins, R., Mbatia, J., Singleton, N., & White, B. Common mental disorders and risk factors in urban Tanzania. *Int J Environ Res Public Health*, 7(6), 2543-2558.

Kalichman, S. C., Simbayi, L., Jooste, S., Toefy, Y., Cain, D., Cherry, C., et al. (2005). Development of a brief scale to measure AIDS-related stigmas in South Africa. AIDS and Behavior, 9, 135–143.

Kalichman S C., Simbayi L C, Cloete A, Mthembu P P, Mkhonta R N, Themba Ginindza T, Measuring AIDS stigmas in people living with HIV/AIDS: the Internalized AIDS Related Stigma Scale.

Kronke, K, Spitzer, RL, Williams, JB, 2001. The PHQ-9: Validity of a brief depression severity measure. Journal of General Internal Medicine. 16:606-613.

Li Li, Sung-Jae L., Panithee T., Chuleeporn J., Mary Jane, R., (2008) Stigma, social support, and depression among people living with HIV in Thailand. *AIDS Care*, 21: 8, 1007-1013.

Likindikoki, S. (2010) Knowledge, Attitudes, Perceived barriers and self efficacy of clinicians regarding depression in HIV/AIDS *Unpublished dissertation submitted partial fulfillment of Master of Medicine Degree Course in Psychiatry, Muhimbili University College f Health and Allied Sciences of the University of Dar es salaam, Dar es salaam, Tanzania.*

MacNeil, J.M., Mberesero, F., & Kilonzo, G. (1999). Is care and support associated with preventive behaviour among people with HIV? AIDS Care, 11(5), 537-546.

Mahendra. V S., Gilborn L., Bharat S., Mudoi R., Gupta I., George B., Samson L, Pulerwitz J., (2007) Understanding and measuring AIDS-related stigma in health care settings:A developing country perspective, New Delhi. *SAHARA J.* 4(2):616-25.

Maman S., Mbwambo J., Hogan N M., Kilonzo G P. (2001). Women's barriers to HIV–1 testing and disclosure: challenges for HIV–1 voluntary counseling and testing. *AIDS Care*, *13*(5), 595–603.

Marwick K.F.M., Kaaya S.F. (in press). Prevalence and predictors of common mental health disorders in HIV-positive outpatients in rural Tanzania. Research report Submitted to the National Institute of Medical Research, Dar es Salaam.

Mbwambo J., Kilonzo G., Kopoka P., Nyblade L., (2004) Understanding HIV-related stigma and resulting discrimination in Tanzania.

Monahan, P.O., Shacham, E., Reece, M., Kroenke, K., Ong'or, W.O., Omollo, O., Yebei, V.N., & Ojwang, C. (2008). Validity/reliability of PHQ-9 and PHQ-2 depression scales among adults living with HIV/AIDS in western Kenya. *J Gen Intern Med*, 24(2), 189-197.

NACP, (2009) National Guidelines for Management of HIV and AIDS.

Nyablade L. et al, (2005) Working report: Measuring HIV stigma: results of a field test in Tanzania. *United States Agency for International Development.*

Nyablade L., (2004) Combating HIV stigma in health care settings: what works? *Journal of the International AIDS Society* 2009, 12:15 doi: 10.1186/1758-2652-12-15.

Nyablade L., Philip F., Katende C., Brown L., (2005) Measuring HIV stigma: results of a

field test in Tanzania. United States Agency for International Development.

Nyblade L., Rohini P., Sanyukta M., Kerry M., Ross K., Banteyerga H., Kidanu A., Kilonzo G., Mbwambo J., Bond V, (2003) Disentangling HIV and AIDS Stigma, in Ethiopia, Tanzania and Zambia. *International Center for Research on Women* (ICRW).

Ogden J. and Nyblade L. (2005) *Common at its Core: HIV-related Stigma across Contexts.* Washington, D.C.: *International Center for Research on Women.*

Omoro S. (2006). Swahili translation and validation of the patient health questionnaire-9 depression scale in the Kenyan head and neck cancer patient population.

Parker R., Aggelton P., (2003) HIV and AIDS-related stigma and discrimination: a conceptual framework and implications for action. *Soc Sci Med;* 57:13–24.

Rutledge S E., (2009) AIDS stigma in health services in the Eastern Caribbean. *Sociol Health* (1):17-34.

Sayles J N., Mitchell D., Wong, Kinsler J J., Martins D., Cunningham W E, (2007) The association of stigma with self reported access to medical care and antiretroviral therapy adherence in persons living with HIV/AIDS. J Gen Intern Med. (10):1101-8.

