THE EFFICACY OF INTERPERSONAL THERAPY ON DEPRESSION AMONG PEOPLE LIVING WITH HIV/AIDS ATTENDING CITY COUNCIL HEALTH FACILITIES IN DAGORETTI DISTRICT- NAIROBI

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DECLARATION

I, Nyaga Immacolata Mathiga do hereby declare that this is my own original work and that I have not presented the same to any other University

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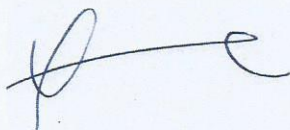
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ABBREVIATIONS

IPT	Interpersonal therapy
HIV	Human Immunodeficiency Virus
AIDS	Acquired Immune Deficiency Syndrome
CD4	Cluster Differential
<	Less than
ARV	Antiretroviral
ART	Antiretroviral Therapy
HAART	Highly active antiretroviral Therapy
CBT	Cognitive behavior therapy
CBHWs	Community based health workers
W.H.O	World Health Organization
BDI-II	Beck's Depression Inventory
BSS	Beck's Suicidality Scale
KEMRI	Kenya medical research institute

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DEFINITION OF TERMS

- **Intervention** is a continuous transition from none, or from little personal contribution to the patient's active participation. It is the knowledge base about psychosocial cultural issues.[1]

- **Depressive disorder** -an illness that involves the body, mood and thoughts and interferes with daily life normal functioning and causes pain for both the person and those who care about him/her.[2]

- **Primary health care setting** –the first level of care or an entry point to health care system which is a particular approach that is concerned with continuing care accessibility, community involvement and collaboration between sectors [3]

- **Human Immunodeficiency Virus (**HIV) also known as HIV infection is a complex condition affecting the patient, their family and the community as a whole.[4]

- **Acquired Immuno deficiency syndrome** (AIDS):A late symptomatic stage of disease caused by infection with the Human Immunodeficiency Virus (HIV) characterized by a high viral load, a profoundly depressed level of CD4 T-lymphocytes, severe opportunistic infections and cancers.[4]

- **CD4** the "C" and the "D" stands for Cluster of differentiation and refers to the cluster of proteins that make up a cell surface receptor.

ABSTRACT

Introduction and Background

The commonest mental health disorder diagnosed in level two and three Primary Health Care settings in people living with Human Immune Virus and Acquired Immune Deficiency Syndrome is major depressive disorder. Psychotherapies which have been evaluated and found to be effective mostly in the western setting in treatment for major depressive disorders in HIV /AIDS include Interpersonal Therapy. In this study the researcher adopted IPT intervention to the comprehensive management of HIV in Kenya

Objectives

To carry out an interventional study testing the effectiveness of Interpersonal therapy on depression and suicidality among people living with HIV/AIDS attending City council health facilities in Dagoretti district.

Specific Objectives

1 To assess depression and suicidality among people living with HIV/AIDS

2 To locally adapt IPT to the HIV situation in Kenya

3 To assess the efficacy of IPT on major depressive disorder and suicidality in   HIV

     positive patients

4 To assess the efficacy of IPT on ART adherence and HIV disease progression

     (CD4 counts)

Study Design, Subjects and Setting

This was an interventional study that constituted an experimental group and a control group, in four City County Health facilities in Dagorretti District of Nairobi (Woodley, Ngong Road, Waithaka and Riruta) among people living with HIV/AIDS.

Sample size:

A sample of 305 HIV positive people with a CD4 count <500 cells per milliliter of blood aged 18-55 + years old (grouped according to WHO policy) were recruited. Waithaka health facility had experimental group (N=152) the control group was Ngong RD (N=52), Woodley (N=50) and Riruta health facility (N=51)

Ethical Considerations

Ethics approval was obtained from the University of Nairobi/KNH research and Ethics Committee. Participants were explained on the nature of the study, confidentiality, anonymity, voluntary participation, inconveniences at times and the right to withdraw any time in the cause of the study without loss of benefits

Instruments

 Self-administered questionnaires were used which included;

 (i) Social Demographic questionnaire

(ii) Becks Depression inventory (BDI-II)

(iii) Becks suicidality scale (BSS)

These instruments are well understood by the researcher.

Intervention

Two assessments were carried out using similar instruments at an interval of 3 months among the study groups. Experimental group was given 16 sessions of group therapy in form of discussions, divided into three phases. The phases followed the four basic interpersonal problem areas of IPT which are unresolved grief, role transitions, interpersonal role disputes and interpersonal deficits. The IPT was given to the participants as psychoeducation on depression, suicidality and HIV relatedness emotional symptoms. Each psychoeducation intervention totaled 12 hours of three sessions per phase. It required the therapist to be observant as each member of the groups shared their problems in group discussions, to notice the emotional reactions like crying, verbalizing feelings of sadness and hopelessness. This helped to identify the psychological symptoms in the

patients and the interpersonal context in which it presented. The therapist addressed the problems in the present, and acknowledged the exacerbating role of long standing interpersonal deficits which were the focus of treatment. This was done by use of discussion, reflections, support, interpretation and participant's encouragement. The therapist tried to disrupt the clients vicious cycle of self -defeating, interpersonal interactions and relevant issues having to do with the current relationships in small group discussions of 8-10 participants

Data Management and Analysis

Quantitative data was double entered into a computer data base using MS-Access application by two separate groups of data entry clerks. Data was analyzed using (IBM SPSS) version 20.0 utilizing descriptive and inferential statistics in form of tables, figures, linear and narratives.

Results:

Post intervention assessment indicated that in comparison to the control group, the intervention group had a faster reduction in depression symptoms scores. Mean Beck score revealed no significant difference at the baseline 32.3% (17.3vs15.0;p=0.071) After six months of follow up with intervention in experimental groups and treatment wait list for control group mean Beck score was significantly high in control compared to experimental 29.6% (24.2 vs. 5.4;p<0.001

Conclusion: The intervention was effective, in reducing major depressive and suicide symptoms in people living with HIV/AIDS.

1.0 CHAPTER ONE

1.1 INTRODUCTION

The commonest mental health disorder diagnosed in levels two and three primary health care settings in people living with Human Immune Virus and Acquired Immune Deficiency Syndrome is depression. Despite advances in the treatment of HIV, there continues to be a considerable and unexplained variability in the progression of this disease.[5] Major depressive disorder not only causes future disability but is also associated with poor quality of life, faster HIV disease progression and poor adherence. [6] It is estimated to be the leading cause of disability worldwide and accounts for more than one in ten years of life lived with disability as well as significant premature mortality due to suicide and physical illness.[7] Most of the researches that were done in the early years when HIV epidemic was very high shown that researchers were focused to the testing of theories associated with the disease because of its epidemic progression.[6] The researchers indicated an association between stress and depression in the HIV disease that led to changes in the immune systems [5]. Further as changes in the disease progression continued, research focused on testing if psychosocial disturbances could alter immune responses[8] and therefore this made sense to them to examine whether stress and depression affected the immune system based on the HIV Disease [8] The disease progression could not be clearly explained as the populations continued to be at high risk for mental health disorders due to the psychological experiences on the infected and the affected people [9]. Depression may come as a symptom, a syndrome and as a disorder in the life course of HIV/AIDS disease.[9,10] The presence of the depressive symptoms has been linked to non-adherence and may be a more important factor in none adherence than the neurocognitive impairment.[11] These symptoms often occur without the existence of serious problems and are relatively common in all ages, occurring in 40% or more in children and adolescents.[2]

Depression in the infected person can be a major contributor of life risk behaviors or may be a response to HIV infection, with both biologic and psychological factors playing a role in the life of the patient .[12] For those who are not psychologically taken care of , they may not identify themselves as depressed but may complain of fatigue with loss of sleep (insomnia) or even with memory loss (amnesia).[13] Therefore, medication side effects and disease state, should be taken into consideration if decreased mood or lack of energy is experienced [9]. The infected person may experience mixed symptoms of anxiety and depression that is a collection of elements of undesirable affects that occur when certain life events follow in the patient's life.[14] Beck explains depression as a "self-directed anger, where the cognition of the depressed person is characterized by faulty calculations in judgment. [15] that beck called "cognitive distortions" where negative thoughts reflect underlying dysfunctional beliefs and assumptions when a person's beliefs are activated by situations or events. [15] Later, depressive patterns occurs as the person tries to adapt an active role to adjust their dysfunctional thinking as they gain relief from a range of psychiatric conditions.[16] Depressed people have been found to suffer interpersonal difficulties sometimes eliciting rejection and negative moods. In others it appears to harm even interactions with strangers or even with casual friends.[17] Research has indicated that depression is sometimes associated with reduced functioning of the human immunological system and possibly weakens a person's resistance to diseases like HIV/AIDS.[18] Regardless of all the developments done in treatment of HIV/AIDS, the disease has continued to have a sizable explanation variability in the progression with growing percentages of the HIV being women and people living with poverty [19] There are still high rates of depression and past Traumas among the people living with HIV/AIDS [20] Depression in these people can be disruptive to people's family, social, and occupational functioning and this has been found to generate a rage of psychological emotions that

include anger, anxiety fear of death and more emotions could sprout from feelings and judgments on who people should tell about their illness and this may increase the risk of suicide or suicidal behaviors that calls for concern[21.] In a patient who is HIV positive, if the symptoms are characterized by the onset of Depression, due to loss of health, the patient's vegetative development may be affected. This escalates the virus and the condition becomes a complex bio psychosocial problem associated with opportunistic infections and conditions that are often the cause of morbidity and mortality.[22]

1.1.1 Interpersonal therapy

Many interventions to deal with Depressed HIV+ patients have been employed to try improving and increasing the patient's life span. Interpersonal therapy is one form of intervention that does not focus on the disease progression or cure but has been tried elsewhere in HIV infected depressed patients and found to be effective[.23] IPT is psycho-education in nature to some degree and has been employed in many countries of the world, although it has not been used much in Kenya. The IPT approach puts its emphasis on identification and management of four interpersonal problem areas on the patient; unresolved grief, role disputes, role transitions and interpersonal deficits to treat depression[23]. When using IPT, It requires the therapist to identify the target diagnosis of the patient, the interpersonal context in which it presents, diagnosing major depression, and other emotional and psychological demands that cause the patients symptoms. The therapist follows DSM-IV and employs severity measures such as Beck Depression Inventory (BDI) to refer to the problem as an illness rather than the patient's personal defects[23]. IPT applications in HIV patient's pays particular attention to the clients unique set of psychosocial stressors: the stigma of the disease, the effects of dealing with family members who may isolate themselves, coping with the medical consequences of the disease.[24]The IPT therapist is therefore the patient's ally and helps the patient manage the four basic interpersonal areas.[25]

Klerman has outlined that IPT is psychoeducation in Nature and therefore involves the therapist teaching the patient about their nature of depression and the ways that it manifests in his/her life and relationships. When using IPT it is not combined with other talk therapies[25]although it is often combined with drug therapy particularly when the client suffers from such mood disorders as depression, dysthymia or bipolar disorder.[26] When using IPT approach, it is important for therapist to review depressive symptoms in detail and the accurate naming of the problem is essential[27] because the therapist and patient attempt to determine which of the four problem areas is most closely associated with the onset of the current psychological symptoms. The therapist explains to the client that he or she has adopted the "sick role".[25] the concept of the sick role will be based on the notion that illness is not merely a condition but a social role that affects the attitudes and behaviors of the client and those around him or her and therefore over time, the patient will come to see that the sick role has increasingly come to govern his or her social interactions.[26] The patients Therapy is organized to help them deal with the difficulties in the primary problem areas by use of the following: Identification of problem areas, dealing with unresolved grief, Interpersonal role dispute, interpersonal role transition and interpersonal deficits.[26] The researcher will use IPT as a supportive psychotherapy appropriately.

1.2 BACKGROUND

Depression has led to global disease burden and cause of disability worldwide.[28]Although it is not a significant cause of mortality, depression seriously reduces the quality of life for individuals and their families. It is a risk factor for suicide and often worsens the outcome of other physical health problems.[29] in people living with HIV/AIDS; common mental disorders have been recognized throughout the world. [30] In Kenya, the situation is not different because moderate to severe psychiatric illnesses are prevalent among patients seen in primary health

care facilities. Depression may present as key to the contribution in life risk behaviors of the infected person or may be a reaction to HIV infection together with biological and psychological factors playing a role. [31] It is also linked to non-adherence and may be a more important factor in non- adherence than neurocognitive impairment.[32]Once the diagnosis of depression is done and the presence of risk behaviors emerge, the most important factor in promoting wellness with the patient, is to promote adherence to care.[29] The risk that depression presents in those living with HIV infection may be under estimated by the patient and by their care providers where a significant proportion of people living with HIV/AIDS may be unaware of being depressed. Therefore any psychiatric assessment may be an opportunity to provide psycho-education on risk reduction and prevention[33]. In the early phase of HIV diagnosis, stresses include adjusting to the diagnosis of HIV seroconversion, disclosing to others, adopting safer sexual and medical treatment[33]. It is therefore important to discuss risk factors to prevent the challenges of further mental illness because adherence to psychotropic medication may be essential before adherence to HAART.[34]

Studies done showed that those with HIV and unresolved grief or multiple traumas are more likely to have panic attacks, suggesting that HIV positive patients with panic attacks should be screened for grief reactions.[35] If people living with HIV/AIDS are depressed, they may experience fear of imminent death, guilt of infecting others and resentment that causes emotional changes enough to lead them to depressive mood episodes.[36]   Having HIV itself can be traumatic event [37] It is therefore important to enlighten them on how to recognize symptoms of depression and how to deal with the psycho- stressors that are the precipitating factors. The mental health providers should provide empathetic listening and support during the phases of the illness through psycho education groups and peer support that will help them gain life skills to use in controlling and reducing the risk behaviors that increases the

progression of the disease.[37] The most effective way to build an alliance with the patient is by initially focusing not on psychiatric issues but on the patient's experience of his/her illness. Discussing the illness aspects on an interpersonal therapy psycho-education programs must be very specific to the problem areas that are causing the mental disorder. Emphasis on the value of intervention must be clear to the participant to ensure he/she will learn skills to address problems in the present, and acknowledge the exacerbating role of long standing interpersonal deficits of unresolved grief, role-transitions, interpersonal role disputes (often marital disputes) and interpersonal deficits (deficiencies) that could be some of the stressors.

1.3 Statement of the problem

Nairobi City council where the study was done had 60 Health facilities in Nairobi county by the time of the study. There were four city council health facilities in Dagoretti District where this research was done. The four Health facilities have a patient population of 80,000 treated in a month. According to the clinical records on HIV/AIDS counseling and testing in the four clinics namely Woodley Clinic, Ngong Rd health Centre, Riruta health Centre and Waithaka health Centre, the extent of newly tested HIV patients was in the increase. In the facilities monthly and quarterly reports, there was an approximately 40 new infections in the four facilities which is quit a high number given that new HIV infections should be decreasing[38].Most of these patients, both new and old, suffer depressive symptoms. Majority of them receive their health care in outpatient clinical settings where they are first diagnosed with the common mental disorders, HIV/AIDS and other illnesses. The diagnosis of the HIV infection is the beginning of serious distress and concern to the infected individual and their families. These people are in their most productive years and the virus often impacts negatively on the individual's Physical, sexual and reproductive health capacity. Finally, the virus becomes a complex medical, psychological and social problem leading to fear, anxiety,

stress, decreased immune system with opportunistic infections and conditions that are often the cause of morbidity and mortality. Although the four facilities offer HIV test and treatment as per the Kenya national guidelines, (HIV/AIDS strategic plan) [38] There is no structured psychosocial interventions in the management of Depression in people living with HIV/AIDS. Despite the fact that all the four facilities have 60% of trained service providers, in the care of HIV patients, they are not adequately prepared to recognize, diagnose and roll down HIV related psychiatric symptoms in a psychological structured intervention.

This makes the HIV infection a complex condition affecting the patient and their families and they are faced with difficulties in making decisions with uncertainties of the disease progression. For some patients, this can manifest to premature grief, anxiety, depression or traumatic death.[39] Records in the four facilities reveals that there is lack of adherence to those with HIV infection who also record psychiatric problems. There is therefore a need for comprehensive interpersonal psychological care intervention incorporated into the four City Council Health Facilities for HIV services.

1.4 Justification and Significance of the Study

Studies done by Summers; [40] using belief therapy techniques found a high psychopathology and an absence of appropriate intervention. This leads to increased pain, intensity and morbidity with more health related complaints and more HIV related illnesses. There was therefore a need to introduce interventions that are evidence based, flexible, integrative with drug therapies that are belief. The Researcher hoped the findings of the study will illicit an interpersonal inventory of symptoms and the ways in which they manifest in the patient's life and relationships. This would help to develop effective programs in treatment of HIV /AIDS in depressed patients. . The study will also add knowledge to policy makers in standardized, structured bio psychosocial practices and policies in running and monitoring of depression in people living with   HIV and other physical illnesses.

1.5 OBJECTIVES

General Objective
To carry out an interventional study testing the effectiveness of Interpersonal therapy on depression and suicidality among people living with HIV/AIDS attending City council health facilities in Dagoretti district.

Specific Objectives
1. To assess depression and suicidality among people living with HIV/AIDS

2. To assess the efficacy of IPT on major depressive disorder and suicidality in HIV positive patients

3. To assess the efficacy of IPT on ART adherence and HIV disease progression (CD4 counts

1.6 HYPOTHESIS

1.6.1 Null Hypothesis
Interpersonal therapy is not an effective intervention for depression in people living with HIV/AIDS.

1.6.2 Alternative Hypothesis
Interpersonal therapy is an effective intervention for depression in people living with HIV/AIDS

1.7 Theoretical frame work

Many researchers from Freud onward including John Bowlby have theorized that "early parent-child attachment bonding experiences are crucial to the formation of a positive view of the self".[41] This study was guided by Bowlby attachment theory that proposes individuals form working models of relationships in the form of expectations based on their earliest experiences of acceptance or rejection.[41] "The attachment relationships serve to regulate biological and behavioral systems related to emotion'.[40] For example, a secure attachment can be used to reduce distress.[41] Attachment emanates from a biological desires for proximity or closeness and may add up in meeting a survival need. He argues that human beings like other

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animals have "a basic need to form attachments with others throughout life and will not function well unless such attachments are available to them".[42] Therefore, in an HIV/AIDS patient success in reducing symptoms depend on a person's experience in a stable and supportive environment during childhood as they fostered cognitive social and emotional development. For instance, a primary care taker such as the spouse or parents who are rejecting, uncaring, unavailable, or inconsistent may foster a negative self–concept in the depressed HIV positive patient because self–concept is a potential cognitive vulnerability factor for depression.[5] A poor spouse or parent relationship may make the HIV patient vulnerable to depression possibly in response to negative events that are believed to be reflections of one's value[43] The study was also based on the foundation of Bowlby's work, and the extension of his work by Margret Mahler and Mary Ainsworth, because this theory has been applied widely[44] In clinical application of this theory the researcher focused on exploring the patient to deal with four potential problem areas of focus. This involves resolving "an interpersonal struggle in a role dispute, helping a patient to mourn the loss of an old role and assume a new one in a role transition, or decreasing social isolation for interpersonal deficits"[44] by exploring his fears, depressive emotions, anxiety and interpersonal relationships.[17]Attachment theory is a varied approach for the therapist's stance in offering services to the HIV positive patient in a relaxed and supportive way. Most patients with HIV have been abandoned by significant others due to the stigma attached to the disease for the both infected and affected.[12] the goal of therapist impact the knowledge to the patient to take action in dealing with the fears of death stigma and therefore experience a sense of belonging. The patient will accept a positive way of life, with an understanding of their social support, good nutritional value, good rest, muscle relaxation exercises and appreciating those who are significant to them as illustrated below in theoretical frame work

Psychological influence
Lack of patient care information
Fear, anxiety and stress of HIV infection
Depression and suicidal symptoms
Lack of social support and hope

Decreased poor health
Leading to opportunistic diseases

Social influence
Lack of management of HIV
Lack of social support and isolation

Economic influence
Loss of job
Lack of financial support

Dependent variables

Interpersonal relationship
Role deficits
Stigma

Dependent variable
Depression and suicide

Independent variables

Age ,sex ,male ,female
HIV/AIDS adherence to ARVS
Self-stigma ,opportunistic infections
Disease progress ,CD4 Count

2.0 CHAPTER TWO

2.1 LITERATURE REVIEW

Major depressive disorders are wide spread and have become a common source of distress and psychosocial disabilities.[39] these disorders cause considerable suffering, disability and social exclusion in Africa and other developing countries. They are poorly recognized and treated. The World Health Organization estimates that a hundred and fifty four million (154 million) people suffer from depression and around eight hundred and seventy seven thousand (877,000) die through suicide every year.[7] Estimates for global burden of disease is that five of the ten leading causes of disability worldwide in both developed and developing countries are mental problems and among the disorders, depression is the second leading disorder[10]. Depression as a diagnosis category has been sub classified in a number of ways and particular distinctions have been made between bipolar and unipolar disorders, between endogenous and reactive (neurotic) depressions.[2] With the development of short term supportive psychological treatments for depression, focus on the connection of interactions between people and the development of a person's psychiatric symptoms, there has been a rapid development of a range of short term psychological treatments for depression[8]. Various interventional studies for this disorder have since been applied to the treatment of people with Human Immunodeficiency Virus infection and one of these are the interpersonal supportive psychotherapy.[16]

2.1.1 Depression

The term depression in this study will generally be used to refer to non-bipolar and unipolar disorders and non-psychotic,(that is not hallucinated or deluded) [1] depressive disorder since this is the type of mood disturbance for which IPT for depression is to extensively test in people living with HIV/AIDS attending the four city council clinics in Dagoretti.