Simbayi L C., Kalichman S C., Strebel A., Cloete A., Henda N., Mqeketo A., (2007) Disclosure of HIV status to sex partners and sexual risk behaviors among HIV positive men and women in Cape Town SA. Sex Transm Infect. 83(1):29-34.

Simbayi LC., Kalichman S., Strebel A., Cloete A., Henda N., Mqeketo A., (2007). Internalized stigma, discrimination, and depression among men and women living with HIV/AIDS in Cape Town, South Africa.

Stutterheim S E., Bos E R., Schaalma, (2009). HIV-related stigma and psychological distress: the harmful effects of specific stigma manifestations in various social

settings in Netherlands. AIDS 13; 23(17):2353-7.

Suzanne Maman, Laurie Abler, Lisa Parker, (2009) A comparison of HIV stigma and discrimination in five international sites: The influence of care and treatment resources in high prevalence settings. *Social Science & Medicine* 68 (2009) 2271–2278.

Tanzania HIV/AIDS and Malaria Indicator Survey, (2009) Tanzania Epidemic Update.

UNAIDS, (2002) UNAIDS fact sheet on HIV AIDS.

UNAIDS, (2003) UNAIDS fact sheet on stigma and discrimination.

UNAIDS/WHO, (2009). Global Summary of the AIDS Epidemic.

Ware N C, Idoko J, Kaaya S, Biraro I A, Wyatt M A, Agbaji O, Chalamilla G, Bangsberg D R (2009) Explaining Adherence Success in Sub-Saharan Africa: An Ethnographic Study.

APPENDICES

Informed consent explaination

To be read and questions answered in a language in which the study subject is conversant (English or Kiswahili)

My name is Dr Theonest Rutayuga; I am a pursuing master's degree in Psychiatry at the University of Health and Allied Sciences. I am doing a study entitled HIV Related stigma and its association to depressive morbidity in patients receiving antiretroviral treatment at Mwananyamala Hospital as part of my degree award fulfillment. Being one among the patients attending this clinic; I would like to ask you to participate in this study. First I will explain to you about the study and I will be read to answer any question that you have.

The aim of this study is to determine the impact of HIV and AIDS related stigma on uptake of selected medical recommendation among people living with HIV

This study will be conducted by me under my supervisor.

This is a medical research and you are required to understand the following which apply to all in medical research

Your participation is completely voluntary and you may withdraw consent at any time in the course of the interview

Refusal to participate will not in any way affect your health services/benefits which you are entitled

After reading the explanation, don't hesitate to ask any questions in case you need clarifications

I will assess you using an instrument which will take about 30-45 minutes

No invasive procedures such as drawing blood will be involved

All information obtained from this study will remain confidential. Serial numbers instead of your name will be used in this study for identification

There will be no direct benefits to you. However the overall study will be of benefit to other persons with HIV disease in terms of implementation and comprehensive care

If you have any questions related to this study, or your health you can call me on my telephone numbers 0713-453245 or my lead supervisor Dr Sylvia Kaaya at the Department of Psychiatry and Mental Health, Muhimbili University Health and Allied Sciences or you may contact Prof E F Lyamuya, a chairman of the College Research and Publication committee, P.O. Box 65001 Dar es Salaam.

APPENDIX;

FORM YA RIDHAA KUSHIRIKI KWENYE UTAFITI KUHUSU MAHUSIHANO YA UNYANYAPAA NA MSONONO KATIKA MATUMIZI YA DAWA ZA KUPUNGUZA MAKALI YA VIRUSI VYA UKIMWI BAINA YA WAGONJWA WANAO HUDHURIA KLINIKI YA TIBA NA DAWA MWANANYAMALA

Jina langu ni …….

Ninatokea chuo kikuu cha tiba na afya Muhimbili katika idara ya afya na magonjwa ya akili. Tunafanya utafiti hili kuweza kufahamu mahusiano ya unyanyapaa usababishwao na mahambukizi ya virusi vya ukimwi, msonono na utumiaji wa dawa za kupunguza makali ya virusi baina ya wagonjwa wanaohudhuria kliniki ya tiba na dawa hapa Mwananyamala hosipitali.

Ikiwa huu ni utafiti wa sayansi ya tiba unapaswa hufaamu yafuatayo kabla ya kushiriki;

Dhumuni la Utafiki huu

Kama nilivyo sema hapo awali. Dhumuni ni kufahamu mahusiano ya unyanyapaa usababishwao na mahambukizi ya virusi vya ukimwi, msonono na utumiaji wa dawa za kupunguza makali ya virusi baina ya wagonjwa wanaohudhuria kliniki ya tiba na dawa hapa Mwananyamala hosipitali.

Namna ya kushiriki

Ushiriki wako kwenye utafiti huu ni wa hiyari kabisa na unaweza kukataa kushiriki au kusitishamahojiano au majadiliano wakati wowote. Kukataa kushiriki hakutahingilia uduma zako za tiba wala faida unazotakiwa kuzipata.

Usisite kuhuliza swali lolote pale unapoona kuna sababu. Kama ukikubali kushiriki mahojiano yataendeshwa kwa kutumia dodoso maalum.

MADHARA

Hatutarajii kuwepo kwa madhara yoyote sababu ya ushiriki wako kwenye utafiti huu.

USIRI

Taarifa zako utakazozitoa hazitawekwa hadharani kwa namna yeyote ile kwa hiyo ushiriki wako hautafahamika. Jina lako au taarifa zozote zinazokutambulisha hazitaambatanishwa na na taarifa zako utakazozitoa. Mwisho wa ufafiti taarifa hizi zitafungiwa na baadaye kuharibiwa baada ya kuwekwa na kutunzwa kwenye mfumo wa electroniki.

Kumbuka

Hakutakuwa na faida ya moja kwa moja kwako kutokana na utafiti hila matokeo ya utafiki yatasaidia wagonjwa wengine wenye virusi vya ukimwi na pia yatasaidia kuboresha uduma.

NANI WA KUMUULIZA

Kama una maswali zaidi ambayo ungependa kuuliza kuhusiana na utafiti huu, tafadhali wasiliana na

Mtafiti Mkuu

Dr Theonest Rutayuga

Idara ya magonjwa ya akili

Chuo Kikuu cha afya Muhimbili

Prof E.F. Lyamuya

Mwenyekiti wa kamati ya utafiti na machapisho ya chuo

S.L.P. 65001 Dar es salaam, Tanzania

Sahihi

Unakubali Kushiriki?.....

Mshiriki amekubali…….

Nimesoma au nimeambiwa kuhusu yaliyomo humu ndani. Maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Questionnaire (English version)

STUDY TITLE

HIV RELATED STIGMA, DEPRESSIVE MORBIDITY AND TREATMENT UPTAKE IN PATIENTS ON ANTI-RETROVIRAL TREATMENT, AT MWANAYAMALA HOSPITAL, DAR ES SALAAM

Study screening Id number			

Name of interviewer_____

Date of interview			/			/			

A. PATIENT ELIGIBILITY SCREENING FORM

Let us start our discussion by getting information about you and the illness

01	Age(years)									
02	When did you start attending the Mwananyamala CTC? Date/month/year			/			/			
03	Have you started using ARVs? 1=Yes; 2=No									
04 (a)	When did you start using ARV drugs? (Date/month/year)			/			/			
04(b)	Calculate the month since started ARVs.									

04 (c)	Is he/she eligible?	1 Yes	2 No. →End	

PATIENT STRUCTURED INTERVIEW SHEDULE

Study enrollment Id number			

B. DEMOGRAPHIC AND SOCIOECONOMIC INFORMATION

Let us discuss about your background information

05	Sex	1. Male 2. Female		
06	What is your marital status?	1. Married 2. Unmarried 3. Divorced	4. Widow 5. Cohabiting	
07	With whom do you live with? (1 yes, 0 no for each option):	1. Alone 2. Spouse 3. Children	4. Relative 5. Others (mention)……	
08	In what district do you live? Where do you live?	1. Kinondoni, 2. Temeke 3. Ilala 4. Other (mention)		
09	What is your religion?	1. Practicing Christian 2. Practicing Moslem 3. Non-practicing Christian	4. Non-practicing Moslem 5. No religion 6. Others specify) …….	
10(a)	What is your highest level of Education?	0. Never→Go to qn 11 1. Primary school 2. Secondary school	3. College/University 4. Postgraduate/Masters 5. Adult Education	

10(b)	How many years did you spend in school at this level of your education?		

11	What is your main source of income?	0. No→ Go to question 14 1. Friends/Family 2. Rent	3. Pension 4. Savings/Loan 5. Employment 6. Other (mention)…….	