Depression is the most important risk factors for suicide that claims 850 million lives every year in the world 1. It is among the top three causes of death in young people aged 15 to 35 years[8] and is one of the leading causes of death in young women in India and China.[45] Depression is associated with severe stressful life events that are the source of personal and social disabilities[10]. These may include change of jobs, a serious accident, and chronic illness, extreme lack of family resources, violent family environment, parental conflict or divorce.[46]There is a considerable variation in the rates of depression in different countries but on average, 6 to 10 percent of women in developing countries are suffering from the condition and higher rates of depression have been found in women attending primary health care centers in developing countries.[47] Comorbidity with depression is common in HIV/AIDS infection and studies done found a frequency of major depression almost two times higher in HIV positive than HIV negative study participants .[48]

Other studies done by Blank also found that having a psychotic disorder may put a patient at high risk of contracting HIV infection.[49] This may be due to the high comorbidity between substance abuse and psychosis as well as to poor decision making during periods of illness.[49] A study done on HIV positive patients, reported by Kinyanda et al indicated that that more people receiving care for HIV who demonstrated positive status for major depression were (36.0%) and those with dysthymia were (26.5%) more than for generalized anxiety disorder (15.8%) on screening in the previous 12 months.[11.29] studies done in US for male inmates in diagnosed with HIV infection revealed that psychiatric disorders were significantly more common among HIV infected inmates population (89%) than their non-infected counterparts after age, gender and race adjustment.[32]

In a longitudinal cohort study of HIV infection in women, a diagnosis of current major depressive disorder was four times greater in HIV sero-positive compared to HIV non-seropositive women with a 9.4% versus 4.8%.[21,32]Although most of the comorbid conditions

require the coordinated and holistic treatment of both physical and psychological health symptoms, and primary care is the best placed to provide this type of service, there is a missed diagnosis in the primary care setting among people living with HIV/AIDS.[38]In developing countries, up to 20 percent of those attending primary health care suffer from the often –linked disorders of anxiety and depression but the symptoms of these conditions are often not recognized because most patients do not complain of Depression but of physical symptoms[6]

2.1.2 Prevalence and risk of Suicide in depressed people living with HIVAIDS

Suicidal behavior rates have been widely studied in Gay men and lesbians among the black Americans than in other populations.[50] Studies conducted before the introduction of highly active antiretroviral therapy indicated an increased risk of completed suicide in patients with HIV /AIDS that was 7 to 36 times greater than the non HIV infected population.[51] Since the introduction of HAART, there is more evidence that suggest suicide among HIV patients may be mediated by factors other than HIV including depression or substance related disorders. [21]Although suicidal ideation is commonly reported across many different types of disorders, reports have indicated that actual suicide attempts are much more common during depression.[52] In HIV–infected patients suicide risk is higher than in populations with other chronic medical illnesses such as cancer.[53] It afflicts as many women as men, across different countries and settings.[54] Many Suggestions have been made that the decision to commit suicide and the actions taken by the individual towards that end may be influenced by psychological conditions that impair a person's judgment.[26] Some of the individual's deep feelings of hopelessness, helplessness and despair that is experienced by people living with HIV/AIDS may lead them to attempt suicide. Studies on group cohorts of gay and bisexual men found reporting of HIV positive serostatus to a person, was associated with persistent

psychological distress manifested in the form of depression, anxiety, suicidal ideations and, suicidal attempts.[55] There is also evidence of increased risk of suicidal ideation and attempt in people with HIV/AIDS and particularly among women.[56] HIV disease is particularly painful when involved with some neurologic symptoms and is noted to be associated with risks of suicide in HIV patients. The strong connection between symptoms of depression, suicidal ideation and behavior, a primary strategy for reducing suicide for these people is to try and increase the availability of effective psychological interventions like IPT .[57] when exploration of suicidal ideation is done, past suicidal behaviors looked at with specific risk factors included as part of the clinical assessment. Patients, who seek treatment at the primary health care, could increase access to services early enough and this may augment the quality of life in suicidal individuals with HIV /AIDS and may have the opportunities to life.

2.1.3 Emotional responses to the diagnosis of HIV

Moderate to Strong feelings in HIV persons are natural responses to profound life-altering periods such as the time when one is diagnosed with HIV or has learnt that someone you love is HIV positive. These are emotions that should not be considered as irrational reactions. These emotional responses to HIV illness and death can be defined as progressing from a stage of crisis to a stage of acceptance[58]. For those with experiences of Denial, it allows the individual to continue to live life as earlier, while slowly adapting to the reality of the disease.[59] in others, it may result in reluctance to accept available help or continue with risky behaviors.[60] When they are faced with concerns about the future, feelings of anger, guilt, sadness and suicidal ideations are common. Many of them may direct anger towards self for having allowed themselves to be infected with the disease. It may be turned towards another individual perceived to be the cause of the illness or it could be a response to the rejection experienced from the family, significant others or society.[41] They may experience guilt that

may result from perception that the disease is a punishment for certain behaviors they did, feelings of fear of having infected another individual. Infected persons may try to bargain for better life with their creator as well as their health service providers and treatment team. At this time they develop fears and anxieties regarding sickness with a suffering that follows.[61]

The early stages of diagnosis appear to be associated with stress related fears of unknown[61]. After the initial crisis period, some patients begin to re-establish a sense of personal equilibrium and accept their HIV positive status.[62]After this stage there may be a change to healthier life style practices with the onset of AIDS related symptoms, feelings of loss of control, hopelessness, and concerns about disfigurement, dependency and death arise. Most people with HIV/AIDS died within two to three years of diagnosis in the early years of the epidemic, but the disease is now considered to be chronic as effective antiviral drugs with psychological interventions can prolong life for many years [63]

2.1.4 Depression and Stigma

The way people living with HIV respond to stigma is not necessarily or directly related to any measure of stigma in general population[62, 64]. Social stigma and its accompanying negative consequences are sources of stress that can very easily intensify the anxiety and feelings of helplessness and hopelessness that frequently accompany the course of HIV related illnesses.[64] Stigma is also viewed as a weighted measure in whether or not to disclose HIV – sero positive status[23] and social stigma with its accompanying negative consequences are the source of stress that can intensify depression with feelings of hopelessness and helplessness that frequently accompany the course of HIV related illness.[65]It refers to a mark of shame or disgrace that is defined as the use of stereotypes and labels when describing someone and is often attached to people who suffer mental health issues. Health care givers should recognize the depressive emotions of stigma that may lead to symptomatology. The care giver should

protect the patients' confidentiality beyond that in normal circumstances. They should assist patients with disclosure and help build a support system for the patient by identifying supportive friends and family who are open to psycho-educate the patient regarding HIV related emotions that may lead to depression and suicidality. Members of the treating team must be aware and comfortable to the response of the patient towards his illness with facts related to HIV transmission because negative attitudes of care giver may make them feel even more isolated and less likely to comply with treatment and psychotherapy.[6]For this reason many people are so uncomfortable and stigmatized and they prefer to suffer in silence than disclose to friends or relatives for the help they need.[66]for example HIV positive people choose to avoid voluntary counseling and testing and this may be predicted by the degree of actual stigma they may personally experience after disclosure [9]

2.1.5 Barriers to treatment and adherence

Some of the predictors of adherence that have been consistently identified among persons with HIV infection with or without mental health disorders include social stability and support, beliefs and knowledge about medications and confidence in their ability to adhere to treatment successfully. Therefore adherence to both highly active antiretroviral treatment and psychotropic medications must be addressed as it tends to be affected in depression[67] Depression is the most studied mental health disorder shown to be predictive of poor adherence to medication and particular demands to HIV treatment[67] .This makes adherence essential and most important factor affecting outcome of treatment.[68] When appropriate identification and treatment, or referral for treatment of underlying mental health disorders is done at an early stage, it helps in facilitating optimal adherence among these populations. The causes for non-adherence are multiple and can include denial, fear of side effects and fear of being identified as an AIDS patient by family friends or those around the person.[69] It is

therefore important that patients should be asked about adherence to all aspects of treatment including how to keep appointments and if they are taking medications for other medical conditions as well as antiretroviral. The patients should be given enough health information by health service providers because use of internet can serve as a source of disinformation, encouraging the use of unproven natural remedies that are perceived as benign over regiments seen as medical and this may be dangerous. Herbal remedies may be favored by patients from different cultural backgrounds. Financial constraints may play a role for some patients. Poor language and literacy skills which a patient may be ashamed to discuss with care providers can also be a barrier to adherence.[33]Substance abuse can have an impact on all aspects of a patient's ability to care for him/her. Drugs or alcohol may affect the liver function already compromised by HIV infection making adherence to highly active antiretroviral therapy more difficult. Therefore barriers to adherence should be explored, addressed and the care provider should develop an understanding of specific barriers to adherence essential in the assessment of patient with HIV infection.

2.1.6 The role of Community based health workers (CBHW) in addition to management of Depression in people living with HIV/AIDS at the Community level

According to the second National Health sector strategic plan (NHSSP) II, communities are at the core of improving the health status of their people through community owned resources. Home based care in Kenya is already rooted in the community and the front line care givers are the community health workers.[70] Mental health programs like any other disease related programs should be encouraged to involve the community based health workers in the identification of early depressive symptoms in HIV/AIDS patients and refer them to health facilities for early intervention. These men and women who volunteer from the community are not only known individuals by name and by their residences, but also are committed to the community's well-being. They may assist in the triage outpatient clinics and

community based NGO'S in identifying individuals with certain needs, helping and following up of the individuals. CHWs have helped in identification of depressed HIV patients and referred them to the primary health care for psychological intervention[71] in spite of the little knowledge in mental health symptoms.

2.2 Interpersonal therapy Intervention on depression for people living with HIV/AIDS

Psychosocial interventions that are medication friendly have been researched and found to be effective in the management of depression. These interventions have been found to be fundamental in health care for treating people with depression and HIV/AIDS. These interventions are Cognitive behavior therapy and Interpersonal therapy that are psychoeducation in nature.[21] these therapies are designed to use psychodynamic techniques of discussion, reflections, support, interpretation and encouragements as well as muscle relaxation techniques. They are medication friendly and are short–term therapies focused on the interpersonal issues related to the individual's depression.[14] they are significant in their way of teaching patients to attempt and explore relevant issues having to do with current relationship problems, conflicts, communication difficulties, social relatedness and family dysfunction. IPT tries to reduce depressive symptoms as well as to address problems in the interpersonal context.[17]

In studies that were done on IPT to assess the effectiveness of the therapy combined with imipramine and cognitive behavior therapy, it was found that the most severely depressed patients tended to do better with medication and IPT compared with the placebo treatment, whereas the initially less depressed patients had reduced symptoms with all treatments.[26] This therapy has been found to be effective in reducing acute symptoms with effectiveness comparable to tricyclic antidepressants[17] Studies done on adolescent depression shown IPT to be effective treatment in a number of controlled studies in clinic and community settings, using both individual and group formats. The IPT treatment in adolescence is based on the

idea that adolescent depression affects relationships, which in turn affect mood.[2] The treatment focuses on the adolescent's depressive symptoms and the social context in which these symptoms occur.[16] Some psychological emotional symptoms in people living with HIV are similar to those experienced in depression. Several studies done on IPT show that people who are exposed to traumatic life events are at greater risk of psychological distress and psychiatric disorders.[5] Studies that were done on HIV seropositive patients and breast cancer showed promise for the use of IPT.[72] Since depression and HIV infection can be precipitated by psychosocial problems and IPT is psycho educational in nature, these patients can be buffed to reduce symptoms that lead to depressive episodes and suicide. The patient is going to learn life coping skills because IPT focuses on the client's interpersonal deficits of the emptiness and pain within the self. The IPT psychoeducation component is to help reduce precipitating factors to distress by challenging maladaptive thinking processes, interpersonal role disputes, and role transition then suggests a positive life coping strategy on positive communication seeking social support. [73]Among the studies reviewed on HIV patients, social sequelae can include the patient having to deal with fears of sickness and death as well as with stigma and discrimination and the need to develop coping strategies despite treatment.[62] There is need for health service providers to recognize that burden of pain continues and psychological needs are under explored.[74] Studies done on HIV seropositive patients found that depression associated with role transitions occur when a person has difficulty coping with life changes that require new roles. These may be transitions such as retirement on medical grounds, career change, leaving a job or returning to the rural home. Clinically depressed HIV patients are most likely to experience role changes as losses rather than opportunities and the loss may be obvious as when a marriage ends or more subtle as the loss of friends due to the stigma associated with HIV. IPT as a form of therapy therefore offers attention through open discussion on a time limit which allows realistic planning of

what can be achieved, the use of focus and discussing within that focus. Therefore, therapy is likely to address the patient's ability to assert his/her needs and wishes in interpersonal encounters[21]

Interpersonal therapy is relatively new in Britain but, was received with enthusiasm by both patients and multidisciplinary professionals. It has been manualised as a treatment for depression, mood disorders associated with HIV, and recent work has been modified and extended for treatment of anxiety, dysthymia, adolescent disorders and depression of later life.[20, 21] In studies that focus in relieving symptoms of depression the Interpersonal therapy model incorporates psych-education; it is so medication-friendly that its first stage could work as a form of compliance therapy. It agrees with medical model of psychiatric illness and its rationale sits well with family and offers a way of accessing systematic resources within the individual.[39] when the patient succeeds in an interpersonal situation, the therapist acts as a cheer leader reinforcing healthy interpersonal skills. When the outcome is adverse, the therapist offers sympathy, helps the patient to analyze what went wrong in the situation, brainstorms new interpersonal options, and role plays them with the patient in rehearsal for real life. The patient then tests them out. Given this emphasis on interpersonal interaction, it is not surprising that depressed patients learn new interpersonal skills from IPT that they have not seen with pharmacotherapy.[13] IPT is particularly accessible to the patients who find dynamic approaches mystifying or the homework demand of CBT that are daunting. [33] In a In a study that evaluated the application of IPT in special populations, it was found that particular attention is paid on the clients unique set of psychosocial stressors, emotional and spiritual needs arising from the environment, physical and social stressors.[19] Therefore, the psycho educational aspect of IPT is helpful in liaison or primary care setting and extending this to giving a sick role may help validate a psychiatric diagnosis for patients and their

families.[15] The patient tests them out on the emphasis on interpersonal interaction; they learn new interpersonal skills that they have not seen with pharmacotherapy[13, 19]

It also helps to validate the patient's anger as a normal interpersonal signal, to encourage its efficient expression, and to encourage taking appropriate social risks.[13] In the last few sessions, the therapist reminds the patient that termination is nearing, helps the patient to feel more capable and independent by reviewing his or her often considerable accomplishments during the treatment, and notes that ending therapy is itself a role transition, with inevitable good and painful aspects. This intervention was developed originally by Klerman for adolescents who found CBT too much like school work.[26]

3.0 CHAPTER THREE

3.1 METHODOLOGY

3.1.1 Study Design

This was an outpatient based interventional study constituting experimental group and control group that involved data collection between September 2013 and August 2014. The study had two comparator arms as follows:

1. Patients aged 18 – 55+ years, identified for HIV sero-positive and having a CD4 count ≤ 5 were put on intervention and monitored for 6 months.

2. Patients aged 18 -55+ years, identified for HIV sero-positive and having a CD4 count ≤ 500 monitored for 6 months without intervention (*receiving standard treatment care*)

The primary measure of the two mental disorders (i.e. Depression and Suicidality) was;

(i) Becks Depression inventory (BDI-II)

(ii) Becks Suicidality scale (BSS)

Each mental disorder was compared across the two study arms at 3 months interval starting at Baseline, and final. The entire follow-up was 6 months.

3.2 Study Sites

Nairobi City Council had the largest number of outpatient Health Facilities in the entire nine Districts of Nairobi County at the time of the study. The City grew steadily from a Municipality with effect from 15th July 1914 after the committee which was running its affairs came to an end on the declaration of Nairobi as a Municipality with a municipal corporation to a City council**.** [75] Dagoretti district, where the study was done, is administratively located to the west of the City center. It had a population of 368,595 people in the year 2012 with a growth projection of 3.2% (Dagoretti District Health management office).There were four City Council Clinics in this District namely

Woodley, Ngong Road, Riruta and Waithaka. The core functions of these facilities is to give integrated Health services with an exception of Woodley Clinic which offers Mental Health services and Waithaka which has an inpatient maternity services. The four facilities run an Adolescent Reproductive Health services and are linked to the community by the urban slum development project Nurses. The urban slum is the biggest development project of its nature run by the City Council in the informal settlements of Nairobi in conjunction with United Nations Fund for Population activities UNFPA. Although the four health facilities are located about 4 - 5 Kilometers from each other they were under the same Health Mmanagement Board and are therefore treated as one large institution in Dagoretti and were under Nairobi Health Management Board.

These facilities were selected because all patients who seek primary care health services are tested for HIV serology using a rapid test in each facility. Riruta health center serves as a referral for CD4 cell count and is the only City Council outpatient health facility in Dagoretti with an HIV Comprehensive Care (CC).The four facilities provide a representative sample of patients of all ages, gender, and socioeconomic background required for this study. HIV is not limited to either those of lower or upper social economic status; therefore this study was not limited to any social economic status. Riruta health facility which is a referral for the other three facilities, registers between 60-75 patients in a month who have CD4 count <500 cells per milliliter of blood.

3.3 Study Population

All the total number of 305 new HIV sero - positive patients who were tested in the facilities within a period of two months before the study in the four facilities using rapid tests (unigold and Determine) in their first visit to the facilities were informed about the study. The tests were done by trained health service providers. Their Blood sample was taken for CD4 count in KEMRI. Those with CD4 cell count < 500cells who meet the

inclusion criteria were recruited to the study. The rationale for utilizing a CD4 count of <500 cells /ml as cut -off point is that highly active antiretroviral therapy is commenced when CD4 cell count is less than 350 at the time of the study, but World Health Organization clinical staging of HIV/AIDS in adults and adolescents indicates that a patient with a CD4 of 500 cells, but with a clinical staging of HIV infection stage 3 is eligible for ARV Therapy. The sample was from the four City Council Health facilities in Dagoretti and constituted both the experimental and the control groups. The control groups were from Woodley, Ngong Rd and Riruta health facilities and the experimental group was from Waithaka Health facility. The reason to have the two groups from different facilities was to ensure seclusion and confidentiality, because HIV patients are sensitive and may choose to avoid voluntary counseling and testing where they are known. The link between control and intervention groups with special emphasis on the two mental disorders was that both groups were suffering from depressive symptoms and but interventions done later were different. The control group had a standard treatment and the experimental group had a standard treatment plus Interpersonal therapy. Both groups were administered Beck depression inventory (BDI-II) and Beck suicidality scale in order to know those with symptoms after the CD4 count results were out and less than 500 cells /ml.

3.4 Sample Size

Since no studies in Kenya have reported the prevalence of the two mental disorders (i.e. Depression, and Suicidality) among the HIV positive patients aged 18 years and above with CD4 count $\leq$ 500, to test the efficacy of IPT, we used an assumed prevalence of 50% for each mental disorder. The minimum sample size was calculated on expected proportion of 50% in patients monitored without the intervention and 30% in patients monitored with the intervention at a level of significance of 5 % and 95 % level of confidence. This was an

experimental study that involved comparing two groups on effectiveness of IPT intervention on the two mental disorders; depression and suicidality. Using the means of a standard chi-square test; the following formula was used to determine the sample size:

$$n = \frac{\{Z_{1-\alpha/2}\sqrt{[2P(1-P)]} + Z_{1-\beta}\sqrt{[P_1(1-P_1) + P_2(1-P_2)]}\}^2}{(P_1 - P_2)^2}$$

(Casagrande *et al;* 1978) [76]

Where;

n= Minimum sample size required

α = Type I error / level of statistical significance (0.05)

β = Type II error (0.10)

$Z_{1-\alpha/2}$ = Standard normal deviate corresponding to α (1.96)

$Z_{1-\beta}$ = Standard normal deviate corresponding to β (1.28)

P_1 = Assumed proportion of each mental disorder after 6 months follow-up without intervention (*receiving standard treatment care*), (50%)

P_2 = Estimated proportion of each mental disorder after 6 months follow-up with intervention (20%)

(P_1 - P_2)= Desired effect size for each mental disorder

$$P = \frac{P_1 + P_2}{2}$$

Using the formula and working with 90% power, the minimum samples size achieved per arm was124. Allowing for 20% attrition, the sample size was adjusted upwards to 152   per arm. The total sample size required for both experimental and control arm was 305.

3.5 Sampling Method

All the new Patients attending the four health facilities were done pre and post counseling for Human Immunodeficiency Virus test. (Woodley, Ngong RD, Riruta and Waithaka) HIV Test was done by trained health service providers using rapid tests (unigold and determine). For those who turned sero-positive, blood sample was taken to KEMRI for CD4 count by a trained health service provider and results brought back to the facilities after 3 days. The same procedure was repeated until a desired sample of 305 was reached. Those with a CD4 count <500 cells per milliliter of blood and aged 18 to 55+ years who consented, were subjected to BDI- II and BSS and recruited to the study. The participants in Ngong RD, Woodley and Riruta health facilities were divided into control group of 153 and those in Waithaka were the experimental group of 152 subjects. This was done by the principal researcher who also referred those who needed immediate attention to Mbagathi hospital for further management through the CCC in charge. Those referred to Mbagathi hospital in the initial recruitment were excluded from the study and replaced. The first 152 patients with CD4 count <500 cells per milliliter blood but with no medical problems requiring referral were enrolled into the study by the principal researcher.

i) Step one: The two groups had a baseline CD4cell count test done. The respondents were explained and subjected to a social demographic profile, Becks depression inventory (BDI-II) and Becks suicidality scale (BSS). The researcher issued the questionnaires and requested the patients to voluntarily read and sign the Participant's statement if they were willing to participate in the study. The entire filled questionnaire was stored in box files for the data entry until all the data required for 305 participants was achieved. To complete the questionnaire, it took duration of about 45 minutes for each patient. By the end of each week, there were a total number of 10 patients, enough to form a group of ten members for the Intervention arm. The total number of the groups was fifteen with each group consisting

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10 respondents. By the end of 6 months 305 patients had been recruited and all the groups established. For the experimental group, each group was booked for group therapy sessions on different days depending on the time they were recruited in the study and their availability. When grouping the patients, age was a factor that was considered to avoid age barriers in interaction and those of youthful age were grouped together.

a)   Experimental group:

The groups were coded serial numbers starting from Group 01 to Group 15 to differentiate the time period of therapy. Group therapy was done twice a day but different groups done either in the morning or in the afternoon. The sessions took place on every 5[th]day of the week for 6 months (16 Sessions). Each session of therapy took one to two hours depending on the questions the patients would ask after psychoeducation, but this did not limit those patients who needed to consult the researcher. At the end of 3 months and 6 months interval in therapy, an assessment on CD4 cell count, Becks depression inventory and Suicidality questionnaires were done for comparison.CD4 count in City county health facilities is done free for every patient who tests HIV positive to guide in ARV s treatment. Therefore it was easier to retest after every three months for the participants.

Intervention Therapy

i) Setting and structuring of treatment

The researcher started by taking interpersonal inventory of the individual participants in the therapeutic groups because Interpersonal inventory catalogue of a patient is important since relationships begin with childhood attributes of the self. The therapist made an interpersonal formulation once convinced of diagnosis of depression by use of the inventory questionnaire results and then presented a constellation of somatic cognitive and emotional symptoms. The therapist listed the elicited signs and symptoms of depression, indicated and then weaved into a recapitulation of the patient's story. The therapist focused

on the interpersonal events relevant to the problem areas on which the proposed that group therapy was to follow on the steps of intervention commonly used; psycho-education focusing on:

a) ***Interpersonal processing where the client and therapist worked together by focusing on the client's emotions:***

Interpersonal processing focused on exploration of patient's resistance to treatment for them to discover, explore and resolve their conflicts, behavioral problems, doubts and anxieties. It was done by use of discussion, reflection, support, interpretation in an African context and encouragement as well as the therapist trying to disrupt the clients vicious cycle of self-defeating, interpersonal interactions and relevant issues having to do with current relationships.

b) ***Emphasis on the patient's current interpersonal experiences:***

The participants in the group therapy were helped to look at their problems, conflicts, communication difficulties, social relatedness and family dysfunction as well as accessing systematic resources within the individual for social support groups. If treatment was to be maintained, amid evaluation of Becks depression inventory, suicidality and CD4 count was done after every three months of intervention.

ii) Control group:

The control group received standard treatment care. The standard treatment care is the normal care given to HIV patients on their appointment visit without additional of IPT.

Both groups were tested for CD4 count and Beck's Depression inventory and suicidality after each phase of 3 months for comparative results. Periodic development evaluation of the findings for the two groups experimental and control was comparatively done at the end of every 3 months follow up . Data was stored into a computer for use in final analysis. After the final evaluation in the study, both groups were referred to a psychosocial support

group for follow up in case of need. The participants were followed once a month by the CBHW (within the community). They were also enrolled to attend monthly group therapy program consisting of a maximum of 10 people per group. This was done to counter check if there was a relapse.

3.6 Variables

3.6.1 Dependent Variable

Depression scores and suicidality scores (self- administered questionnaire analysis of findings was done after the patient had completed.

Impact variables

CD4 count

3.6.2 Independent Variables

The independent variables of age, sex, gender, male or female were formed from the Social demographic data and the intervention. A questionnaire developed by the researcher was used for purposes of data entry.

3.7 Inclusion Criteria

HIV sero- positive patients with a CD4 less than ≤500 cells per milliliter of blood aged 18-55+years old who had depression symptoms who were willing to give consent to participate in the study.

3.7.1 Exclusion Criteria

HIV sero- positive patients who had no depression and did not fall within the age bracket of 18-55+ years and the CD4 count is >500 cells per milliliter of blood

Those who fell in the bracket but did not want to consent

Those who fell in the bracket but needed referral for immediate further management

3.8 Ethical Consideration

The study process began by obtaining clearance from the Department of Psychiatry, University of Nairobi. The researcher presented a proposal to Kenyatta National Hospital/University of Nairobi Ethics and Research Committee for approval and a copy of the approved proposal to the National Council for Science and Technology for authorization to carry a research in the Community. A Formal letter was written by the researcher with an attached copy of approved proposal from ethics committee to the Director, Human Resources and the Medical Officer of Health, City Council of Nairobi to seek approval to carry out research in the Health facilities.

3.8.1 Explanations about the Study for both Experimental and Control Study Groups

Informed consent was sought from the respondents with the right to participate and also withdraw from the study without any conditions attached.

The respondents had the following explained to them:

3.8.2 Confidentiality

The respondents were assured on their confidentiality, unless found to be life threatening to the patient or in a case where the patient may need further management. Where it required the management, the institution was informed for any arrangements like referrals (Ambulance),the respondents were informed that for their identity, the researcher was to use code numbers for data entry and only the principal researcher had a link to the admission number with the data code used for each respondent.

3.8.3 Personal and General Benefits

There were no direct benefits for both experimental and control groups in the study in terms of gifts, incentives or rewards however, if an individual was identified as having an urgent need for social support, he/she was referred to a social worker without any conditions.

3.8.4 Explanations to Experimental Group

The experimental group was informed about the importance of the study. He/she was enlightened on how the study was to help the researcher make the interpersonal formulation once convinced of diagnosis of depression recognizable and treatable. The respondents were informed that the interpersonal inventory catalog of important relationships begins with childhood attributes of the self. To extend the understanding of the sick role to those around the patient, the investigator explained them about the relatedness of depression symptoms and HIV sero-positive in interpersonal context. The patient may or may not have had previous experience in psychotherapy but he/she was informed of his/her role in IPT that included choosing topics but with emphasis on thoughts and feelings about interpersonal life events. They were informed on the need for psychotherapy, adherence and drug therapy combined. They were informed that if they felt an acute psychological problem which needed seeing the researcher, for example feelings of suicidal tendencies, they may contact the principle researcher through the telephone no **0727-173-254** at any time. The participants never made any contacts and when asked by the principle researcher, they responded that they felt a need to wait for group therapy sessions to ask their questions in order to share with others and also learn from others.

3.8.5 Explanations to Control Group

They were informed about the importance of the study. They were told that the scientific research evidenced data will assist the Health providers and policy makers in the management of depression and HIV sero - positive patients. They were informed that if

they felt they had a severe psychological problem that needed immediate attention they could contact the principle researcher through the above telephone at any time but none of them did

3.8.6 The Right to Withdraw

The respondents were informed of the right to withdraw from the study at any time but emphasized on the adherence to ARVs for both groups (control and experimental)

3.8.7 General Benefits

The respondents were explained and understood how the findings of this study will be made available for use by all institutions that work in areas of HIV so that other patients can benefit from the findings of the study.

3.9 Data Collection Instruments

The purpose of clinical intake was to identify individuals in the patient's population who had developed emotional symptoms resulting from chronic illness. An instrument to detect the symptoms was valuable because it provided structured work that was disciplined and consistent, and with a meaning to detect the patients who are at risk. Two types of instruments used were;

i) Structured interviews and Self report 'questionnaires

ii) Clinical laboratory tests, which detected a number of CD4 cells associated with HIV. These instruments were valid. That means they measured what the researcher was attempting to measure and they yielded reliable results by being consistent across raters and time.Laboratory tests were used most successfully in conjunction with self-reported instruments. The following instruments were used in the study:

- A social- demographic questionnaire prepared by the researcher

- Becks depression inventory(BDI)

- Becks suicidality scale (BSS)

These instruments were well understood by the researcher.

3.9.1 Social Demographic Questionnaire Profile

A questionnaire developed by the researcher included a serial number of each participant , age, sex, level of education, marital status , occupation, facility name , residential area, , social support measured by affiliation to any psycho social groups or family members .

3.9.2 Beck Depression Inventory (BDI-II)

The BDI is a 21item self-reporting questionnaire that assesses the severity of depression. This instrument is one of the most widely-used assessment measures in both research and clinical settings. The series of questions was developed in 1961, adopted in 1969 and copyrighted in1979, to reflect revision in the fourth edition text revision of the Diagnostic and statistical manual of mental disorders (DSM IV-TR).These series of questions were developed to measure the intensity, severity and depth of depression in patients with psychiatric diagnosis. Its long form is composed of 21 questions each designed to assess a specific symptom common among people with depression. The 21-question is a multiple choice with four responses and each response is assigned a score ranging 0-3 indicating the severity of the symptom. The scores range for BDI-II are graded as 0-13 minimal, 14-19 mild,38 moderate 63 severe. Individual questions of the BDI assess mood, pessimism, and sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, body image, work difficulties, insomnia, loss of interest, fatigue, appetite, weight loss, bodily preoccupation and loss of libido.

3.9.3 Reliability BDI-II

This test has been used for many years to identify and assess depressive symptoms and has been reported to be highly reliable regardless of the population. It has a high coefficient alpha, (0.80).Its construct validity has been established and it is able to differentiate depressed from non-depressed patients. For BDI-II the coefficient alphas (0.92) for out-patients and (0.93) for the college students were high

3.9.4 Beck Suicidality Scale

The BSS is a 20 item self-report Questionnaire that is used to identify the presence and severity of suicide ideations. Items on this measure also assess the respondent's suicidal plans, deterrents to suicide and the level of openness to revealing suicidal thoughts. This scale can be completed in 5to 10 minutes. Two of the questions on the scale are designed to function as an internal screening component. This component saves time and reduces the intrusiveness of the questionnaire for patients who are non-suicidal. The total score for the 20 items is calculated as; Minimum score 0, maximum score 38 and higher scores indicate greater Suicidal ideation.

3.9.5 Reliability BSS

The average reliability Co-efficient 90 (inpatients).87(outpatients and a test retest reliability: 54.

3.10 Study Limitations

The study was assessing depression and suicidality on HIV sero- positive patients who had undergone a CD4 count test. These patients were given group Interpersonal therapy care. IPT was additional therapy to antiretroviral therapy. Due to the magnitude of HIV reporting modes, the findings were not generalized beyond the study settings of the four city council clinics because there were other factors at play (like disclosure to others or work place)and HIV patients are sensitive and need a lot of assured confidentiality. Respondents were

assumed to be in different age groups and gender. The researcher was forced to group those who are in the youthful age together as opposed to being grouped based on their CD4 count and viral load ratio in the course of the study because age is a barrier to free discussions in sex matters as is a taboo for Africans and this would cause delay in starting therapy

3.11 Data Analysis and Management

Data collected was double entered by two data clerks for comparison to ensure quality control and then stored in a computer for analysis. It was analyzed using IBM-SPSS version 20 .0 in expressions of Descriptive frequencies, percentages, tables and charts. All descriptive and differential analysis was done in both the experimental and the control group. This involved grouping the questionnaire into four categories namely: Social demographic profile, Becks depression inventory sores from above 9-63scores , Becks suicidality and levels of CD4 Count <500 Cells. This was very useful in explaining variable, distributions, observing trends and making data meaningful. Descriptive and inferential analysis was done on the Social demographic profiles for each group (control and experimental), then psychological profiles of all HIV patients with CD4$\leq$500 cell count for prevalence of psychological disorders in the three phases of the study for both groups.

Those respondents who developed serious problems needing referral for further treatment during the study were recorded and analysis was done separately for comparison with those who did not receive intervention treatment. Out of 305 participants enrolled into the study at baseline 4 died and therefore were lost to follow up by the end of the study (n=301)

A Comparison on the effectiveness for the two groups who were followed for the 6 months was done. The level of psychopathology in both groups was done through a re-test of Depression, and suicidality at the end of IPT to determine the depression levels after

completing the 12 sessions of IPT. The retest of CD4 count was also done every three months to guide in treatment on ARVs as well as Group therapy

It revealed that the symptoms of depression had cleared and an increase in CD4 was noted. The clinical improvement after IPT was 6 months as depression symptoms went down and the patient gained full insight of the problems that hindered him/her from adherence.

4.0 CHAPTER FOUR: RESULTS

4.1 Background Characteristics of the Study Participants at Baseline

A total of 305 participants were enrolled in two groups of study i.e. Control (n=153) and Experimental (n=152). Two assessments were done, one at baseline and the other on final. Baseline assessment was done on selected social demographic characteristics of age range, gender, education, occupation as well as four measures of psychosocial events of psychoeducation, participant's individual changes in interaction, and emotions towards group activities. The measures of psychosocial events included Beck score, Cognitive affective score, Somatic performance score, and Beck Suicidality. After 6 months of intervention for participants enrolled in the experimental group and treatment as usual for the Control group, a final assessment was done after 6 months of intervention on the measures of psychosocial events in order to establish any changes between and within the two study groups. Due to financial constraints measures of adherence were not reported though data was keyed and analyzed in the data management.

4.1 Distribution of social demographic characteristics of the participants by study groups at baseline.

The study found that there was no significant difference in distribution of the social demographic characteristics of the participants between the study groups (P>0.05).

See table 4.1 below

Table 4.1: Social demographic characteristics of the participants by study group at baseline

Characteristics	Total (n=305)		Control (n=153)		Experimental (n=152)		χ^2 value	df	p value
	N	%	N	%	n	%			
Gender							2.60	1	0.107
Male	87	28.5	50	32.7	37	24.3			
Female	218	71.5	103	67.3	115	75.7			
Age range							0.40	3	0.940
18-30	93	30.5	48	31.4	45	29.6			
31-40	131	43.0	63	41.2	68	44.7			
41-50	62	20.3	32	20.9	30	19.7			
51-66	19	6.2	10	6.5	9	5.9			
Marital Status							5.51	5	0.357
Married	175	57.4	95	62.1	80	52.6			
Single	75	24.6	31	20.3	44	28.9			
Widow	13	4.3	6	3.9	7	4.6			
Widower	12	3.9	8	5.2	4	2.6			
Separated	19	6.2	8	5.2	11	7.2			
Divorced	11	3.6	5	3.3	6	3.9			
Level of Education							5.15	2	0.076
Primary	164	53.8	84	54.9	80	52.6			
Secondary	120	39.3	54	35.3	66	43.4			
College	21	6.9	15	9.8	6	3.9			
Occupation							2.79	3	0.425
Unemployed	90	29.5	45	29.4	45	29.6			
Employed	44	14.4	26	17.0	18	11.8			
Self Employed/Business	123	40.3	62	40.5	61	40.1			
Casual jobs	48	15.7	20	13.1	28	18.4			

4.2 Participants HIV status and social support of the participants by study

There was a significant difference in the distribution of duration of knowledge of one's HIV status (p<0.001), whom the respondent talks freely with about HIV status (p=0.017), duration being on ARVs (p<0.001), and being a member of a psychosocial support group (p<0.001).see Table 4.2.Below

Table 4.2: Participants HIV status and social support of the participants by study group at baseline

Characteristics	Total (n=305) N	Total (n=305) %	Control (n=153) N	Control (n=153) %	Experimental (n=152) n	Experimental (n=152) %	χ^2 value	df	p value
Duration of knowledge of one's HIV status							39.63	3	**<0.001**
Less than 1 year	52	17.0	45	29.4	7	4.6			
1-2 years	91	29.8	45	29.4	46	30.3			
3-5 years	88	28.9	28	18.3	60	39.5			
6-10 years	74	24.3	35	22.9	39	25.7			
Whom the respondent talk's freely with about HIV status							10.13	3	**0.017**
Family/relatives	216	70.8	98	64.1	118	77.6			
Friends	22	7.2	10	6.5	12	7.9			
Doctor/counselor	13	4.3	8	5.2	5	3.3			
Nobody/kept quite	54	17.7	37	24.2	17	11.2			
Duration being on ARVs							42.62	3	**<0.001**
Not yet started	13	4.3	13	8.5	0	0.0			
Less than 2 years	126	41.3	81	52.9	45	29.6			
2 - 5 years	130	42.6	40	26.1	90	59.2			
6-10 years	36	11.8	19	12.4	17	11.2			
Have missed ARVs in the Last three months (Levels of Adherence to ARVs)							1.11	1	0.292
Non Adherent to ARV	219	71.8%	114	74.5%	105	69.1%			
Adherent to ARV	86	28.2%	39	25.5%	47	30.9%			
A member of psychosocial support group							35.48	1	**<0.001**
Yes	89	29.2	21	13.7	68	44.7			
No	216	70.8	132	86.3	84	55.3			

4.3 Assessment of the psychosocial events among the participants at baseline

Presents mean, standard deviation and range of Beck, cognitive affective, and Beck somatic performance scores of the participants at baseline. Mean overall Beck score was 16.2 ($\pm$ 11.1 SD) ranging between 0 and 54 scores. There was no significant difference in mean *Beck* score between participants enrolled in control group (17.3 ($\pm$ 11.1 SD)) and those enrolled in experimental group (15.0 ($\pm$ 11.0 SD)), (p=0.071).

Mean overall cognitive affective score was 9.8 (± 7.5 SD) ranging between 0 and 34 scores. There was a significant difference in mean cognitive affective score between participants enrolled in control group (10.6 (± 7.4 SD)) and those enrolled in experimental group (8.9 (± 7.6 SD)), (p=0.043).

Mean overall somatic performance score was 6.4 (± 4.4 SD) ranging between 0 and 20 scores. There was no significant difference in mean somatic performance score between participants enrolled in control group (6.7 (± 4.6 SD)) and those enrolled in experimental group (6.1 (± 4.1 SD)), (p=0.262).see table 4.3 below

Table 4.3: Distribution of Beck, Cognitive affective, and Somatic performance scores of the participants by study groups at baseline

Characteristics	Group	n	Mean	SD	95% CI Lower	Upper	Min.	Max.
Beck score	Total	305	16.2	11.1	14.9	17.4	0	54
	Control	153	17.3	11.1	15.5	19.1	0	54
	Experimental	152	15.0	11.0	13.3	16.8	0	53
	p value		0.071					
Cognitive affective score	Total	305	9.8	7.5	8.9	10.6	0	34
	Control	153	10.6	7.4	9.5	11.8	0	34
	Experimental	152	8.9	7.6	7.7	10.1	0	33
	p value		**0.043**					
Somatic performance score	Total	305	6.4	4.4	5.9	6.9	0	20
	Control	153	6.7	4.6	6.0	7.4	0	20
	Experimental	152	6.1	4.1	5.5	6.8	0	20
	p value		0.262					

4.4 Distribution of Beck depression and Beck suicidality among participants by study groups at baseline.

There was a significant difference in the distribution of Beck depression between study groups (p=0.022). However, severe depression was comparable between control (13.7%) and

experimental (13.8%) groups. Moderate depression was higher in control (32.0%) compared to experimental (17.1%) groups. See table 4.4 below

Table 4.4: Distribution of Beck depression and Beck suicidality among participants by study groups at baseline

Characteristics	Total (n=305)		Control (n=153)		Experimental (n=152)		χ^2 value	Df	p value
	n	%	n	%	N	%			
Beck Depression score							9.65	3	**0.022**
9 Minimal depression	94	30.8	41	26.8	53	34.9			
10-18 Mild depression	94	30.8	42	27.5	52	34.2			
19-29 Moderate depression	75	24.6	49	32.0	26	17.1			
30-63 Severe depression	42	13.8	21	13.7	21	13.8			
Beck suicidality score							2.21	1	0.137
Yes	58	19.0	24	15.7	34	22.4			
No	247	81.0	129	84.3	118	77.6			

Figure 4.1 Distribution of Beck suicidality among the participants by study group at baseline.