12(a)	If employed what do you do to earn an income?	1. Self employed agricultural work, 2. Wage earning agricultural work, 3. Self employed business 4. Wage earning unskilled job (paid daily or weekly)	5. Wage earning skilled job (paid daily or weekly)Salary earning unskilled job (paid monthly 6. Salary earning skilled job (paid monthly) 7. Housewife 8. Student	
12(b)		Other job (specify) _____ _____		
13	On average how much do you earn every month?	1. ≤135,000 Tshs. 2. >135,000 to <360,000 Tsh, 3. 360,000 to <540,000 Tsh,	4. 540,000 to <720,000 Tsh, 5. ≥720,000 Tsh,	

14	In your current home do you live	1. In a rented accommodation? 2. With a renting relative?	3. In Own home? 4. With relative owning home?	
15. Does your household have				

15	a	Electricity?	1. Yes	0. No	
15	b	A radio?	1. Yes	0. No	
15	c	A television?	1. Yes	0. No	
15	d	A refrigerator?	1. Yes	0. No	
16. Does any member of your family of your household own					
16	a	A bicycle?	1. Yes	0. No	
16	b	A motorcycle?	1. Yes	0. No	
16	c	A car?	1. Yes	0. No	
17		Does your household have enough food to eat, or do you sometimes or frequently have not enough food to eat?	1. Frequently not enough 2. Sometimes not enough 3. Always enough 8 Do not know		

18	What is the **main source** of drinking water for members of your household?	1. Rain water 2. River/pond or dam water 3. Spring water 4. Public private well 5. Well water in your residence/yard/plot 6. Public/private tap water 7. Piped water into the house/yard/plot	
19	What kind of toilet facility does your household have?	1. No facility 2. Traditional pit latrine 3. Ventilated pit latrine 4. Shared flush toilet 5. Own flush toilet	

20	Could you describe the main material of the floor of your home?	1. Natural earth floor 2. Rudimentary floor with wooden planks 3. Finished floor with cement screen 4. Finished floor with ceramic tiles 5. Finished floor with parquet/polished wood	

C. HIV FELT STIGMA (Kalichman et al)

I will now ask a few questions to get your thoughts and experiences of living with HIV

Please indicate the extent to which you agree and disagree with each statement		Disagree strongly	Disagree slightly	Neutral	Agree slightly	Agree strongly	
21	It is difficult to tell other people about my I have HIV infection	1	2	3	4	5	
22	Being HIV positive makes me damaged	1	2	3	4	5	
23	I feel guilty that I am HIV positive	1	2	3	4	5	
24	I feel ashamed that I am HIV positive	1	2	3	4	5	
25	I sometimes feel worthless because I am HIV positive	1	2	3	4	5	
26	It is my own fault that I am HIV positive	1	2	3	4	5	
27	I hide my own HIV status from others	1	2	3	4	5	
28	I feel certain that I can tell my partner that I have HIV	5	4	3	2	1	

D. FORMS OF STIGMA

Because of your HIV serostatus have you ever been:

29	Isolated from social gathering (party, wedding, burial ceremony, social gatherings)?	0. Never 1. Few times 2. Several times	
30	Abandoned by your spouse/partner?	0. Never 1. Few times 2. Several times	
31	Abandoned by your family/sent away to the village?	0. Never 1. Few times 2. Several times	
32	No longer visited or visited less by family and friends?	0. Never 1. Few times 2. Several times	
33	Isolated in household (made to eat alone/made to use separated eating utensils/made to sleep alone in separate room?	0. Never 1. Few times 2. Several times	
34	Teased, insulted or sworn at?	0. Never 1. Few times 2. Several times	
35	Gossiped about?	0. Never 1. Few times 2. Several times	
36	Lost respect/standing within the family and or community?	0. Never 1. Few times 2. Several times	
37	Denied religious rites/services (marriage, communion, burial, singing in choir, prayers/ not allowed to church or mosque?	0. Never 1. Few times 2. Several times	
38	Loss of customers to buy your produce/goods or lost a job?	0. Never 1. Few times	

		2. Several times	
39	Denied promotion or training?	0. Never 1. Few times 2. Several times	
40	Lost housing or not being able to rent housing?	0. Never 1. Few times 2. Several times	
41	Given poorer quality of services (e.g. passed from provider to provider, not given medicine, treatment, surgery?	0. Never 1. Few times 2. Several times	
42	Have property taken away?	0. Never 1. Few times 2. Several times	

E. MAGNITUDE OF DEPRESSIVE SYMPTOMS (PHQ-9)

Over the past two weeks how often have you been bothered by the following problems?

43	Little interest or pleasure in doing things	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
44	Feeling down, depressed, or hopeless	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
45	Trouble falling or staying asleep, or sleeping too much	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
46	Feeling tired or having little energy	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
47	Poor appetite or overeating	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
48	Feeling bad about yourself, or that you are a failure or have let youself or your family down	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
49	Trouble concentrating on things, such as reading the newspaper or watching TV	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	

50	Being so fidgety and restless that you have been around a lot more than usual	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
51	Thought you would better be dead or of hurting yourself in some way	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	
52	If you checked off any problems, how diificult have these problems made it for you to do your work, take care of things at home, or get along with other people?	0. Not at all 1. Several days	2. More than half the days 3. Nearly everyday	

F. UPTAKE OF MEDICAL RECOMMENDATION

ART ADHERENCE LEVEL ASSESSMENT (Adapted ACTG questionnaire)

Let us talk about how you are using the ARV drugs.

53a	Apart from ARV drugs are there any other medications prescribed to you from CTC? 1= Yes; 0= No→ Go to qn 54	53b. If yes, mention name of drug (s) _____ _____ _____	

About ARV drugs that you are using. (**Instructions 54a-c:** Please use ARV drug module and ask patient to identify the drugs that they are using – Check the drug name from the module then fill reported number of daily pills and frequency of use per day in the table below). **For each drug identified ask: Q54a-d:** *How many are taken per dose? Also ask the number of times the drug dose is taken per day?*

	Type of current ARV drug/ drug combination reported and identified on drug module			Pills reported to be taken per dose		Number of times ARV drug dose taken per day	
54	Zidovudine ((AZT) 300, Lamivudine	1 Yes		54a(ii)		54a(iii)	

(a)(i)	(3TC)150 (COMBIVIR))	2 No					
54 (b)(i)	Efavirenz (EFV) 600	1 Yes 2 No		54b(ii)		54b(iii)	
54 (c)(i)	Nevirapine (NVP) 200	1 Yes 2 No		54c(ii)		54c(iii)	
54 (d)(i)	Tenofovir (TDF) 300/ Emtricitabine (FTC)200 (TRUVADA)	1 Yes 2 No		54d(ii)		54d(iii)	
54 (e)(i)	Stavudine, Lamivudine, Nevirapine (Triomune 30).	1 Yes 2 No		54e(ii)		54e(iii)	

55. When was your last ARV drug prescription? (Date/month/year)

Instruction: Check patients file and copy prescription below

1._____

2. _____

3. _____

56. Prescription is similar to patients account?		1= yes; 2= No	
57a	During the past 4 days, on how many days have you missed taking all your doses?	0. None 1. One day 2. Two days 3. Three days 4. Four days	
57b	During the past 4 days, how many days have you missed taking **at least one of your drug doses**?	0. None 1. One day 2. Two days 3. Three days 4. Four days	
58	When was the last time you missed any of your medications? Check one.	19. Within the past week 20. One to two weeks ago	

		21. Two to four weeks ago 22. One to three months ago 23. More than 3 months ago 24. Never skipped medications	

59. If you missed doses in questions 58a, b and 59, what were the reasons?

……

……

SCHEDULED CLINIC VISITS AND INDIVIDUAL COUNSELLING SESSIONS

Let us talk about your attendance to the clinic and individual counseling.

VARIABLE VALUE	VARIABLE	VARIABLE VALUE		CODE
60	How frequent are you scheduled for clinic visit in a month?	1. Twice a month 2. Once in a month 3. Once every 2-3 months 4. Others(specify)		
61	In the past three months how many times did you miss the scheduled clinic visits? (confirm from the records)	1. Never 2. Once 3. Twice 4. Three times or more	61 a Patient's response 61b Response from records	
62	How frequently are you supposed to attend individual counseling?	1. At every visit 2. Optional 25. Do not know		
63	Did you attend the individual counselling session during this visit?	1. Yes 0. No→ End		

64. If you did not attend the counseling session, what were the reasons? .....

Thank you for your time

Dodoso (Kiswahili version)

HIV RELATED STIGMA, DEPRESSIVE MORBIDITY AND TREATMENT UPTAKE IN PATIENTS ON ANTI-RETROVIRAL TREATMENT, AT MWANAYAMALA HOSPITAL, DAR ES SALAAM

Namba ya dodoso

Jina la msahili_____

Tarehe ya usahili_____

G. PATIENT ELIGIBILITY SCREENING FORM

Tuanze mahojiano yetu kwa kuongelea kuhusu wewe na ugonjwa.