Distribution of Beck suicidality among the participants by study group at baseline showed no significant difference (P=0.137).

Figure 4.1: Beck Suicidality among the participants by study group at baseline
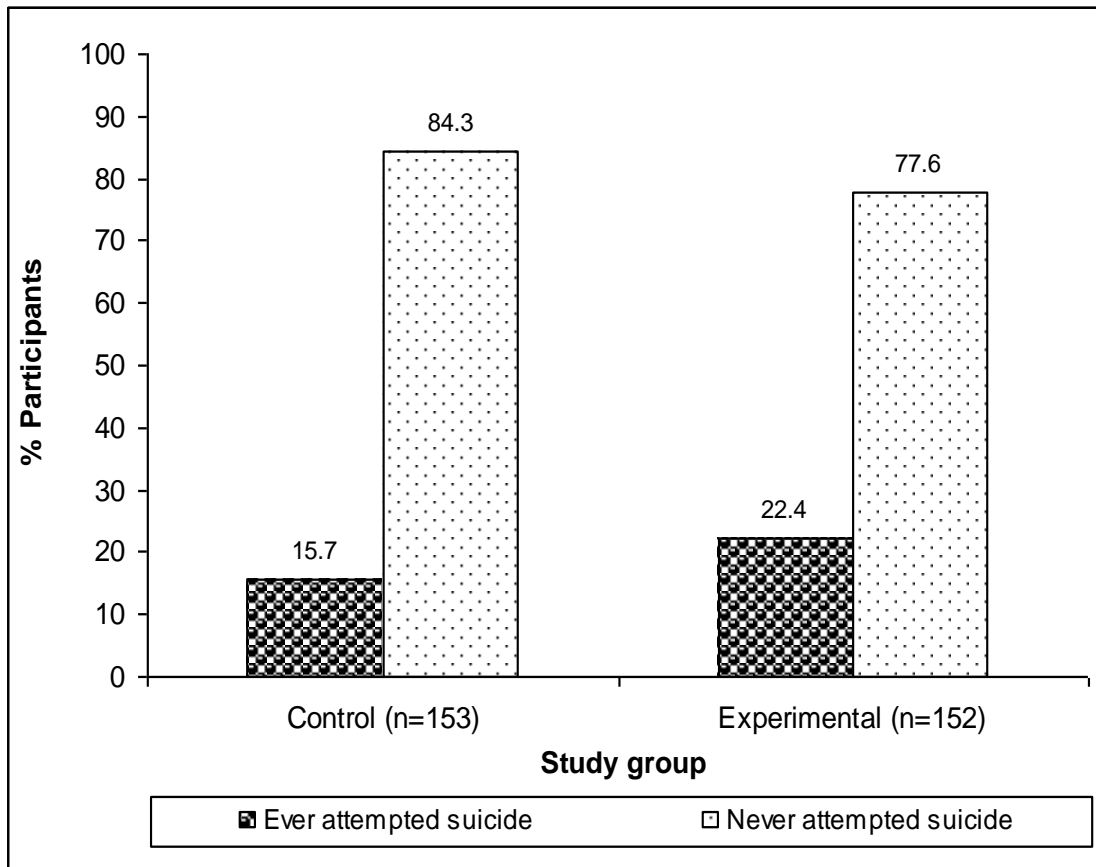
4.5 Assessment of the CD 4 count among the participants at baseline

Presents mean standard deviation and range of CD4 count of the participants at baseline. Out of 305 participants enrolled in the study at baseline 4 died and therefore were lost to follow up by the end of the study (n=301) Mean overall CD4 count was 182.0 ($\pm$ 107.9 SD) ranging between 0 and 54 cells/µL. There was significant difference in mean CD4 count between

participants enrolled in control group (199.9 ($\pm$ 109.9 SD)) and those enrolled in experimental group (164.5 ($\pm$ 103.2 SD)), (p=0.004). See Table 4.5 below

Table 4.5: Distribution of CD 4 count of the participants by study groups at baseline

Characteristics	Group	n	Mean	SD	95% CI Lower	Upper	Min.	Max.
CD4 count in cells/µL	Total	301	182.0	107.9	169.8	194.2	1	421
	Control	149	199.9	109.9	182.1	217.7	6	421
	Experimental	152	164.5	103.2	147.9	181.0	1	391
	p value		**0.004**					
	Non Adherent to ARV	215	183.3	109.6	168.6	198.1	1	421
	Adherent to ARV	86	178.6	104.1	156.3	201.0	13	398
	p value		0.733					

4.6 Beck Depression score in relation to background characteristics of the participants at baseline

Presents mean standard deviation and range of *Beck* score by different social demographic characteristics of the participants. None of the social demographic characteristics was significantly associated with *Beck* score. See Table 4.6 below

Table 4.6: *Beck* **score in relation to social demographic characteristics of the participants at baseline**

Characteristics	n	Mean	SD	95% CI Lower	Upper	Min.	Max.
Gender							
Male	87	16.0	12.0	13.5	18.6	0	53
Female	218	16.2	10.8	14.8	17.7	0	54
p value		0.876					
Age range							
18-30	93	16.6	10.1	14.5	18.7	0	41
31-40	131	16.6	11.6	14.6	18.6	0	53
41-50	62	14.8	11.8	11.8	17.8	0	54
51-66	19	15.6	10.8	10.4	20.9	0	37
p value		0.725					
Marital Status							
Married	175	16.4	11.0	14.7	18.0	0	49
Single	75	14.2	10.2	11.9	16.6	0	53
Widowed	25	19.1	13.5	13.5	24.7	2	54
Separated/Divorced	30	17.4	11.4	13.2	21.7	1	40
p value		0.215					
Level of Education							
Primary	164	17.5	11.3	15.8	19.2	0	54
Secondary	120	15.0	10.7	13.1	17.0	0	49
College	21	12.4	10.9	7.4	17.4	0	40
p value		0.060					
Occupation							
Unemployed	90	16.0	10.7	13.7	18.2	0	54
Employed	44	14.6	12.2	10.9	18.3	0	49
Self Employed/Business	123	16.5	11.3	14.5	18.6	0	53
Casual jobs	48	17.1	10.4	14.0	20.1	1	37
p value		0.727					

4.7 Analysis of Beck score in relation to management of depression in HIV and social support of the participants at baseline was done as presented in

There was a significant difference in mean Beck_score between participants at different duration of knowledge of one's HIV status (p=0.014). Participants who knew their HIV status less than 1 year ago by the time the interview was conducted had significantly high mean *Beck* scores (20.1 ($\pm$ 11.3 SD)), compared to those who knew their status $3 - 5$ year ago (14.6 ($\pm$ 11.8 SD); p<0.05), and $6 - 10$ years ago (14.4 ($\pm$ 10.4 SD); p<0.05).

There was a significant difference in mean *Beck* score between participants by whom they indicated would talk freely with, about their HIV status (p=0.028). Those who indicated that they prefer talking to a doctor or a counselor had significantly high mean *Beck* scores (20.8 ($\pm$ 12.0 SD)), compared to those who indicated friends (12.0 ($\pm$ 9.3 SD); p<0.05).

There was a significant difference in mean *Beck* score between participants by duration being on ARVs (p=0.007). Participants who had not yet started taking ARVs by the time of the interview had significantly high mean *Beck* scores (23.1 ($\pm$ 11.4 SD)), compared to those who have been on ARVs for $2 - 5$ year (14.8 ($\pm$ 11.2 SD); p<0.05), and $6 - 10$ years (13.3 ($\pm$ 10.0 SD); p<0.05).

Mean Beck score was significantly different between participants by membership of psychosocial support group (p=0.041). Those that were not in any membership had significantly high mean *Beck* scores (17.0 ($\pm$ 11.5 SD)), compared to those in a particular membership (14.2 ($\pm$ 9.9 SD); p=0.041) See Table 4.7 Below

Table 4.7: Beck score in relation to management of HIV and social support of the participants at baseline

Characteristics	n	Mean	SD	95% CI Lower	95% CI Upper	Min.	Max.
Duration of knowledge of one's HIV status							
Less than 1 year	52	20.1	11.3	16.9	23.2	0	54
1-2 years	91	16.9	10.4	14.8	19.1	0	40
3-5 years	88	14.6	11.8	12.0	17.1	0	53
6-10 years	74	14.4	10.4	12.0	16.8	0	41
p value		**0.014**					
Whom the respondent talks freely with about HIV status							
Family/relatives	216	15.7	10.7	14.2	17.1	0	54
Friends	22	12.0	9.3	7.8	16.1	0	33
Doctor/counselor	13	20.8	12.0	13.6	28.1	1	38
Nobody/kept quite	54	18.9	12.4	15.5	22.2	0	53
p value		**0.028**					
Duration being on ARVs							
Not yet started	13	23.1	11.4	16.2	30.0	3	49
Less than 2 years	126	17.7	10.9	15.8	19.7	0	54
2 - 5 years	130	14.8	11.2	12.8	16.7	0	53
6-10 years	36	13.3	10.0	9.9	16.7	0	37
p value		**0.007**					
A member of psychosocial support group							
Yes	89	14.2	9.9	12.1	16.2	0	41
No	216	17.0	11.5	15.5	18.6	0	54
p value		**0.041**					

4.8 Factors associated with *Beck* score among the participants at baseline

Presents factors associated with increase/ decrease in Beck score among the participants at baseline.

Decrease in Beck score was significantly associated with having a friend as a confidant to freely talk about HIV status (p=0.043). Increase *Beck* score was associated with knowing one's HIV status less than 1 year ago (p=0.017) and not getting started on ARVs (p=0.056). See Table 4.8 below

Table 4.8: Factors associated with Beck score among the participants at baseline

Variables	β	95% CI		p value
		Lower	Upper	
Full model				
(Constant)	17.21	13.43	21.00	<0.001
Level of Education: **SECONDARY**	-1.86	-4.52	0.79	0.168
Level of Education: **COLLEGE**	-5.18	-10.29	-0.07	0.047
Duration of knowledge of one's HIV status: **LESS THAN 1 YEAR**	3.24	-1.19	7.66	0.151
Duration of knowledge of one's HIV status: **1-2 YEARS**	1.25	-2.23	4.72	0.481
Duration of knowledge of one's HIV status: **6-10 YEARS**	0.30	-3.52	4.12	0.877
Whom the respondent talks freely with about HIV status: **FRIENDS**	-2.98	-7.85	1.89	0.229
Whom the respondent talks freely with about HIV status: **DOCTOR/COUNSELOR**	4.78	-1.37	10.93	0.127
Whom the respondent talks freely with about HIV status: **NOBODY/KEPT QUITE**	1.39	-2.01	4.79	0.421
Duration being on ARVs: **NOT YET STARTED**	5.10	-1.34	11.53	0.120
Duration being on ARVs: **2 - 5 YEARS**	-1.38	-4.48	1.73	0.383
Duration being on ARVs: **6-10 YEARS**	-3.06	-7.85	1.72	0.208
A member of psychosocial support group: **YES**	-1.52	-4.39	1.35	0.298
Reduced model				
(Constant)	15.59	14.19	16.98	<0.001
Duration of knowledge of one's HIV status: **LESS THAN 1 YEAR**[€]	4.05	0.72	7.39	0.017
Whom the respondent talks freely with about HIV status: **FRIENDS**[¥]	-4.92	-9.67	-0.16	0.043
Duration being on ARVs: **NOT YET STARTED**[π]	6.07	-0.16	12.29	0.056

[€] Reference category is **3-5 YEARS**

[¥] Reference category is **FAMILY/RELATIVES**

[π] Reference category is **LESS THAN 2 YEAR**

4.9 Cognitive affective score in relation to background characteristics of the participants at baseline

Presents mean standard deviation and range of cognitive affective score by different social demographic characteristics of the participants. None of the social demographic characteristics was significantly associated with cognitive affective score in the study

See Table 4.9 below

Table 4.9: Cognitive affective score in relation to social demographic characteristics of the participants at baseline

Characteristics	n	Mean	SD	95% CI Lower	Upper	Min.	Max.
Gender							
Male	87	9.8	8.1	8.1	11.6	0	33
Female	218	9.8	7.3	8.8	10.7	0	34
p value		0.937					
Age range							
18-30	93	10.3	7.1	8.8	11.8	0	30
31-40	131	10.1	7.8	8.7	11.4	0	33
41-50	62	8.4	7.6	6.5	10.3	0	34
51-66	19	9.4	7.3	5.8	12.9	0	22
p value		0.428					
Marital Status							
Married	175	10.1	7.4	9.0	11.2	0	30
Single	75	8.2	6.7	6.6	9.7	0	33
Widowed	25	11.0	9.2	7.2	14.7	0	34
Separated/Divorced	30	10.7	8.1	7.6	13.7	0	28
p value		0.182					
Level of Education							
Primary	164	10.5	7.6	9.3	11.7	0	34
Secondary	120	9.1	7.2	7.8	10.4	0	29
College	21	8.1	7.8	4.6	11.7	0	28
p value		0.180					
Occupation							
Unemployed	90	9.4	7.4	7.9	11.0	0	34
Employed	44	9.3	8.1	6.8	11.7	0	29
Self Employed/Business	123	10.0	7.5	8.6	11.3	0	33
Casual jobs	48	10.4	7.4	8.3	12.5	0	24
p value		0.845					

4.10 Cognitive affective scores, in relation to management of HIV and Social Support of the participants at baseline

There was a significant difference in mean cognitive affective score between participants at different duration of knowledge of one's HIV status (p=0.021). Participants who knew their HIV status less than 1 year ago by the time the interview was conducted had significantly

high mean cognitive affective scores (11.9 ($\pm$ 7.5 SD)), compared to those who knew their status 3 – 5 years ago (8.6 ($\pm$ 7.7 SD); p<0.05) and 6 – 10 years ago (8.5 ($\pm$ 7.0 SD); p<0.05).

There was a significant difference in mean cognitive affective score between participants by whom they indicated would talk freely with about HIV status (p=0.024). Those who indicated that they have nobody to talk freely with about their HIV status or prefer keeping quite had significantly high mean cognitive affective scores (11.6 ($\pm$ 8.2 SD)), compared to those who indicated friends (7.0 ($\pm$ 5.5 SD); p<0.050).

There was a significant difference in mean cognitive affective score between participants by duration being on ARVs (p=0.007). Participants who had not yet started taking ARVs by the time the interview was conducted had significantly high mean cognitive affective scores (13.2 ($\pm$ 7.6 SD)), compared to those who had been on ARVs for 6 – 10 years (7.8 ($\pm$ 6.6 SD); p<0.05). See Table 4.10 below

Table 4.10: Cognitive affective score in relation to management of HIV and social support of the participants at baseline

Characteristics	n	Mean	SD	95% CI Lower	95% CI Upper	Min.	Max.
Duration of knowledge of one's HIV status							
Less than 1 year	52	11.9	7.5	9.8	14.0	0	34
1-2 years	91	10.7	7.4	9.1	12.2	0	29
3-5 years	88	8.6	7.7	7.0	10.3	0	33
6-10 years	74	8.5	7.0	6.9	10.1	0	28
p value		**0.021**					
Whom the respondent talk's freely with about HIV status							
Family/relatives	216	9.4	7.3	8.4	10.4	0	34
Friends	22	7.0	5.5	4.6	9.4	0	17
Doctor/counselor	13	13.1	9.2	7.5	18.7	0	29
Nobody/kept quite	54	11.6	8.2	9.4	13.9	0	33
p value		**0.024**					
Duration being on ARVs							
Not yet started	13	13.2	7.6	8.6	17.7	0	29
Less than 2 years	126	11.1	7.6	9.8	12.5	0	34
2 - 5 years	130	8.7	7.4	7.4	10.0	0	33
6-10 years	36	7.8	6.6	5.6	10.0	0	25
p value		**0.007**					
A member of psychosocial support group							
Yes	89	8.5	6.8	7.0	9.9	0	30
No	216	10.3	7.7	9.3	11.3	0	34
p value		0.052					

4.11 Factors associated with cognitive affective score among the participants at baseline

Presents factors associated with increase/ decrease in cognitive affective score among the participants at baseline.

Decrease in cognitive affective score was significantly associated with duration being on ARVs 2 – 5 years (p=0.014) and 6 – 10 years (p=0.009). Increase in cognitive affective score was associated with confiding about ones HIV status to the doctor or counselor (p=0.059) and not confiding to anybody or keeping quite (p=0.073).See Table 4.11 below

Table 4.11: Factors associated with cognitive affective score among the participants at baseline

Variables	β	95% CI		p value
		Lower	Upper	
Full model				
(Constant)	10.61	8.03	13.18	<0.001
Level of Education: **SECONDARY**	-0.92	-2.73	0.89	0.318
Level of Education: **COLLEGE**	-2.32	-5.79	1.16	0.191
Duration of knowledge of one's HIV status: **LESS THAN 1 YEAR**	1.46	-1.55	4.47	0.341
Duration of knowledge of one's HIV status: **1-2 YEARS**	1.03	-1.34	3.39	0.393
Duration of knowledge of one's HIV status: **6-10 YEARS**	0.10	-2.50	2.70	0.941
Whom the respondent talks freely with about HIV status: **FRIENDS**	-1.99	-5.30	1.33	0.239
Whom the respondent talks freely with about HIV status: **DOCTOR/COUNSELOR**	3.40	-0.79	7.58	0.111
Whom the respondent talks freely with about HIV status: **NOBODY/KEPT QUITE**	1.19	-1.13	3.50	0.314
Duration being on ARVs: **NOT YET STARTED**	2.07	-2.31	6.45	0.352
Duration being on ARVs: **2 - 5 YEARS**	-1.47	-3.58	0.64	0.170
Duration being on ARVs: **6-10 YEARS**	-2.42	-5.67	0.84	0.145
A member of psychosocial support group: **YES**	-0.95	-2.91	1.00	0.338
Reduced model				
(Constant)	10.63	9.27	11.99	<0.001
Whom the respondent talks freely with about HIV status: **DOCTOR/COUNSELOR**[¥]	3.98	-0.16	8.11	0.059
Whom the respondent talks freely with about HIV status: **NOBODY/KEPT QUITE**[¥]	2.04	-0.19	4.26	0.073
Duration being on ARVs: **2 - 5 YEARS**[π]	-2.25	-4.05	-0.45	0.014
Duration being on ARVs: **6-10 YEARS**[π]	-3.64	-6.35	-0.93	0.009

[¥] Reference category is **FAMILY/RELATIVES**
[π] Reference category is **LESS THAN 2 YEARS**

4.12 Somatic performance score in relation to background characteristics of the participants at baseline

Presents mean standard deviation and range of somatic performance score by different social demographic characteristics of the participants. Out of five social demographic characteristics level of education was significantly associated with somatic performance score.

There was a significant difference in mean somatic performance score between participants with different level of education (p=0.007). Participants who attained primary as their highest level of education had significantly high mean somatic performance score (7.0 ($\pm$ 4.5 SD)), compared to those who attained college level (4.2 ($\pm$ 3.3 SD); p<0.05). See Table 4.12 below

Table 4.12: Somatic performance score in relation to social demographic characteristics of the participants at baseline

Characteristics	N	Mean	SD	95% CI Lower	Upper	Min.	Max.
Gender							
Male	87	6.2	4.6	5.2	7.2	0	20
Female	218	6.5	4.3	5.9	7.1	0	20
p value		0.594					
Age range							
18-30	93	6.3	3.7	5.5	7.0	0	16
31-40	131	6.5	4.5	5.8	7.3	0	20
41-50	62	6.4	4.9	5.1	7.6	0	20
51-66	19	6.3	4.5	4.1	8.4	0	16
p value		0.973					
Marital Status							
Married	175	6.2	4.3	5.6	6.9	0	20
Single	75	6.1	4.2	5.1	7.0	0	20
Widowed	25	8.2	5.2	6.0	10.3	1	20
Separated/Divorced	30	6.8	3.9	5.3	8.2	1	16
p value		0.176					
Level of Education							
Primary	164	7.0	4.5	6.3	7.7	0	20
Secondary	120	5.9	4.2	5.2	6.7	0	20
College	21	4.2	3.3	2.7	5.7	0	12
p value		**0.007**					
Occupation							
Unemployed	90	6.6	3.9	5.7	7.4	0	20
Employed	44	5.4	4.7	3.9	6.8	0	20
Self Employed/Business	123	6.6	4.8	5.7	7.4	0	20
Casual jobs	48	6.7	3.6	5.6	7.7	1	15
p value		0.400					

4.13 Analysis of somatic performance score in relation to management of HIV and social support of the participants at baseline was done as presented in

There was a significant difference in mean somatic performance score between participants at different duration of knowledge of one's HIV status (p=0.013). Participants who knew their HIV status less than 1 year ago by the time the interview was conducted had significantly high mean somatic performance scores (8.2 ($\pm$ 5.1 SD)), compared to those who knew their

status 1 – 2 years (6.3 ($\pm$ 3.7 SD); p<0.05) 3 – 5 years ago (5.9 ($\pm$ 4.6 SD); p<0.05) and 6 – 10 years ago (5.9 ($\pm$ 4.0 SD); p<0.05).

There was a significant difference in mean somatic performance score between participants by duration being on ARVs (p=0.011). Participants who had not yet started taking ARVs by the time the interview was conducted had significantly high mean somatic performance scores (9.9 ($\pm$ 5.2 SD)), compared to those who had been on ARVs for less than 2 years (6.6 ($\pm$ 4.1 SD); p<0.05), 2 – 5 years (6.1 ($\pm$ 4.5 SD); p<0.05), and 6 – 10 years (5.5 ($\pm$ 4.1 SD); p<0.05). See Table 4.13 below.

Table 4.13: Somatic performance score in relation to management of HIV and social support of the participants at baseline

Characteristics	n	Mean	SD	95% CI Lower	Upper	Min.	Max.
Duration of knowledge of one's HIV status							
Less than 1 year	52	8.2	5.1	6.8	9.6	0	20
1-2 years	91	6.3	3.7	5.5	7.0	0	16
3-5 years	88	5.9	4.6	4.9	6.9	0	20
6-10 years	74	5.9	4.0	5.0	6.9	0	16
p value		**0.013**					
Whom the respondent talks freely with about HIV status							
Family/relatives	216	6.3	4.2	5.7	6.8	0	20
Friends	22	5.0	4.1	3.1	6.8	0	16
Doctor/counselor	13	7.8	3.6	5.6	9.9	1	15
Nobody/kept quite	54	7.2	5.1	5.8	8.6	0	20
p value		**0.121**					
Duration being on ARVs							
Not yet started	13	9.9	5.2	6.8	13.0	2	20
Less than 2 years	126	6.6	4.1	5.9	7.3	0	20
2 - 5 years	130	6.1	4.5	5.3	6.9	0	20
6-10 years	36	5.5	4.1	4.1	6.9	0	16
p value		**0.011**					
A member of psychosocial support group							
Yes	89	5.7	3.8	4.9	6.5	0	17
No	216	6.7	4.6	6.1	7.3	0	20
p value		0.064					

4.14   Factors associated with somatic performance score among the participants at baseline

Presents factors associated with increase and decrease in somatic performance score among the participants at baseline.

Decrease in somatic performance score was significantly associated with secondary (p=0.041) and college (p=0.003) levels of education. Increase in somatic performance score was associated with knowledge of ones HIV status less that 1 year ago by the time of the interview. (p=0.007) not being started on ARVs by the time of interview (p=0.013).

See Table 4.14 below

Table 4.14: Factors associated with somatic performance score among the participants at baseline

Variables	β	95% CI Lower	Upper	p value
Full model				
(Constant)	6.61	5.13	8.08	<0.001
Level of Education: **SECONDARY**	-0.94	-1.98	0.09	0.074
Level of Education: **COLLEGE**	-2.86	-4.86	-0.87	0.005
Duration of knowledge of one's HIV status: **LESS THAN 1 YEAR**	1.78	0.05	3.50	0.044
Duration of knowledge of one's HIV status: **1-2 YEARS**	0.22	-1.14	1.58	0.751
Duration of knowledge of one's HIV status: **6-10 YEARS**	0.20	-1.29	1.69	0.789
Whom the respondent talks freely with about HIV status: **FRIENDS**	-0.99	-2.90	0.91	0.304
Whom the respondent talks freely with about HIV status: **DOCTOR/COUNSELOR**	1.38	-1.02	3.79	0.257
Whom the respondent talks freely with about HIV status: **NOBODY/KEPT QUITE**	0.20	-1.12	1.53	0.761
Duration being on ARVs: **NOT YET STARTED**	3.02	0.51	5.54	0.018
Duration being on ARVs: **2 - 5 YEARS**	0.10	-1.11	1.31	0.873
Duration being on ARVs: **6-10 YEARS**	-0.65	-2.52	1.22	0.494
A member of psychosocial support group: **YES**	-0.57	-1.69	0.55	0.319
Reduced model				
(Constant)	6.58	5.89	7.28	<0.001
Level of Education: **SECONDARY**[€]	-1.06	-2.07	-0.04	0.041
Level of Education: **COLLEGE**[€]	-2.95	-4.88	-1.03	0.003
Duration of knowledge of one's HIV status: **LESS THAN 1 YEAR**[¥]	1.81	0.50	3.13	0.007
Duration being on ARVs: **NOT YET STARTED** [π]	3.09	0.66	5.52	0.013

[€] Reference category is **PRIMARY**
[¥] Reference category is **3 – 5 YEARS**
[π] Reference category is **LESS THAN 2 YEAR**

4.15   Beck Suicidality in relation to background characteristics of the participants at

baseline

Table 4.15 presents Beck suicidality in relation to social demographic characteristics of the participants at baseline. None of the social demographic characteristics was significantly associated with Beck suicidality.

Table 4.15: Beck suicidality in relation to social demographic characteristics of the participants at baseline

Variables	Yes (n=58)		No (n=247)		OR	95% CI		p value
	N	%	n	%		Lower	Upper	
Gender								
Male	15	17.2	72	82.8	0.85	0.44	1.62	0.618
Female	43	19.7	175	80.3	1.00			
Age range								
18-30	19	20.4	74	79.6	2.18	0.46	10.28	0.324
31-40	26	19.8	105	80.2	2.10	0.46	9.69	0.339
41-50	11	17.7	51	82.3	1.83	0.37	9.11	0.459
51-66	2	10.5	17	89.5	1.00			
Marital Status								
Married	33	18.9	142	81.1	1.00			
Single	15	20.0	60	80.0	1.08	0.54	2.13	0.834
Widowed	3	12.0	22	88.0	0.59	0.17	2.08	0.409
Separated/Divorced	7	23.3	23	76.7	1.31	0.52	3.31	0.568
Level of Education								
Primary	32	19.5	132	80.5	2.30	0.51	10.40	0.278
Secondary	24	20.0	96	80.0	2.37	0.52	10.90	0.266
College	2	9.5	19	90.5	1.00			
Occupation								
Unemployed	15	16.7	75	83.3	1.00			
Employed	7	15.9	37	84.1	0.95	0.36	2.52	0.911
Self Employed/Business	22	17.9	101	82.1	1.09	0.53	2.24	0.817
Casual jobs	14	29.2	34	70.8	2.06	0.89	4.74	0.089

4.16 Analysis of Beck suicidality in relation to management of HIV and social support of the participants at baseline

None of the management of HIV or social support characteristics was significantly associated with Beck suicidality. .See table 4.16 below

Table 4.16: Beck suicidality in relation to management of HIV and social support of the participants at baseline

Variables	Yes (n=58)		No (n=247)			95% CI		p value
	n	%	n	%	OR	Lower	Upper	
Duration of knowledge of one's HIV status								
Less than 1 year	10	19.2	42	80.8	2.18	0.46	10.28	0.324
1-2 years	21	23.1	70	76.9	2.10	0.46	9.69	0.339
3-5 years	14	15.9	74	84.1	1.83	0.37	9.11	0.459
6-10 years	13	17.6	61	82.4	1.00			
Whom the respondent talks freely with about HIV status								
Family/relatives	45	20.8	171	79.2	1.51	0.67	3.43	0.322
Friends	1	4.5	21	95.5	0.27	0.03	2.33	0.236
Doctor/counselor	4	30.8	9	69.2	2.56	0.63	10.33	0.188
Nobody/kept quite	8	14.8	46	85.2	1.00			
Duration being on ARVs								
Not yet started	2	15.4	11	84.6	0.75	0.14	4.20	0.746
Less than 2 years	26	20.6	100	79.4	1.08	0.42	2.73	0.876
2 - 5 years	23	17.7	107	82.3	0.89	0.35	2.28	0.809
6-10 years	7	19.4	29	80.6	1.00			
A member of psychosocial support group								
Yes	17	19.1	72	80.9	1.01	0.54	1.89	0.981
No	41	19.0	175	81.0	1.00			

4.17   CD4 count in relation to depression and suicidal attempt

Presents analysis of Mean CD4 count in cells/µL by depression and suicidal attempt

There was no significant difference in mean CD4 by category of depression (p=0.156) and suicidal attempt (p=0.305).Also note that Out of 305 participants enrolled into the study at baseline 4 died and therefore were lost to follow up by the end of the study (n=301) See Table 4.17 below

Table 4.17: Mean CD4 count in cells/µL by depression and suicidal attempt

Characteristics	n	Mean	SD	95% CI Lower	95% CI Upper	Min.	Max.
Beck depression score at baseline							
9 Minimal depression	94	185.3	111.1	162.5	208.0	13	400
10-18 Mild depression	92	163.8	108.8	141.2	186.3	1	421
19-29 Moderate depression	73	185.8	107.4	160.8	210.9	2	373
30-63 Severe depression	42	207.9	95.7	178.1	237.7	17	411
p value		**0.156**					
Beck Suicidality score at baseline							
Yes	56	168.6	103.4	141.0	196.3	2	421
No	245	185.0	108.9	171.3	198.7	1	411
p value		**0.305**					
Total	301	182.0	107.9	169.8	194.2	1	421

Figure 4.2 Median CD4 count by different categories of depression.

The graph demonstrates no trend in pattern for median CD4 for various categories of depression.

Figure 4.2: Median CD4 count by different categories of depression
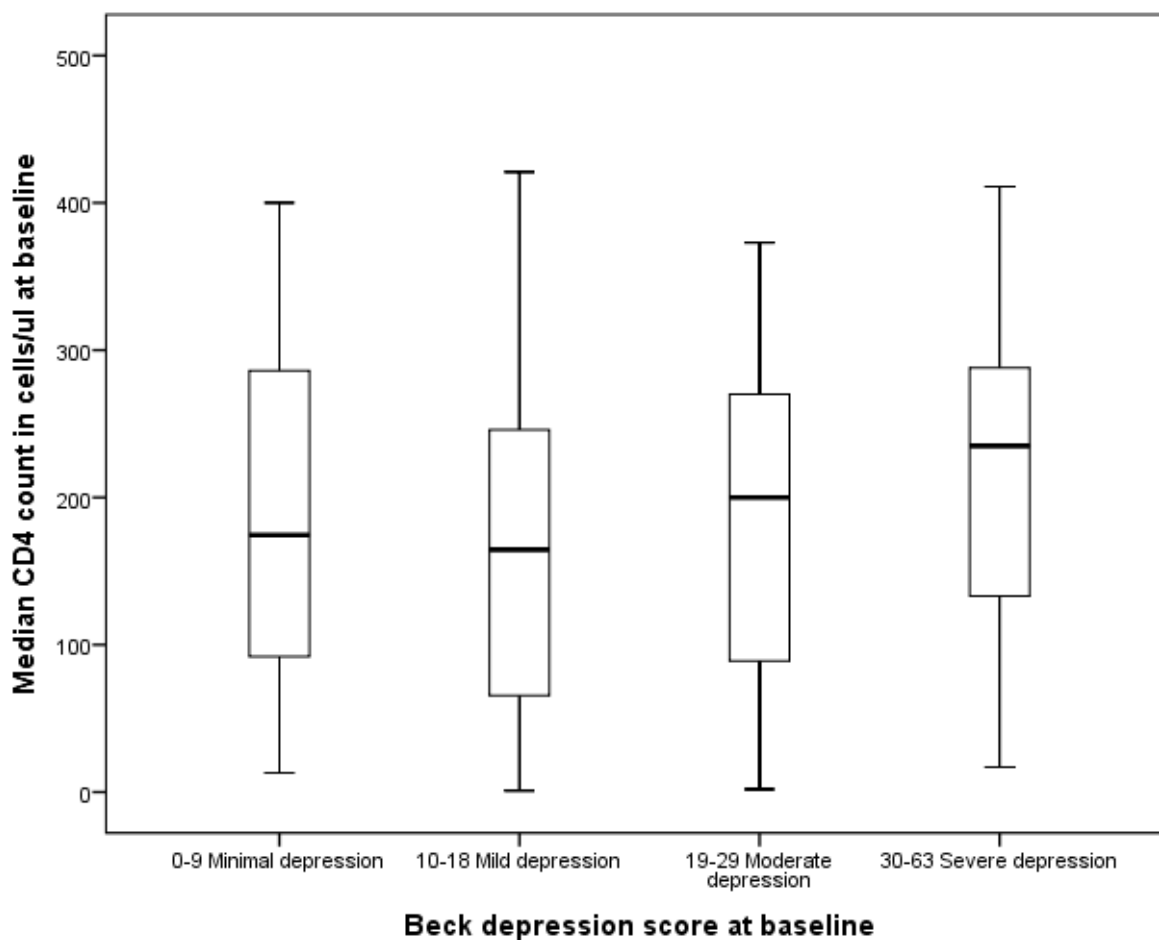
Figure 4.3 Median CD4 count by Becks suicidality.

There is minimal difference in median CD4 between patients with suicidal attempts compared to those without see fig 4.3 below

Figure 4.3: Median CD4 count by suicidal attempt
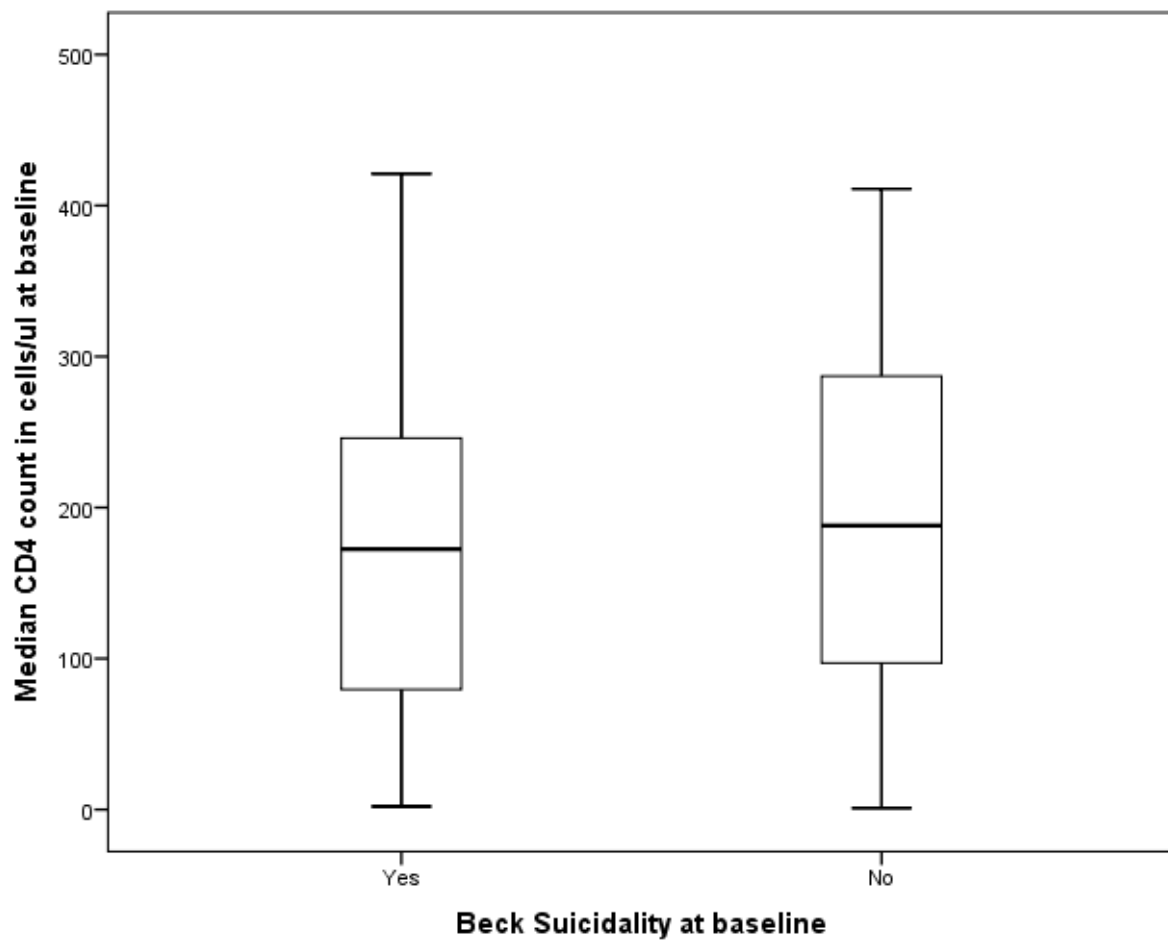
4.1.2 Efficacy of Interpersonal therapy on patient health outcomes

Evaluation on the effect of Interpersonal therapy on Beck, cognitive affective and somatic performance scores was done as presented in table 4.18 below

Mean *Beck* score between control and experimental groups revealed no significant difference at baseline 32.3% (17.3 vs. 15.0; p=0.071). After six months of follow-up with treatment as usual in control and intervention in experimental groups, mean *Beck* score was significantly high in control compared to experimental 29.6 % (24.2 vs. 5.4; p<0.001). Mean comparison within study group revealed interesting results. Considering that in the control group, there was a significant increase in mean Beck score between baseline and final assessment 41.5% (17.3 vs. 24.2; p<0.001). Contrary, in experimental group, there was a significant decrease in mean *Beck* score between baseline and final assessment 20.4% (15.0 vs. 5.4; p<0.001). see table 4.18 below

Table 4.18: Mean+SD on Beck, cognitive affective and somatic performance scores between and within groups at baseline and final assessment

Characteristics	Group	Baseline n	Baseline Mean+SD	Final n	Final Mean+SD	p value
Beck score	Total	305	16.2+11.1	301	14.8+12.1	
	Control	153	17.3+11.1	150	24.2+8.2	**<0.001**
	Experimental	152	15.0+11.0	151	5.4+7.1	**<0.001**
	p value		0.071		**<0.001**	
Cognitive affective score	Total	305	9.8+7.5	301	8.6+7.9	
	Control	153	10.6+7.4	150	14.6+5.8	**<0.001**
	Experimental	152	8.9+7.6	151	2.7+4.3	**<0.001**
	p value		**0.043**		**<0.001**	
Somatic performance score	Total	305	6.4+4.4	301	6.1+4.9	
	Control	153	6.7+4.6	150	9.6+3.4	**<0.001**
	Experimental	152	6.1+4.1	151	2.7+3.6	**<0.001**
	p value		0.262		**<0.001**	

4.4. Cumulative change and shift in Beck score after follow-up.

Mean cognitive affective score between control and experimental groups revealed marginal significant difference at baseline (10.6 vs. 8.9; p=0.043). After six month of follow-up with treatment as usual in control and intervention in experimental groups, mean cognitive affective score was significantly high in control compared to experimental (14.6 vs. 2.7; p<0.001). Mean comparison within study group revealed interesting results. Considering the control group, there was a significant increase in mean cognitive affective score between baseline and final assessment (10.6 vs. 14.6; p<0.001). Contrary, in experimental group, there was a significant decrease in mean cognitive affective score between baseline and final assessment (8.9 vs. 2.7; p<0.001). See figure 4.4 below