QN	VARIABLE	CODE
01	Umri (Miaka)	
02	Ulianza lini kuhudhuria kliniki hii ya tiba ya Mwananyamala? Tarehe/mwezi/mwaka	
03	Umekwisha anza kutumia dawa za kupunguza makali ya VVU? 1=Ndio; 0=Hapana Kama hapana= mwisho wa maojiano	
04 (a)	Lini ulianza kutumia dawa za kupunguza makali ya VVU? (Tarehe/mwezi/mwaka)	
04(b)	Hesabu miezi tangu ameanza kutumia dawa za kupungunza makali ya VVU._____Anastahili 1 Ndio, 0 Hapana	

H. TAHARIFA ZA KIDEMOGRAFIA NA UCHUMI Namba ya kuandikishwa kwenye usahili

Tuongelee taharifa zako za kijamii na uchumi

QN	VARIABLE	VARIABLE VALUE			CODE
05	Jinsia ya mshiriki	1. Mume 2. Mke			
06	Nini hali yako ya ndoa	1. Nimeoa/Nimeolewa 2. Sijaoa/Sijaolewa 3. Tumehachana/Tumetengana 4. Mjane 5. Naishi na mwanamke/bwana			
07	Hapo nyumbani unahishi na nani? ((kwa kila chaguo sema 1=ndio, 2=hapana)	A	Peke yangu	1. Ndio 0. Hapana	
		B	Mke/Mume	1. Ndio 0. Hapana	
		C	Watoto	2. Ndio 0. Hapana	
		D	Ndugu	1. Ndio 0. Hapana	
		E	Nyingine(taja)		
08	Je unahishi wilaya gani?/Unahishi wapi?	1. Kinondoni 2. Temeke 3. Ilala 4. Nyingine (taja)			
09	Je wewe ni mhumini wa dini gani?	1. Mkiristo (ukimaanisha ushaudhulia shughuli za kanisa miezi mitatu iliopita) 2. Muislamu ((ukimaanisha ushaudhulia shughuli			

		za msikiti miezi mitatu iliopita) 3. Mkiristo asiyeenda kanisani 4. Muislamu asiyeenda msikitini 5. Sina dini	
		6. Nyingine(taja)	
10(a)	Je una kiwango gani cha elimu?	1. Sijasoma 2. Elimu ya msingi 3. Elimu ya sekondari 4. Elimu ya chuo/chuo kikuu 5. Nina shahada ya pili/sitashahada 6. Elimu ya watu wazima	
10(b)	Kwa kiwango chako cha juu cha elimu ulitumia muda gani katika masomo?		
11	Nini chanjo chako cha mapato?	1. Sina chanzo cha mapato 2. Kutoka kwa rafiki/familia 3. Kutoka kwenye makusanyo ya kodi 4. Kutoka kwenye pensheni(akiba ya uzeeni) 5. Kutoka kwenye akiba/mikopo 6. Kutoka kwenye ajira/ajira binafsi	
		7. Nyingine (taja)	
12(a)	Kama umehajiriwa/Jihajiri unafanya kazi gani?	1. Shughuli binafsi za kilimo 2. Shughuli za kipato za kilimo 3. Biashara binafsi 4. Kibarua(Malipo kwa siku/wiki) 5. Malipo kwa utaalamu (malipo kwa siku/wiki) 6. Malipo ya mshahara kwa zisizo za ujuzi kwa	

		mwezi 7. Malipo ya mshahara wa kiujuzi kwa mwezi 8. Mama/baba wa nyumbani 9. Mwanafunzi			
12(b)		Nyingine (taja): _____			
13	Kwa wastani kipato chako kwa mwezi ni shilling ngani?	6. ≤135,000 Tshs. 7. >135,000 to <360,000 Tsh, 8. 360,000 to <540,000 Tsh, 9. 540,000 to <720,000 Tsh, 10. ≥720,000 Tsh,			
14	Nyumbani kwa sasa je unahishi kwenye	1. Nyumba ya kupanga? 2. Na ndugu kwenye nyumba kupanga? 3. Unahishi kwenye ya kwako mwenyewe au wewe na mwenzio? 4. Kwenye nyumba ya ndugu?			
15. Je nyumba unayohishi ina (sema 1= ndio; 0= hapana)					
	a	Umeme?	2. Ndio	2. Hapana	
	b	Radio?	3. Ndio	2. Hapana	
	c	Runinga?	3. Ndio	2. Hapana	
	d	Jokofu?	3. Ndio	2. Hapana	
16. Je kuna mwana familia wako yeyote anayemiliki					
	a	Baisikeli?	3. Ndio	2. Hapana	