Figure 4.4: Cumulative distribution of participants by Beck score between study arms at baseline and final assessment
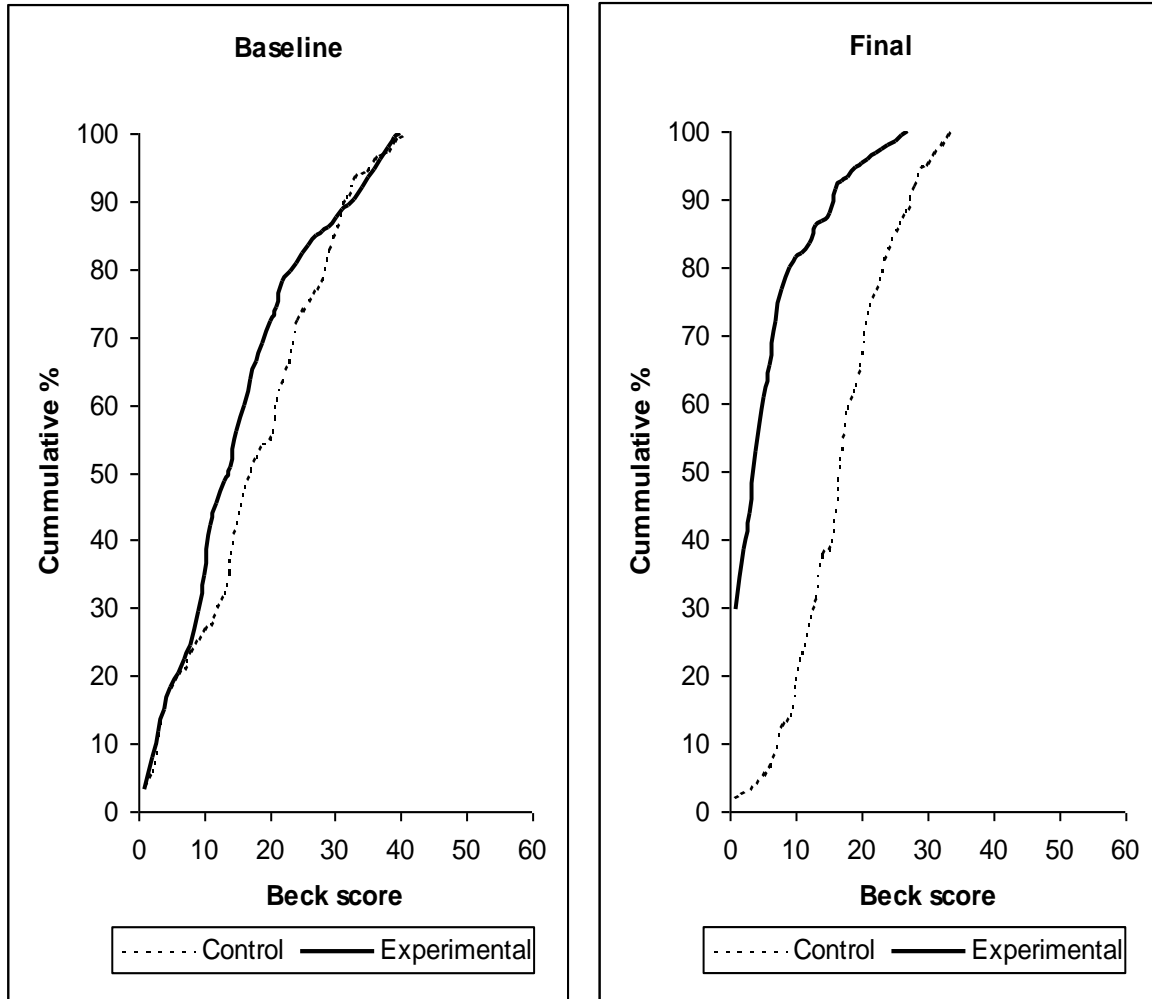
4.5 Cumulative changes and shift in cognitive affective score after follow-up.

There was no significant difference in mean somatic performance score between control and experimental groups at baseline (6.7 vs. 6.1; p=0.262). After six month of follow-up with treatment as usual in control and intervention in experimental groups, mean somatic performance score was significantly high in control compared to experimental (9.6 vs. 2.7; p<0.001). Mean comparison within study group revealed interesting results. Considering the control group, there was a significant increase in mean somatic performance score between baseline and final assessment (6.7 vs. 9.6; p<0.001). Contrary, in experimental group, there was a significant decrease in mean somatic performance score between baseline and final assessment (6.1 vs. 2.7; p<0.001). See figure 4.5 below

Figure 4.5: Cumulative distribution of participants by cognitive affective score between study arms at baseline and final assessment
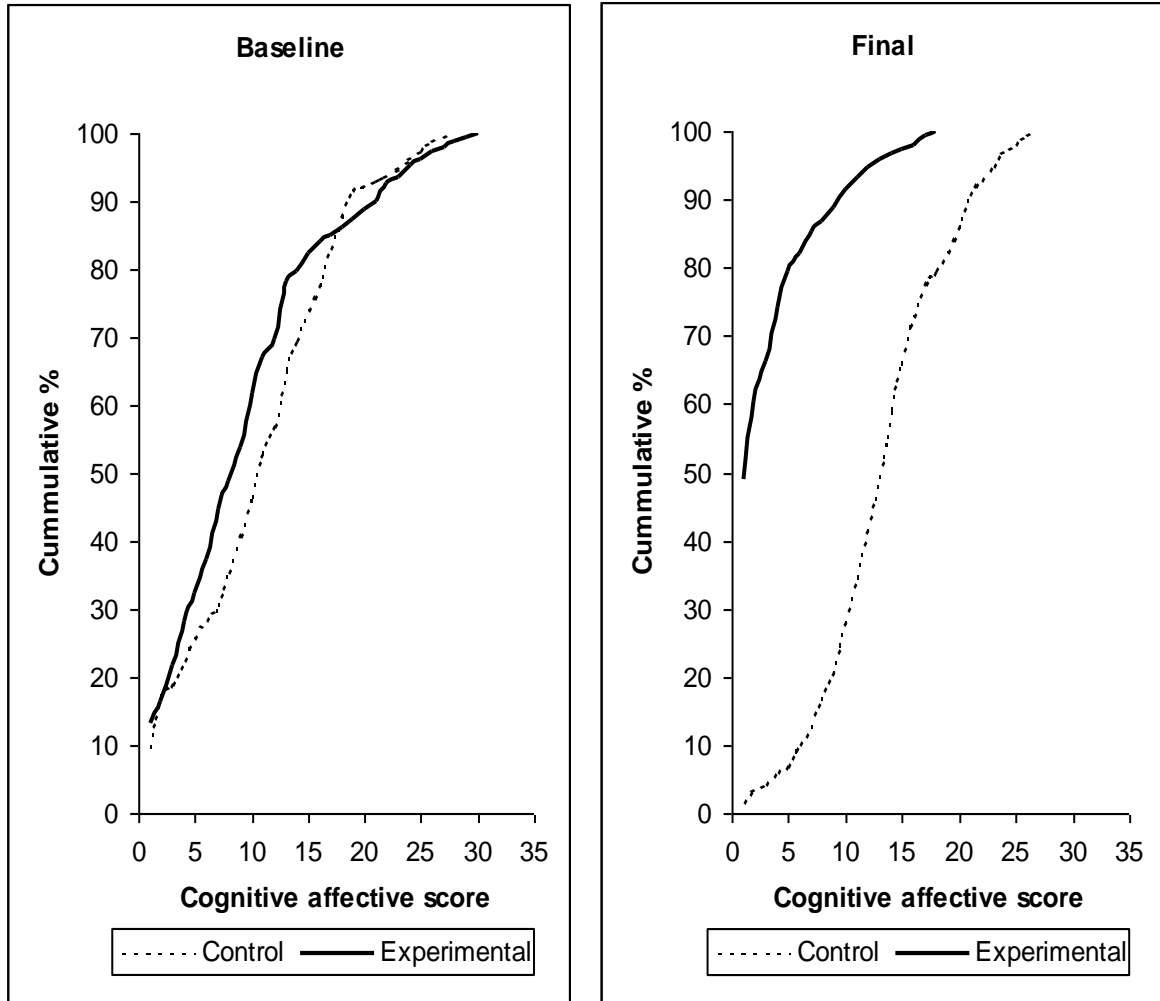
4.6 Cumulative distribution of participants by somatic performance scores between study arms at baseline and final

There was no significant difference in mean somatic performance score between control and experimental groups at baseline (6.7 vs. 6.1; p=0.262). After six month of follow-up with treatment as usual in control and intervention in experimental groups, mean somatic performance score was significantly high in control compared to experimental (9.6 vs. 2.7; p<0.001). Mean comparison within study group revealed interesting results. Considering the control group, there was a significant increase in mean somatic performance score between baseline and final assessment (6.7 vs. 9.6; p<0.001). Contrary, in experimental group, there was a significant decrease in mean somatic performance score between baseline and final assessment (6.1 vs. 2.7; p<0.001) see fig 4.6 below

Figure 4.6: Cumulative distribution of participants by *somatic performance* score between study arms at baseline and final assessment
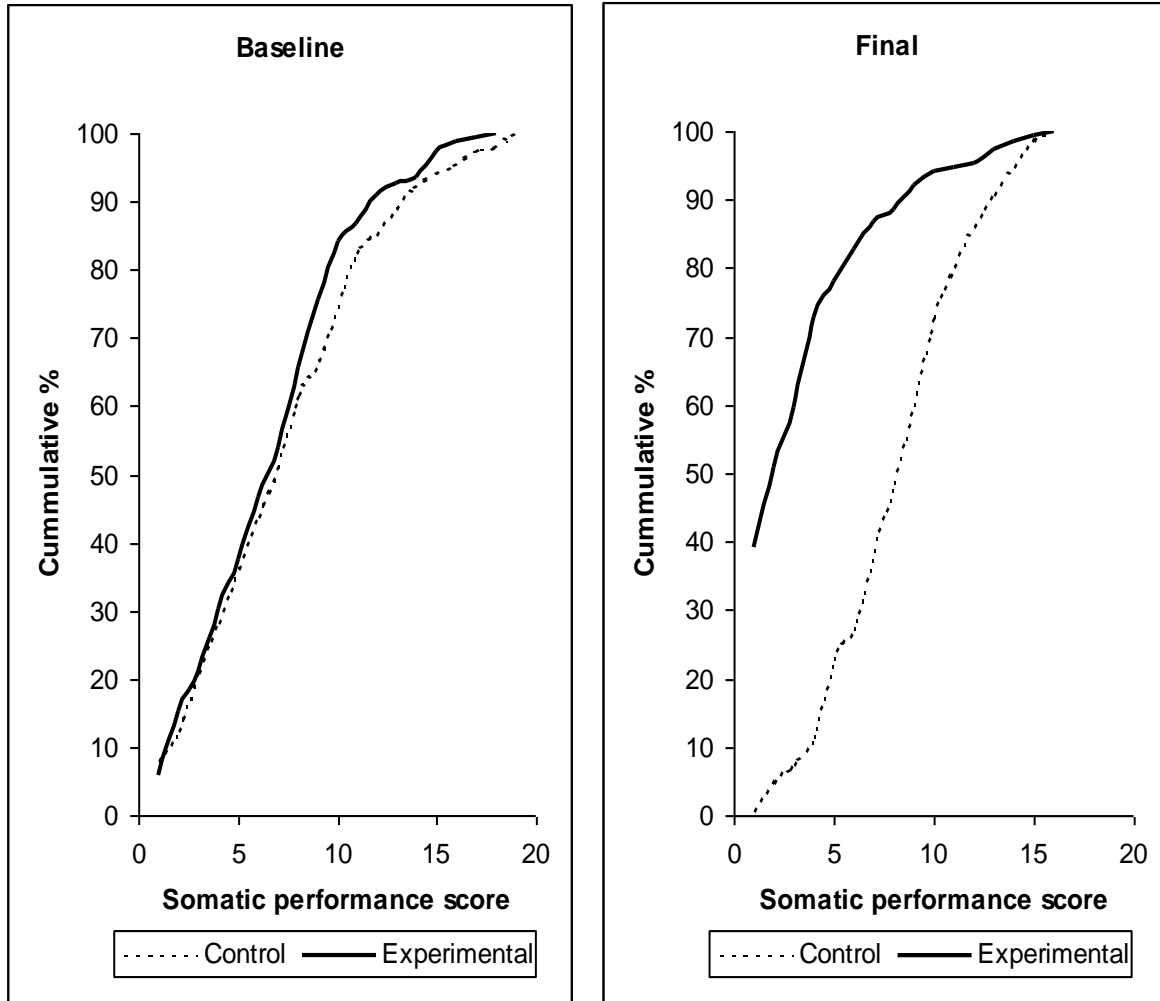
4.19: Beck Suicidality among participants between and within study group at baseline and final

Between groups comparisons revealed no significant findings at baseline. The proportion of participants with Beck Suicidality in the control group (15.7%) was not significantly different

from the one in the experimental group (22.4%), (p=0.137). However, after six month of follow-up with treatment as usual in control and intervention in experimental groups, the proportion of participants with Beck Suicidality in the control group (17.3%) was significantly high from the one in the experimental group (2.6%), (p<0.001). Within group comparisons demonstrated positive results. Within the control group, the proportion of participants with Beck Suicidality increased insignificantly from 15.7% at baseline to 17.3% (1.6% change) at final, (p=0.699). Within the experimental group, the proportion of participants with *Beck Suicidality* decreased significantly from 22.4% at baseline to 2.6% (19.8% change) at final, (p<0.001). This is an indication that Interpersonal therapy was realized to work from the 4th month towards the 6th month note that out of 305 participants recruited 4 died and were lost to follow up n=301. See table 4.19 below

Table 4.19: Proportion of participants with Beck suicidality between and within groups at baseline and final assessment

Characteristics	Group	Baseline			Final			p value
		N	Freq.	%	n	Freq.	%	
Beck Suicidality	Total	305	58	19.0	301	30	10.0	
	Control	153	24	15.7	150	26	17.3	0.699
	Experimental	152	34	22.4	151	4	2.6	**<0.001**
	p value			0.137			**<0.001**	

4.20: Mean ±SD on CD4 cell count between and within groups at baseline and final assessment.

Mean CD4 cell count between control and experimental groups was significantly different at baseline (199.9 vs. 164.5; p=0.004). After six month of follow-up with treatment as usual in control and intervention in experimental groups, mean CD4 cell count was significantly low in control compared to experimental (293.0 vs. 382.4; p=0.001). Mean comparison within study group revealed positive results. Considering the control group, there was a significant increase in mean CD4 cell count between baseline and final (199.9 vs. 293.0; p<0.001). Similarly, in experimental group there was a significant decrease in mean CD4cell count between baseline (164.5vs 382.4;p<0.001)) note that Out of 305 participants enrolled into the study at baseline 4 died and therefore were lost to follow up by the end of the study (n=301), See table 4.20 below.

Table 4.20: Mean+SD on CD4 cell count between and within groups at baseline and final assessment

Characteristics	Group	Baseline		Final		p value
		N	Mean+SD	n	Mean+SD	
CD4 count, cell/µL	Total	301	182.0+107.9	301	338.1+241.5	
	Control	149	199.9+109.9	149	293.0+263.2	<0.001
	Experimental	152	164.5+103.2	152	382.4+209.7	<0.001
	p value		0.004		0.001	

4.7: Cumulative distribution of participants by CD4 cell count between study arms at baseline and final assessment

There is a magnitude seen more   in experimental group (217.9) than control (93.1) group

There is significant difference in mean standard deviation and range CD4 between controls and experimental at baseline and final that demonstrates the cumulative change and shift in CD4 cell count. See figure 4.7 below.

Figure 4.7: Cumulative distribution of participants by CD4 cell count between study arms at baseline and final assessment
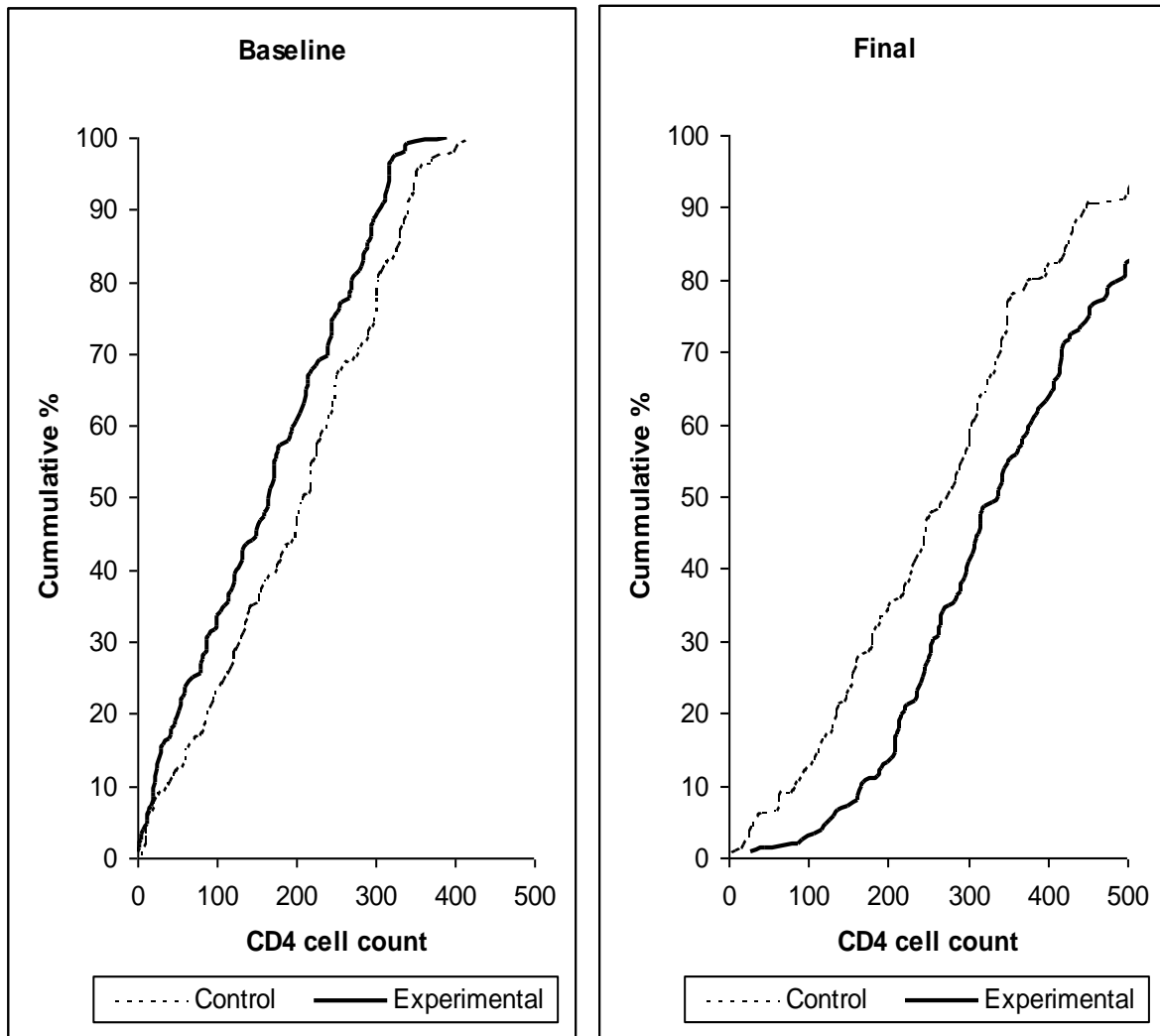
Table 4.21: Changes in CD4 cell count between baseline and final assessment in relation to categories of the BDI II at final assessment

Categories of the BDI II	n	Spearman's Rho correlation coefficient	p value
bdi8	298	-0.417	**<0.001**
bdi12	298	-0.356	**<0.001**
bdi15	298	-0.354	**<0.001**
bdi17	298	-0.316	**<0.001**
bdi16	298	-0.310	**<0.001**
bdi7	298	-0.306	**<0.001**
bdi13	298	-0.306	**<0.001**
bdi19a	298	-0.303	**<0.001**
bdi11	298	-0.296	**<0.001**
bdi3	298	-0.292	**<0.001**
bdi5	298	-0.275	**<0.001**
bdi21	298	-0.274	**<0.001**
bdi1	298	-0.273	**<0.001**
bdi4	298	-0.264	**<0.001**
bdi6	298	-0.261	**<0.001**
bdi20	298	-0.251	**<0.001**
bdi2	298	-0.244	**<0.001**
bdi18	298	-0.242	**<0.001**
bdi10	298	-0.236	**<0.001**
bdi14	298	-0.198	**0.001**
bdi9	298	-0.197	**0.001**

5.0 CHAPTER FIVE

5.1 DISCUSSION

5.1.1 Population studies

This study targeted HIV/AIDS infected participants who were screened using self- report questionnaires (BDI-II and BSS) and was found to have major depressive symptoms. These participants sought treatment in four city county health facilities in Dagoretti. The number of participants recruited was three hundred and five but four died before the end of final evaluation and were lost to follow up and was reported in the progress report. The study had a high return which can be attributed to the fact that the participants adhered to group therapy and the principal researcher had done sensitization before the data collection period to both the respondents and the in-charges of the facilities where the study was conducted. The high adherence to sessions in all the groups during therapy sessions could also be attributed to the IPT model questions which was clearly and simply understood and accepted by the participants in the cultural setup .The tools of data collection were very well understood by the researcher in the experimental site and this facilitated the data collection from both study groups. Data collection was scheduled during the normal working hours (8am-5pm) and weekdays when the facilities were open to health services.