	b	Pikipiki?	3. Ndio	2. Hapana	
	C	Gari?	3. Ndio	1. Hapana	
17		Je katika familia mnapata chakula cha kutosha au muda mwingine akitoshi?	1. Kinatosha muda wote 2. Kuna muda hakitoshi 3. Mara nyingi hakitoshi 4. Muda wote akitoshi 8. Sijui		
18		Je mnapata wapi maji ya kunywa katika kaya yenu?	1. Maji ya mvua 2. Maji ya mto/bwawa 3. Maji ya chemchemi 4. Maji ya kisima cha jumuiya 5. Maji ya kisima ndani ya makazi 6. Maji ya bomba la jumuiya 7. Maji ya bomba ya nyumba/uani		
19		Je nyumba yenu ina choo cha aina gani?	6. Hatuna uduma ya choo 7. Choo cha shimo cha kizamani 8. Choo cha shimo cha kisasa 9. Choo cha maji cha kuvuta cha kushirikiana 10. Choo cha maji cha kuvuta cha binafsi		
20		Je, sakafu ya nyumba yenu ni ya aina gani?	2. Ya udongo kawaida 3. Ya mbao za kizamani 4. Imepigwa simenti 5. Ina vigae/tailizi 6. Imemaliziwa na mbao zilizo nakishiwa		

I. AINA ZA UNYANYAPAA

Umeshawahi kutokewa na haya yafuatayo kwa sababu ya hali yako ya kuwa na VVU/UKIMWI

QN	VARIABLE	VARIABLE VALUES	CODE
28	Kutengwa katika mikusanyiko ya jamii (harusi, mazishi, sherehe, vikundi vya kijamii?	3. Mara moja 4. Mara chache 5. Mara nyingi	
29	Kutelekezwa na mume/mke au mwenza?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
30	Kutelekezwa na familia/ au kurudishwa kijijini?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
31	Hutembelewi tena, au unatembelewa mara chache na familia na marafiki?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
32	Kutengwa katika kaya: mfano, kula peke yako, au kutumia vyombo vya chakula vya peke yako au kulala chumba cha peke yako?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
33	Wageni wanaongezeka kukusanifu, kukutania?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
34	Kukutukana?	0. Haijatokea	

		1. Mara moja 2. Mara chache 3. Mara nyingi	
35	Kupoteza heshima/msimamo katika familia/jamii?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
36	Kutoruhusiwa kushiriki shughuli au huduma za kidini (ndoa, komunio, mazishi, kwaya, sala/kutoruhusiwa kwenda kanisani/msikitini?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
37	Upotevu wa wateja wa kununua bidhaa zako au kupoteza kazi?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
38	Kukataliwa kupandishwa cheo au mafunzo zaidi?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
39	Kupoteza makazi ya kuhishi au kushindwa kupangisha nyumba?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
40	Kupewa huduma duni za afya kwa mfano kupelekwa kwa wahudumu tofauti, kutopewa dawa, kutopewa matibabu au pasuaji sitahili?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	
41	Kunyang’anywa mali kwa sababu anafikiriwa atakufa mapema?	0. Haijatokea 1. Mara moja 2. Mara chache 3. Mara nyingi	

J. UKUBWA WA DALILI ZA MSONONO (PHQ-9)

Katika kipindi cha wiki mbili zilizopita ni mara ngapi umesumbuliwa na matatizo haya yafuatayo

QN	VARIABLE	VARIABLE VALUE	CODE
42	Kutokuwa na hamu au raha ya kufanya kitu	4. Haijatokezea kabisa 5. Siku kadhaa 6. Zaidi ya nusu ya siku hizo 7. Takriban kila siku	
43	Kujisikia tabu sana au kukata tamaa.	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo 3. Takriban kila siku	
44	. Matatizo ya kupata usingizi au kuweza kulala au kulala sana	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo 3. Takriban kila siku	
45	Kujisikia kuchoka au kutokuwa na nguvu	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo 3. Takriban kila siku	
46	Kutokuwa na hamu ya kula au kula sana.	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo 3. Takriban kila siku	
47	Kujisikia vibaya-au kujiona kuwa umeshindwa kabisa au umejiangusha au kuikatisha tama familia yako.	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo 3. Takriban kila siku	
48	Matatizo ya kuwa makini kwa mfano unaposoma gazeti au kuangalia TV	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo	

		3. Takriban kila siku	
49	. Kutembea au kuongea taratibu sana mpaka watu wakawa wameona tofauti? Au kinyume chake kwamba hutulizani na unahangaika sana kuliko ilivyo kawaida	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo 3. Takriban kila siku	
50	Mawazo kuwa ni afadhali zaidi ufe au ujidhuru kwa namna Fulani	0. Haijatokezea kabisa 1. Siku kadhaa 2. Zaidi ya nusu ya siku hizo 3. Takriban kila siku	
51	Kama umejibu maswali yote, kwa kiasi gani haya matatizo yamefanya vigumu kufanya kazi zako, kutunza vizuri vitu nyumbani au kuelewana na watu wengine?	0. Sio vigumu hata kidogo 1. Vigumu kiasi 2. Vigumu sana 3. Kwa shida zaidi	

MATUMIZI YA MAPENDENDEZO YA TIBA

Kuangalia kiwango cha uzingatiaji wa matumizi ya dawa za kupunguza makari ya virusi vya ukimwi (VVU) (Adapted ACTG questionnaire).

Ngoja tuongelee matumizi yako ya dawa za kupunguza makali ya VVU.

VARIABLE NAME	VARIABLE	VARIABLE VALUE	CODE
53	Apart from ARV drugs are there any other medications prescribed to you from CTC?	1. Yes Mention…… ……. …… 0. No	

Kuhusu dawa za kupunguza makali ya VVU. (Maelekezo ya swali 54a- e: Tumia moduli ya dawa kumuhuliza mgonjwa kuhusu dawa anazotumia kisha ujaze jedwali hapo chini.

	Kuhusu dawa za kupunguza makali ya VVU. (Maelekezo ya swali 54a- e: Tumia moduli ya dawa kumuhuliza mgonjwa kuhusu dawa anazotumia kisha ujaze jedwali hapo chini.			Idadi ya vidonge unavyomeza kwa mara moja		Unameza mara ngapi kwa siku?	
54 (a)(i)	Zidovudine ((AZT) 300, Lamivudine (3TC)150 (COMBIVIR))	1 Ndio 2 Hapana		54a(ii)		54a(iii)	
54 (b)(i)	Efavirenz (EFV) 600	1 Ndio 2 Hapana		54b(ii)		54b(iii)	
54 (c)(i)	Nevirapine (NVP) 200	1 Ndio 2 Hapana		54c(ii)		54c(iii)	
54 (d)(i)	Tenofovir (TDF) 300/ Emtricitabine (FTC)200 (TRUVADA)	1 Ndio 2 Hapana		54d(ii)		54d(iii)	
54 (e)(i)	Stavudine, Lamivudine, Nevirapine (Triomune 30).	1 Ndio 2 Hapana		54e(ii)		54e(iii)	

55. Lini mara ya mwisho kupata karatasi ya dawa za kupunguza makali ya VVU?
(Tarehe/mwezi/mwaka)……..

Maelekezo: Angalia kwenye faili la mgonjwa na uandike hapa chini

1._____

2. _____

3. _____

56. Je maelezo ya mgonjwa na ya kwenye vinafanana?		1= Ndio; 0= Hapana	
VARIABLE NAME	VARIABLE	VARIABLE VALUE	CODE
57	Katika siku nne zilizopita ni siku ngapi ukumeza dawa zako?	0. Sikukosa hata siku moja 1. Nilikosa siku moja 2. Nilikosa siku mbili 3. Nilikosa siku tatu 4. Nilikosa siku zote nne	
58	Je, ni lini ukumia aina mojawapo kati ya dawa zako? Jaza jibu moja.	1. Ndani ya wiki moja iliyopita 2. Kati ya wiki na wiki mbili zilizopita 3. Kati ya wiki mbili na wiki nne zilizopita 4. Kati ya mwezi na miezi mitatu iliyopita 5. Zaidi ya miezi mitatu iliyopita 6. Sijawahi kukosa kumeza dawa	

59. Kama ulikosa dawa (swali 59 na 60), sababu ilikuwa nini?

……

……..……..

MAUDHURIO YA KLINIKI NA USHAURI BINAFSI

Sasa tuongelee jinsi unavyoudhulia kliniki na ushauri binafsi

VARIABLE VALUE	VARIABLE	VARIABLE VALUE	CODE
60	Je, wewe unatakiwa uhudhulia mara ngapi kwa mwezi?	1. Mara mbili kwa mwezi 2. Mara moja kwa mwezi 3. Mara moja kila baada miezi miwili/mitatu 4. Nyingine (taja)	
61 (a)	Ndani ya miezi mitatu iliyopita umekosa kuhudhulia kiliniki ulizopangiwa mara ngapi?	1. Sijawahi kosa 2. Nilikosa mara moja 3. Nilikosa mara mbili 4. Nilikosa mara tatu	
62 (b)	Akikisha kwenye faili na jaza		
63	Je, ni mara ngapi unatakiwa uhudhulie ushauri wa mmoja mmoja?	1. Kila nikihudhulia kiliniki 2. Ni hiyari 3. Sijui	
64	Je umekosa udhuria uduma ya ushauri mara hii?	2. Ndio 1. Hapana	

65. If you missed the counseling session, what were the reasons? .....

.....

Aksante kwa kunipa muda wako.