The social demographic characteristics like age, sex, male, female or gender found in the study were representative of the general population in Dagoretti district. In this study there was a preponderance of females to males just as in the general population of Kenya where females account for 50.11% and males 49.89%.[77] although more females (71.5%) than males (28.5%) the difference was not statistically significant.

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5.1.2 The Findings in relation to study hypotheses

The primary focus in this study was to assess the effectiveness of IPT intervention on depression and suicidality. In keeping with our hypothesis, individuals assigned to the intervention compared to those assigned wait listing had a faster reduction in depression and suicidal symptoms as well as a faster increase in CD4 cell counting and with an increase in functioning levels that was assessed from the positive change in response and behavior observed during group therapy as well as the decreased symptoms in re-tests evaluation tools used in the study.

These differences were observable within 3 months of participation in the study and also increased as participation in intervention progressed. The control group was assessed after a month's wait listing. The study tested the hypothesis; i) Interpersonal therapy intervention is effective for depression in people living with HIV/AIDS

Null hypothesis, Interpersonal therapy intervention is not effective for depression in people living with HIV/AIDS. The study found People living with HIV /AIDS attending care in the four City council health facilities to have more of the known factors for depression than HIV patients in other city council clinics. In this study the researcher was able to demonstrate the validity of the hypotheses (its power and strength) where depression prevalence of 38.4% for both control and experimental groups at base line was found and changes noted after intervention. However, severe depression was comparable between control (13.7%) and experimental (13.8%) groups at baseline. Moderate depression was higher in control (32.0%) compared to experimental (17.1%) groups and suicidal attempt in both groups at

19.0%.Although this validity was noted at baseline, after 6 months of intervention the rate of reduction in depression symptoms was greater among the intervention participants than the control. This is attributed to the fact that during the group therapy there was a lot of free and positive interaction between the therapist and group members but guided by the IPT structured steps. The study also demonstrated that participant's inadequate or unsupportive interpersonal relationships, lack of inadequate problem solving skills and unresolved grief was associated with increased depression and suicidal ideation. Seeking social support by being a member of a support group was associated with less risk of depression. These findings suggest that the risk factors associated with depression in HIV/AIDS positive patients are similar to those found by Kinyanda in an African population study [78] therefore; HIV seems to be a vulnerability factor rather than a precipitant for depression.

5.1.3 Depression and HIV/AIDS patient care information

In people living with HIV/aids common mental disorders have been recognized throughout the world. The rate of depression obtained in this study was higher than studies done in US [79] that found that 23% had depression and nearly half the participants 48% had other probable mental disorders The rate of suicidality in this study was 19.0% for both control and experimental. This was higher than 7.8% of the study that was done in Entebbe Uganda [80] in similar settings and much higher than those reported elsewhere. For instance, the following rate were reported from the West countries, 27% in USA [81] 31% in UK [82] and 19% in New York, USA [83] Differences in the rates obtained in this study with those from the west could be attributed to two factors: the first being methodological differences in assessment of depression and suicidality in this study compared to the other studies undertaken in the west. The IPT therapy

used in this study was modified to an African cultural approach. Despite the different methodologies of assessing depression and suicide ideations in the west their rates in depression averaged 17% compared to the rate of 29% of depression and 38 % of suicidal attempts in the Kenyan study. The other possible explanation could be attributed to the study populations. The HIV positive patients in the west are mostly derived from homosexuals and drug users, sub populations that have different rates of other psychopathology.[84] The majority of the HIV positive persons in African setting like Kenya are mostly adjusted heterosexual people many of whom, are in long term relationships or were at one time in long term relationships.

5.1.4 Assessment of the psychosocial events among the participants

In this study the psychosocial factors among HIV people associated with depression presented the mean and standard deviation and rage in Beck, cognitive affective and somatic performance scores of the participants at baseline. There was significant difference in both control and experimental group. Given the degree of physical and emotional burden associated with depression, after matching for cognitive/affective performance symptoms scores in this study were higher than others with psychiatric problems.one explanation for the findings in this study may relate to the clear nature of symptoms assessment that could have influenced responses to self-report questionnaires. Respondents to self –questionnaires used the same inferred assumption that   guided everyday conversation, therefore making their input relevant and varied. The 7 BDI-II items with potential somatic overlap between depression and HIV/AIDS were found near the end of 21 item questionnaire (item 15-21) on self-dislike, sadness, guilt and suicidal ideation among other questions likely to be recognized by patients

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as related to HI/AIDS. The responses to the somatic items were observed implicitly as questions about depression rather than literally as questions about HIV physical health status by this study.

5.1.5 Correlation between Social demographic characteristics of the participants

In this study the social factors associated with depression and suicide attempts were, lack of social support from the family or work, increased number of social-economic pressure and relational problems. Although many participants had knowledge about HIV treatment with ARVS there was still an element of stigma that was evidenced during group therapy discussions. Some participants revealed to experience interpersonal difficulties sometimes eliciting rejection and negative moods. In others the illness appeared to harm even interactions with friends. The variable on those who were free to talk to doctors/counselors (7.6 %) was analyzed and this group indicated to have high Beck score. This could be due to the fact that they had   recently known their HIV status and were yet to be helped. Those who did not talk about their HIV status at base line were 17.7%.This could be indicated to the fact that the time the therapy started being effective, was the end line of therapy for this study. There is therefore a need for more study to investigate on the optimal time follow up intervention on this particular group.

5.1.6 Factors not associated with Beck score among the participants

The following social demographic factors were not associated with depression, age p= 0.725, gender p= 0.876 and marital status p=0.215 occupation p= 0.727 and level of education P=0.727. This indicates that these variables are not correlation factors in depression among people living with HIV in this study.

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5.1.7 Beck score and suicidality in relation to management of HIV and social support

The following factors were significantly associated with depression and suicide ; hopelessness, social support social of the participants, recent duration of knowledge of one's HIV status below one year, not belonging to any social support group. Having not been started on ARVs or any psychotherapy was another association. During group therapy there were other factors that participants repeatedly reported that were HIV clinical factors. These factors included memory problems, perception of physical health, physical pain and unexplained fevers with reduced activity due to the illness. Previous studies done elsewhere have also reported similar clinical factors associated with memory problems[85]and reduced activity is need for continued social support for the participants beyond the study settings. During the group therapy discussions most of the participants reported isolation by friends, some by family members and in their places of work, For instance those working as hair stylists and Barbers (saloonist) because of their infection and this made them not talk to friends or relatives about their illness even when they were down with opportunistic infections and they felt depressed. Similar studies done in USA reported 42% of HIV patients felt isolated and depressed because of their HIV infection[85] This is an indication that in spite of all the awareness on HIV disease treatment and prevention, stigma is still an issue that needs to be addressed.

5.1.8 Assessment of the CD4 count among participants

The findings in control and experimental group however, Correlating CD4 changes with BDI–II at final assessment, all in this study indicated significant difference in mean CD4 count between participants enrolled in control, the 21 items showed significant correlation.

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The study also indicated that Correlations of CD4 with adherence to group intervention sessions and ARVs had significance effect. Some studies in the west have reported a significant association between low CD4 cell count and depression, suicidality and adherence[86] In this study CD4 is an indication that CD4 T-Lymphocyte is the primary target for HIV infection because of the affinity of the virus for the CD4 surface marker. The CD4 lymphocytes coordinate a number of important immunological functions and a loss of these results in progressive impairment of the immune response. Therefore, measures of CD4 were used to guide clinical and therapeutic management of HIV infected persons. The CD4 count in control group increased gradually probably due to ARVs whereas the experimental group increased rapidly past the control probably because of combination of intervention and ARVs.

5.1.9 Efficacy of the Interpersonal therapy on patient's outcomes

The comprehensive interpersonal therapy module in the experimental group was modified to fit in an African interpretation of depression and suicide using the four basic interpersonal areas: unresolved grief, role transitions, interpersonal role dispute (often marital disputes) interpersonal deficits (deficiencies) the participants were subjected to a set of modified IPT model questions.

The group was Psycho-educated on identification of the above problems. A description of HIV and other emotional and psychological demands that were causing symptoms were discussed. This included the conditions under study, their precipitations and their predispositions talking about depression in the African cultural way of understanding depression and suicidality. Antiretroviral drug reactions and ARV adherence was also discussed. In spite of HIV awareness on treatment and prevention, stigma is still wide spread as evidenced during group

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therapy discussions where participants confessed to suffer interpersonal difficulties and sometimes eliciting rejection from employers, friends and significant others. The participants confessed reduced stigma and the fears they perceived about their conditions at the 4th month of intervention. There are several explanations for this improvement. The patients increased their perception of understanding their HIV disease as any other medical condition, therefore improving their perception to positive living (cognition) and adherence to ARVs as prescribed. First there was improved knowledge of the predisposing and precipitating causes of the conditions and their symptoms.

Secondly the resilience to cope with stressful events increased within the 5th month therefore, a change in positive thinking in the way to cope with their psychological stress. They gained a positive meaning that reduced fears of death, fears of loss of health and sexuality. This stimulated their need for change in nutrition patterns therefore improved immune system and improved CD4 counts were realized as noted in the shifts in fig 4.7.

Another important reason was that IPT is psycho-educative in nature to some degree and focused on exactly the feelings of what almost every participant was experiencing. There was a focused and structured group therapy, easy and near proximity to access to free interactions during session with the psychologist which was measured in verbal reporting of participants during sessions. The fourth reason was that the participants voluntarily adhered to ARVs all the time span of therapy due to the knowledge attained in psychoeducation during the intervention sessions as reported verbally by respondents during session. The fifth reason was that during the group therapy session's age was considered and the cohort participants were comfortable with one another as they shared their experiences. Given that IPT is a short technique (12-16

sessions) and flexible it was easier to put participants as per their ages which was an important factor in the African cultural sexuality interactions. In the 3rd month of intervention participants started active participation during the sessions with each addressing the group without offensive reaction with quotes that had been used by psychologist during the introductory of the first session where the therapist introduced the session as follows; "*as we have discussed, you are suffering from emotional and psychological demands that are stressful as a result to learning that you have tested HIV positive. This will be a long term treatment illness and not your fault*"

This would cause laughter, an indication of positive change.

Although this study identified positive effects of IPT on depression and suicidality among HIV/AIDS, large scale studies designed to measure the effectiveness of IPT psychosocial interventions in developing countries should be encouraged. Therefore the findings of this study agree with findings of other similar studies [84] that interpersonal therapy is effective on depression among people living with HIV /AIDS.

5.2 CONCLUSION

The following conclusions can be drawn from this study;

1). HIV/AIDS patients in the four health facilities of Dagorretti district, Kenya are associated with considerable burden of depression and suicidality (suicidal ideation and suicidal attempts).

2). While the prevalence of depression, suicidal ideations and suicide attempts in this study is similar to what has been reported in other studies in Uganda, Zimbambwe and in the west, it is much higher in patients attending the four City council clinics in Dagoretti District.

3). The risk factors for depression in people living with HIV/AIDS in Dagorretti are psychological, social and clinical that needs intervention beyond the city county clinical setting.

4) Although the study did not measure stigma levels, it was repeatedly mentioned by the participants in this study and this needs interventions beyond city county clinical setting

5) The objective of this study was achieved .The null hypothesis is rejected and the alternative hypothesis is accepted.

6) The researcher did not investigate past psychiatric and clinical factors beyond HIV of the participants due to the financial constrain involved in the study as a self-sponsored researcher.

5.3 RECOMMENDATIONS

1). Nairobi City County should adopt a policy of mental health orientation to all the Nurses working in primary health facilities and extend psychiatric services beyond the clinical facilities

2). Trained counselors in short psychological therapies for Psycho-social support applied in structured methods as a priority intervention for people living with HIV/AIDs

3). There is need for a large scale comparative study to be conducted in the surrounding social demographic Health facilities of Machakos, Kiambu, Kajiado counties because they are cosmopolitan cohorts .

6.0   BUDGET

		QUANTITY	KSH.
A.	**PROPOSAL PREPARATION**		
	1. Literature searches		10,000
	2. Typing and printing		4,000
	3. Photocopies (supervisors)		6,000
	4. KNH Ethical Committee fees		1,500
	5. 512MB Flash disk		3,500
			25,000
B.	**MATERIALS**		
	1. Paper	9 Rims @ 500shs	4,500
	2. Pencils	30	300
	3. Pens	10	200
	4. Files	100	4,500
	5. Stapler	1	600
	6. Staples	2 Packets	400
	7. Field laptop computer/accessories		80,000
	8. Cartridge	4@ 3,000shs	12,000
	9. Telephone/ Scratch cards	6@ 1,000shs	6,000
			108,500
C.	**QUESTIONNAIRES**		
	1. Typing and printing		6, 000
	2. Photocopying	12 x 5 x 200shs	12 000
	3. Internet	18months@1,500shs/month	15,000
			33,000
D.	**RESEARCH TEAM**		
	1. Daily allowance for Principal researcher (20days a month)	18 months x (20) x 2000shs	720,000
	2. Transport to and from the field (5 days a week)	18 months x (5x4) x100shs	36, 000
	3. Research assistants (5 days a week)	18 months x (5) x 1000shs	310, 000
			1,066,000
E.	**REPORT WRITING**		
	1. Biostatistician		200,000
	2. First draft report		30,000
	3. Final report		80,000
			310,000
F.	**UNIVERSITY FEE**		
	1. Registration fees		4,000
	2. Tuition fees per year	3 x 152,000shs	456,000
			460, 000
	Total		**1,645,500**
	Contingency 15%		**246,825**
	Grand Total		**1,892,325.00**

7.0 Flow Chart Illustrating Methodology

```
┌─────────────────────────────────────┐
│ All HIV seropositive patients with CD4│
│ ≤cells per milliliter of blood        │
└─────────────────────────────────────┘
         │
         │─────────────────────────────────────►┌──────────────────────────┐
         ▼                                       │ Those who did not meet   │
┌─────────────────────────────────┐              │ criteria                 │
│ Those who met inclusion criteria │              └──────────────────────────┘
└─────────────────────────────────┘                        │
         │                                                  ▼
         ▼                                       ┌──────────────────────────┐
┌──────────────────┐                             │ Not recruited            │
│ Recruited        │                             └──────────────────────────┘
└──────────────────┘
```

┌──────────────────────────────────┐   ┌──────────────────────────────────┐
│ **Experimental group-   IPT**   │   │ **Control group**   │
│ Social demographic profile   │   │ Social demographic profile   │
│ Beck's depression Inventory   │   │ Beck's depression Inventory   │
│ Becks suicidality   │   │ Becks suicidality   │
│ All intervention   │   │ Standard treatment care   │
└──────────────────────────────────┘   └──────────────────────────────────┘

┌──────────────────────────────────┐   ┌──────────────────────────────────┐
│ Psychosocial assessment II   │   │ Psychosocial assessment II   │
│ All interventions   │   │ Psych education only   │
│ CD4 repeat test   │   │ CD4 repeat test   │
└──────────────────────────────────┘   └──────────────────────────────────┘

4-6 weeks

6-12 weeks

┌──────────────────────────────────┐   ┌──────────────────────────────────┐
│ Psychosocial assessment   III   │   │ Psychosocial assessment III   │
│ Group comparison   │   │ CD4 repeat Test   │
│ CD4 repeat test   │   │   │
└──────────────────────────────────┘   └──────────────────────────────────┘

12-36 weeks

┌──┐
│ Group comparison on social demographic variables, CD4 count psychosocial   │
│ assessments I, II, to determine   changing patterns of the groups psychotherapy │
│ based on the type of intervention or no   interventions given   │
└──┘

Results

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APPENDICES

APPENDIX I: (a): CONSENT EXPLANATION (for experimental Group)

T**he efficacy of interpersonal therapy on depression among people   living with HIV/AIDS attending city council health facilities in Dagoretti district- Nairobi**

Serial No -

Dear participant,

My name is Immacolata Nyaga, a PHD student at the Department of Psychiatry, University of Nairobi.
I am carrying out a study on th**e** efficacy of interpersonal therapy psychosocial intervention among HIV sero-positive outpatients with low CD4 count and high viral load ratio attending city council of Nairobi health facilities in Dagoretti district. The study forms part of the requirement for the award of the Ph.D.   I am being supervised by:

1.   Professor David Ndetei (Tel 0722518365)
        Professor of Psychiatry,
        Department of Psychiatry, UON

2   Professor Anne Obondo (072184686)
        Senior Lecturer
        Department of Psychiatry, UON

3.   Professor Eugene Kinyanda
        Professor of Psychiatry, Makerere University

I am requesting you to participate in this study by completing a set of questionnaires that ask you about your social demographic data, another set that measures whether you suffer from depression and suicidality.

The instruments that you will complete are internationally tested and have been used in many studies in various parts of the world including Kenya. They have been accepted to assess whether you have any of the sort for mental disorders. I developed the social demographic questionnaire. Although this study has been approved by Kenyatta National Hospital research and ethical committee, your participation is completely voluntary.

I am therefore requesting you to kindly participate in this study. Confidentiality will be ensured by serializing the questionnaires by anonymous serial number. However, if you do decide to complete the questionnaire do so as truthfully as possible. It takes an average of 35 minutes to

complete once you have completed the questionnaire hand it over to the principle researcher or to the assistants. In case you are not willing to participate in the study you are kindly requested to hand over the instrument to the principle researcher or to the assistants. The researcher will interpret the instrument immediately after completion and those found to have symptoms will be put on group therapy.

I will be glad to offer you six therapeutic sessions of interpersonal therapy on depression and suicidality which will be done in form of psychoeducation and will not be examinable since this will be for the purpose of the study. These sessions will include general courses of the depression and suicidality and the interpersonal problem areas that stimulate stress coping strategies. The knowledge will go along not only to enlighten you about the above disorders and their relationship to HIV/AIDS but how to recognize them on self, friends and relatives and help them take appropriate action.

After 3 months the researcher will reassess you. This will give an idea of how well the taught skills through therapy are working for you. After another 3 months we will repeat the re-assessment in order to make conclusive findings on the efficacy of interpersonal therapy in symptom recognition or prevention reduction. The city council will receive a copy of the findings in a report and the recommendations which they could use to integrate and improve mental health and HIV issues in the health facilities.

For instance, to initiate mental health continuous medical education to Health service providers and Voluntary and testing HIV counselors on job training.

If you need any clarification you can get in touch through 0727173254 during the day

Thank you
Immacolata m Nyaga
PHD student
Department of Psychiatry, UON
Tel 0727173254

APPEDIX II: CONSENT EXPLANATION (For control group)

The efficacy of Interpersonal therapy on Depression among people living with HIV/AIDS attending City Council Health facilities in Dagoretti District Nairobi.

Serial No-----------

Dear participant,

My name is Immacolata Nyaga, a PHD student at the department of psychiatry, University of Nairobi.
I am carrying out a study on th**e** efficacy of interpersonal therapy psychosocial intervention among HIVsero-positive outpatients with low CD4 count attending city council of Nairobi health facilities in Dagoretti district. The study forms part of the requirement for the award of the Ph.D. I am being supervised by:

1.   Professor David Ndetei (Tel 0722518365)
       Professor of Psychiatry,
       Department of Psychiatry, UON

2   Professor Anne Obondo (072184686)
       Senior Lecturer
       Department of Psychiatry, UON

3.   Professor Eugene Kinyanda
       Professor of Psychiatry, Makerere University

I am requesting you to participate in this study by completing a set of questionnaires that ask you about your social demographic data, another set that measures whether you suffer from depression and suicidality.

The instruments that you will complete are internationally tested and have been used in many studies in various parts of the world including Kenya. They have been accepted to assess whether you have any of the sort for mental disorders. I developed the social demographic questionnaire.

Although this study has been approved by Kenyatta National Hospital research and ethical committee, your participation is completely voluntary. I am therefore requesting you to kindly participate in this study. Confidentiality will be ensured by serializing the questionnaires by anonymous serial number. However, if you do decide to complete the questionnaire do so as truthfully as possible. It takes an average of 35 minutes to complete. Once you have completed the questionnaire hand it over to the principle researcher or to the assistants. In case you are not

willing to participate in the study you are kindly requested to hand over the instrument to the principle researcher or to the assistants. Do not discuss it with anybody and try to complete it. Do not write on it any personal identity. There will be no immediate benefit to you for participating in the study. After analysis of the individual questionnaires however, the City council clinic will receive a copy of a report and recommendations which they could use to improve the mental health issues among the patients. For instant improve patients counseling units with mental health professionals, endeavor to train mental health counselors among the professionals to incorporate a mental health component and other relevant strategies. If in the process of completing the questionnaire you feel that you have a severe psychological problem with symptoms similar to those in the questionnaire that need immediate attention of a mental health professional/counselor, you could self-refer to the health facility staff or any place you felt you could get counseling help. Those respondents who may feel that they have suicidal tendency or feelings may contact the staff clinic at any time. Your completion of questionnaire will be taken as your indication of your consent to voluntarily participate in the study.

Thank you.
Immacolata Nyaga
PHD Student
Department of psychiatry, University of Nairobi
0727173254

APPENDIX III: RESPONDENT'S STATEMENT (For initial Assessment)

The above study has been explained to me and I agree to take part. I understand it is my choice to take part in the study. If I change my mind not to be in the study I will still continue to get the services in the health facility without any intimidation.

Serial no---

Respondents Signature--------------------------

Date----------------

APPENDIX IV: INSTRUMENTS (For initial Assesment)

SECTION I: SOCIAL DEMOGRAPHIC PROFILE

Date------------------   Health facility---------------   Serial No-------------------

Sex---------------- Age------------------

Marital status

Married ( )   Single ( )   Divorced ( )   Separated ( )   Widow ( ) widower

If widow or widower what was the cause of the spouses death --

Level of Education

Primary--

Secondary--------------------------------------

College--

Occupation-----------------------------------

Residential Village --------------------------

HIV patient care information

1 For how long have you known your HIV +status?
2 What is the level of your current CD4 count? ---------------
3What was your 1st CD4 count-------------?
3 Who are you free to tell your HIV status among your significant others?
4 For how long have you been on ARVs?
5 Are you a member of any Psycho social support group?
6 Have you missed your ARVs in the last three months?
 If yes what made you miss?

SECTION II: BECK'S DEPRESSION INVENTORY Scale (BDI)

Now I would like to ask you about your feelings. Some people feel sad, some people feel happy and some people have feelings somewhere in the middle. [SHOW VISUAL ANALOGUE SCALE OF FACES WITH FEELINGS] It is normal to feel all of these feelings. Please tell me honestly which statement in each group best describes the way you have been feeling <u>during the past two weeks,</u> including today.

The first groups of statements are about …
1. Sadness
I do not feel sad………………………………………..............0
I feel sad much of the time……………………………..............1
I am sad all of the time…………………………………………2
I am so sad or unhappy that I can't stand i………………………3
DK………………………………………………………………7
Refused………………………………………………………..8

The next statements are about REPEAT THIS LEAD IN FOR ALL GROUPS]
2. **Pessimism**
I am not discouraged about my future…………………………..0
I feel more discouraged about my future than I used to be………1
I do not expect things to work out for me…………………………2
I feel my future is hopeless and will only get worse………………3
DK…………………………………………………………......7
Refused…………………………………………………………...8

3. **Past Failure**
I do not feel like a fail…………………………………………...0
I have failed more than I should have……………………………1
As I look back, I see a lot of failure……………………………...2
I feel I am a total failure as a person……………………………3
DK………………………………………………………………7
Refused…………………………………………………………...8

4. **Loss of Pleasure**
I get as much pleasure as I ever did from the things I enjoy………0
I do not enjoy things as much as I used to…………………………1
I get very little pleasure from the things I used to enjoy………… 2
I cannot get any pleasure from the things I used to enjoy………...3
DK………………………………………………………………..7
Refused…………………………………………………………...8

5. **Guilty Feelings**
I do not feel particularly guilty…………………………………0
I feel guilty over many things I have done or should have done…..1
I feel quite guilty most of the time……………………………...2
I feel guilty all of the time………………………………………3
DK………………………………………………………………7
Refused …………………………………………………………8

6. **Punishment Feelings**
I do not feel I am being punished…………………………………0

I feel I am being punished……………………………………………1
I expect to be punished……………………………………………2
I feel I am being punished……………………………………………3
DK……………………………………………………………7
Refused………………………………………………………..8

7. Self -Dislike
I feel the same about myself as ever-………………………………0
I have lost confidence in myself…………………………………1
I am disappointed in myself………………………………………...2
I dislike myself……………………………………………………3
DK…………………………………………………………......7
Refused……………………………………………………………8

8. Self-Criticalness
I do not criticize or blame myself more than usual……………….   0
I am more critical of myself than I used to be………………………   1
I criticize myself for all of my faults…………………………………2
I blame myself for everything bad that happens……………………   3
DK…………………………………………………………………...7
Refused………………………………………………………………8

9. Suicidal Thoughts
I do not have any thoughts of killing myself   …………   0
I have thoughts of killing myself, but I would not carry them out ……1
I would like to kill myself…………………………………….................. 2
I would kill myself if I had the chance…………………………………3
DK…………………………….   …………………………………7
Refused……………………………………………………………8

10. Crying
I don't cry any more than I used to…………………………………...0
I cry more than I used to…………………………………………1
I cry over every little thin………………………………………… 2
I feel like crying, but I cannot cry...3
 DK……………………………………………………………………-7
Refused……………………………………………………   8

11. Agitation
I am not more restless or wound up than usual………………………..0
I feel more restless or wound up than usual…………………………...1
I am so restless or agitated that it is hard to stay still………………......2
I am so restless or agitated that I have to keep moving or
doing something…………………………………………………..3
DK………………………………………………………………...7
Refused……………………………………………………………8

12. Loss of Interest
I have not lost interest in other people or activities……………………..0
I am less interested in other people or things than before………………1
I have lost most of my interest in other people or things………………..2
It is hard to get interested in anything………………………………...3

13. Indecisiveness

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

I find it more difficult to make decisions than usual……………………..1

I have much greater difficulty in making decisions than I used to ………2

I have trouble making any decisions………………………………………3

DK……………………………………………………………………....7

Refused…………………………………………………………………….8

14. Worthlessness

I do not feel I am worthless…………………………………………………0

I do not consider myself as worthwhile and useful as I used to…………...1

I feel more worthless as compared to other people………………………...2

I feel utterly worthless……………………………………………….....3

DK………………………………………………………………………...7

Refused……………………………………………………………………..8

15. Loss of Energy

I have as much energy as ever…………………………………………..0

I have less energy than I used to have………………………………………1

I do not have enough energy to do very much……………………..................2

I do not have enough energy to do anything   …………………………... 3

DK………………………………………………………………………...7

Refused…………………………………………………………………...8

16. Changes in Sleeping Pattern

I have not experienced any change in my sleeping pattern…………………0

I sleep somewhat more than usual……………………………………….1a

I sleep somewhat less than usual…………………………………….......1b

I sleep a lot more than usual……………………………………………..2a

I sleep a lot less than usual……………………………………………….2b

I sleep most of the day……………………………………………………3a

I wake up 1-2 hours early and can't get back to sleep………………………3b

DK………………………………………………………………………..7

Refused………………………………………………………………..8

17. Irritability

I am no more irritable than usual……………………………………………0

I am more irritable than usual……………………………………………...1

I am much more irritable than usual………………………………………2

I am irritable all the time……………………………………………….3

DK………………………………………………………………………...7

Refused……………………………………………………………………8

18. Changes in Appetite

I have not experienced any change in my appetite………………………0

My appetite is somewhat less than usual…………………………………1

My appetite is somewhat greater than usual………………………………1b

My appetite is much less than before……………………………………..2a

My appetite is much greater than usual…………………………………...2b

I have no appetite at all……………………………………………………...3a
I crave food all the time…………………………………………………… 3b
DK………………………………………………………………………...7
Refused…………………………………………………………………….8

19. Concentration
I can concentrate as well as ever…………………………………………..0
I cannot concentrate as well as usual……………………………………...1
It is hard to keep my mind on anything for very long……………………...2
I am irritable all the time   3
DK………………………………………………………………………...7

Refused…………………………………………………………………….8.

20. Tiredness or Fatigue
I am no more tired or fatigued than usual   0
I get more tired or fatigued more easily than usual   1
I am too tired or fatigued to do a lot of the things I used to do   2
I am too tired or fatigued to do most of the things I used to do   .   3
DK……………………….   7
Refused……………………

21. Loss of Interest in Sex
I have not noticed any recent change in my interest in sex…………………..0
I am less interested in sex than I used to be………………………………..1
I am much less interested in sex now………………………………………..2
I have lost interest in sex completely………………………………………3
DK………………………………………………………………………...7
Refused…………………………………………………………………...8

SECTION III: BECK'S SUICIDALITY SCALE (BSS) AND HOPELESSNESS SCALE

Please carefully read each group of statements below. Circle the one statement in each group that best describes how you have been feeling for the past week, Including today. Be sure to read all of the statements in each group before making a choice.

BSS A

1.	I have a moderate to strong wish to live. I have a weak wish to live. I have no wish to live.	6	I have brief periods of thinking about killing Myself which pass quickly? I have periods of thinking about killing myself which last for moderate amounts of time. I have long periods of thinking about killing myself.
2.	I have no wish to die. I have a weak wish to die. I have a moderate to strong wish to die.	7.	I rarely or only occasionally think about killing myself. I have frequent thoughts about killing myself, I continuously think about killing myself.
3.	My reasons for living outweigh my reasons for dying. My reasons for living or dying are about equal. My reasons for dying outweigh my Reasons for living.	8.	I do not accept the idea of killing myself. I neither accept nor reject the idea of killing myself. I accept the idea of killing myself.
4	I have no desire to kill myself. I have a weak desire to kill myself. I have a moderate to strong desire to kill myself.	9.	I can keep myself from committing suicide. I am unsure that I can keep myself from committing suicide. I cannot keep myself from committing suicide.
5	I would try to save my life if I found myself in a life-threatening situation I would take a chance on life or death if I found myself in a life-threatening situation I would not take the steps necessary to avoid death if I found myself in a life-threatening situation.	10.	I would not kill myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc. I am somewhat concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc. I am not or only a little concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc.
	If you have circled the <u>zero</u> (0) statements in both Groups 4 and 5 above, then skip down to Group20. If you have marked a<u>1 or 2</u> in either Group 4 or 5, then open here and go to Group 6.	11.	My reasons for wanting to commit suicide are primarily aimed at influencing other people, such as getting even with people, making people happier, making people Pay attention to me, etc. My reasons for wanting to commit suicide are not only aimed at influencing other people, but also represent a 0. Way of solving my problems. My reasons for wanting to commit suicide are primarily based upon escaping from my problems.

12.	I have no specific plan about how to kill myself.	17.	I have not written a suicide note.
			I have thought about writing a suicide note or have started to write one, but have not completed it.
	I have considered ways of killing myself, but have not worked out the details.		I have completed a suicide note:
	I have a specific plan for killing myself.		
13.		18.	I have made no arrangements for what will happen after I have committed suicide.
	I do not have access to a method or an opportunity to kill myself.		I have thought about making some arrangements for what will happen after I have committed suicide.
	The method that I would use for committing suicide takes time, and I really do not have a good opportunity to use this method.		I have made definite arrangements for what will happen after I have committed suicide.
	I have access or anticipate having access to the method that I would choose for killing myself and also have or shall have the opportunity to use it.		
14.	I do not have the courage or the ability to commit suicide.	19.	I have not hidden my desire to kill myself from people.
	I am unsure that I have the courage or the ability to commit suicide.		I have held back telling people about wanting to kill myself.
	I have the courage and the ability to commit suicide.		I have attempted to hide, conceal, or lie about wanting to commit suicide.
15.	I do not expect to make a suicide attempt.	20.	I have never attempted suicide.
	I am unsure that I shall make a suicide attempt.		I have attempted suicide once.
	I am sure that I shall make a suicide attempt.		I have attempted suicide two or more limes.
			If you have previously attempted suicide, please continue with the next statement group.

PSYCHOLOGICAL TREATMENT MANUAL MODIFIED FOR THE RESEARCH STUDY

Introduction

The intervention model of Interpersonal Therapy is a 12-16 weeks model. It is psychoeducation in nature to some degree and has three phases. Each phase consist of three sessions**.** The Psychoeducation component employed strictly follows the four basic Interpersonal problem areas. In this study, it was modified to fit in an African context for the participants.
These areas are;

i) unresolved grief; a description of grief and loss of health, depression, suicide, hopelessness

anger, guilt and anxiety

a)what is grief

b) What is depression according to you?

c)How do you explain depression in your community

d) How do you explain suicide and people who commit it in your community?

ii) role transitions psychological and body physical changes associated with sickness, guilt and

sick role

a)What general changes did you experience during the early stages of your illness

b) Were there any family conflicts after the disclosure of your status

c) if yes with who

d) How were they resolved?

iii) interpersonal role disputes(often marital disputes) divorce, separation and family conflicts

iv) Interpersonal deficits(deficiencies) social support deficit, loss of relationships and adherence to treatment

a) Are there any challenges you are facing at the moment either with your family, friends or

 work

General Objective –This is given to the participants in psychoeducation on interpersonal therapy on depression, suicidality and HIV relatedness emotional symptoms

The goal of IPT in the study

The goal of IPT in the study is to be the patient's ally and help the patient manage the four basic interpersonal areas. The identification of problem area includes:

Psychoeducation- After identification of the problems, a description of HIV and other emotional and psychological demands that cause symptoms are   discussed. This includes talking about depression, suicidality, and antiretroviral drug reactions that may occur including ARV adherence. The therapist and patient then attempted to determine which of the four problems area is most closely associated with the onset of the current psychological symptoms. The therapist explains the client that he or she adopts the" sick role" The concept of the sick role is based on the notion that illness is not merely a condition but a social role that affects the attitudes and behaviors of the client and those around him or her. Over time, the patient/client cams to see that sick role has increasingly come to govern his or her social interactions. Therapy is organized to help the client deal with the difficulties in the primary problem areas by use of the following:

Identification of problem areas - In the early session the therapist and participants attempted to determine which of those four problems areas is most closely associated with the onset of his or her current HIV related psychotramatic problems. The therapist then organizes to help the patient deal with the interpersonal difficulties in the primary problem area by encouraging the client to discover coping strategies to employ in daily life in his /her individual situation.

Dealing with unresolved grief

The therapist discusses with the patient on what happens when dealing with unresolved grief. When in normal bereavement of loss of health, the patient experiences symptoms such as sadness, disturbed sleep and difficulty functioning. At this time attention is paid to the patients unique set of psychosocial stressors, these can be stigma of the disease and effects of dealing with the family members who may isolate themselves while at the same time dealing with consequences of the disease.

With the application of IPT, the patient's problems is expected to reduce   in two to four months but if unresolved then the patient may be experiencing delayed grief of loss of his/her health which has been postponed or it could be distorted grief with no emotional symptoms which is often physical. If this is identified as the primary issue the therapist facilitates the mourning process by helping the client re-establish interests and relationships that begin to fill the void of what had been lost.

Interpersonal role dispute

This describes how and why disputes occur. The patient is explained that if the patient and at least, one other significant person had differing expectations in their relationship, it results to disputes. Therefore both patient and therapist focus on disputes that seem repetitious or offer little hopes of improvement. The client is helped to identify the nature of these disputes and decide on the plan of action. He modifies unsatisfying patterns and reassesses expectations of the relationships.

Interpersonal role transition

This discusses about HIV seropositive and depression- Depression and HIV sero-positive associated with role transitions occur when the patient has difficulty coping with life changes that required new roles. (For example, when a marriage ended) The client is helped to give up

old roles and express the accompanying feelings of guilt, anger and loss to acquire new skills and develop a new social network around a new role

Interpersonal deficits (deficiencies)

This reviews patterns in relationship. The therapist tries to elicit an "interpersonal inventory" a review of the patient's patterns in relationships, capacity for intimacy, and particularly an evaluation of the current relationships is done. The focus for treatment emerges from the last. If the patient has struggles with a significant other (role dispute), or the patient has gone through some negative life change. (Role transition) therapist and patient re-assess expectations of the relationship or both and then decided on the plan of action. In the absence of any of these, the default focus is on interpersonal deficits, or the absence of a current life event. The therapist then links the target diagnosis to the interpersonal focus.

With the patient's agreement on this focus, treatment moves into the middle phase where other facets of the opening phase include giving the patient the sick role. The patient is helped to recognize that HIV infection keeps the patient from functioning at full capacity, and setting treatment parameters such as the time limit and therapy focus on recent interpersonal interactions as follows;

Treatment structuring

1) Beginning phase; 6 sessions

2) Middle Phase; 6 sessions

3) End. Phase; 4 sessions

4) *Steps in treatment*

Beginning Phase (4-6 sessions)

In this initial phase, it requires the therapist to identify the target diagnosis of the patient, the interpersonal context in which it presents and diagnosing major depression, and other emotional and psychological demands that cause symptoms. The therapist follows DSM-IV and employs severity measures such as Beck Depression Inventory (BDI) to refer to the problem as an illness rather than the patient's personal defects

It involves teaching the client about the nature of his illness and the ways that it manifests in his or her life and relationship. The symptoms are reviewed in detail and the accurate naming of the problem is important. The therapist explains the patient the psychological symptoms, the treatment and the client adopts the sick role. Patient is explained that the concept of sick role is based on the notion that illness is not merely a condition but a social role that affects the attitudes and behaviors of the patient and those around him or her. The patient overtime comes to see that the sick role has increasingly governed his or her social interactions. Example in this study; *"As we have discussed, you are suffering from emotional and psychological demands that are stressful as a result to learning that you have tested HIV Positive. This will be a long term treatment illness and not your fault. From what you have told me, your emotions and*

psychological demands seems to be related to what is happening in your life right now. You stopped sleeping, eating and began to feel depressed after you tested HIV+, and you have had difficulty in coming to terms with that terrible feeling of being infected with the Virus. We call that HIV related depression, which is a common, treatable form of depression. I suggest that we spend the next 12 weeks working on helping you deal with that bereavement. If you can solve this interpersonal problem, not only will your life be better, but your CD4 count will improve as well. This formulation defines the need for therapy. The connection between the HIV illness and the negative emotional feelings is that there is no pretense, that this is what causes depression.

Middle phase

In the middle phase of treatment, the therapist uses specific strategies to deal with four potential problem areas of focus. This involves, resolving an interpersonal struggle in a role dispute, helping the patient to mourn the loss of an old role (when he /she had good Health)and assume a new one in a role transition, or decreasing social isolation for interpersonal deficits. Within this focus, therapy is addressed and involves the following;

(a) The patient's ability to assert his or her needs and wishes in interpersonal encounters
(b) Patient validates his anger as a normal interpersonal signal
(c) Patient is encouraged on efficient expression, as well as taking appropriate social risks.

Anger management- The patient is taught skills like counting up to a hundred when someone has angered him to reduce the feelings of anger. He is taught on social skills like making friends whom he could interact with freely.

Assertiveness training- The patient is taught how to be assertive to acquire the ability of communication by expressing his thoughts, opinions and feelings in a direct and assertive manner. This helps him understand the need to adhere to treatment of ARVs because he is able to control his life by making well informed decisions including positive behavior change

Coping strategies*;* when teaching the patient on coping strategies the patient is encouraged to discover and employ the skills tailored to his/her individual situation in daily life. The strategies include teaching the patient the ability to build assertiveness and self-esteem focusing on reducing depressive symptoms, resolving life problems, and personal vulnerability that contributed to symptoms.

Muscle relaxation. This exercise is a voluntary way of letting go the tension that is muscular or psychological due to stress of the HIV illness that causes the individual feelings of irritability and muscle clenching. This is done through deep breathing exercises to help the patient learn skills of muscle relaxation in order to release tension in the body that precipitated anxiety.

End phase 3 sessions

Group counseling and free group interactions- The 10 groups in the experimental group required 38 hours to cover the initial phase 16 sessions. Another 34 hours were required for a repeat before termination. In the last few sessions, the therapist reminded the patients that termination was near.

The patients were helped to feel more capable and independent by reviewing considerable accomplishments during the treatment, and to note that ending therapy was itself a role transition, with inevitable good and painful aspects.

SCHEDULE OF ACTIVITIES FOR PSYCHOLOGICAL TREATMENT

Day	Duration	Objectives	Output
One	**2hrs 45 min**	**Psychoeducation I**	
Session		1 Introduced interpersonal therapy psychoeducation 2 Described Health and mental health 3 Described depression and suicidality 4 Described ARVs adherence 5 Interpersonal therapy application in depression and suicidality	Allowed questions and clarifications
Two	**2hrs 40min**	**Psychoeducation II** 6 Discussed the predisposing and precipitating causes of depression, 7 Suicidality in HIV seropositive related symptoms and adherence	Allowed questions and clarifications
Three	**3hrs**	**Psychoeducation III** 8 Specific strategy to deal with four potential problem areas of focus. 9 Elicited interpersonal inventory 10 Described and demonstrated life coping strategies(anger management) 11 Build assertiveness and self-esteem 12 Muscle relaxation(exercise demonstration)	**Allow questions and clarifications** **Did some exercise**

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