EFFECTS OF PSYCHOSOCIAL SUPPORT ON ANTI-RETROVIRAL THERAPY ADHERENCE AND CLINICAL OUTCOMES OF HIV PATIENTS AT KWALE AND MACHAKOS, KENYA

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MAY 2012
DECLARATION

“This thesis is my original work and has not been presented for a degree in any other University”

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DEDICATION

To my mother and my wife, I dedicate this study to you for continuous encouragement and support. You were, and still are my source of inspiration.
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ABBREVIATIONS AND ACRONYMS

AIDS  Acquired Immune Deficiency Syndrome
ARVs  Antiretroviral
ART  Antiretroviral Therapy
CBOs  Community Based Organisations
CCCs  Comprehensive Care Clinic
CDC  Centre for Disease Control and Prevention.
CPT  Cotrimoxazole Preventive Therapy
CT  Counselling and Testing
CXR  Chest X-ray
DAART  Directly Administered ART Adherence Study
DTC  Diagnostic Testing and Counselling
DASCO  District AIDS and STI Coordinator
FP  Family Planning
FBOs  Faith Based Organisations
FHI  Family Health International
PARTO  Provincial ART Officer
PASCO  Provincial AIDS and STI Coordinator
PEP  Post Exposure Prophylaxis
PSG  Psychosocial Support Groups
PLWHA  People Living with HIV AIDS
PMTCT  Prevention of Mother to Child Transmission
NASCOP  National AIDS and STI Control Program.
NACC  National AIDS Co-ordinating Committee
STI  Sexually Transmitted Infections
RH  Reproductive Health
TB  Tuberculosis
VCT  Voluntary Counselling and Testing
UNFPA  United Nation Population Fund
WHO  World Health Organisation
MOH 727  National tool for collecting HIV/AIDS related facility data
MOH 527  National MOH tool for collecting patient information at the CCC
ABSTRACT

Effects of Psychosocial Support on ART Adherence and Clinical Outcomes of HIV Patients at Kwale and Machakos, Kenya

The effects of psychosocial support on ART adherence and clinical outcomes following an HIV diagnosis have been well documented in western countries where linkages between HIV-related treatment and psychosocial support programs are well established, little is known about those who become engaged with such services in countries of the world where comprehensive HIV-related care and prevention systems are continuing to develop. The aim of the study was to understand how patients’ psychosocial factors might affect antiretroviral treatment adherence and other clinical outcomes and to identify key components of support, including the social and economic aspects necessary for promoting optimal adherence. The objective of this study was to investigate the effects of psychosocial support on ART adherence and clinical outcomes of HIV patients enrolled at Kwale and Machakos district hospitals. This was a cross-sectional study which was carried out at Machakos and Kwale HIV Comprehensive Care Clinics (CCC). Two different types of structured questionnaires were administered; one on the HIV positive clients/patients enrolled on care at the CCC and their past six months and over records reviewed by looking at the CCC patient blue card (abstraction). Data was collected using pre-tested questionnaire which were administered to each of the 440 clients/patients selected randomly from a population of 2820 clients/patients on care at the CCC. Individual in-depth interviews and focus group discussions were conducted with CCC managers and support group leaders to collect qualitative data. SPSS was used to conduct data analysis, descriptive statistics to examine the frequency. The study findings showed that patients linked to HIV support groups were able to adhere to ART optimally (Chi-square=20.7, p=0.000 and 93.8, p=0.000 in Kwale and Machakos respectively) and had better clinical outcomes compared to those who were not, among the clinical outcomes that the study investigated were opportunistic infection relapses and new OIs (t=-2.928, p=0.004), weight outcomes (t=2.170, p-value=0.031) and failing of the first line ARVs regimen (Chi-square 8.74, p=0.003 and Chi-square 40.15, p=0.000 respectively). The study data indicated that there were no statistically significant relationships between occupation and adherence level including clinical outcomes of the linked and non-linked patients. The study used t-test and Chi-square tests to establish if there was a difference in clinical outcomes such as opportunistic infections, gain in body weight and ART adherence between the linked and non-linked patients. Linked patients had better clinical outcomes and optimum ART adherence compared to non-linked patients. There is need to encourage formation of HIV psychosocial support groups at the community level, these support groups should be linked to health facilities’ HIV comprehensive care clinics to complement the continuum of care between facilities and the community. The Ministry of Health and other stakeholders should encourage formation of HIV psychosocial support groups, including addressing their sustainability and further support through income generating activities.
CHAPTER I: INTRODUCTION

1.1 Background

Up to 60% of all hospital beds in Kenya are occupied by patients with HIV related illness. Opportunistic infections in HIV infected persons is the major cause of death (KAIS, 2007), these includes TB, fungal infections, herpes zoster and cryptosporidiosis. Opportunistic infections are those that patients who have HIV infection contract as a result of their weakened immune system. Early treatment of HIV will improve the health and quality of life of the patient (WHO/UNAIDS, 2003). As HIV infections progress to AIDS, most if not all patients will suffer a form of opportunistic infection. The development of highly active antiretroviral therapy (HAART) in 1996 for the treatment of HIV infection has led to a dramatic reduction in HIV-related illness and death (UNAIDS 2003; WHO, 2005,).

Antiretroviral therapy (ART) has transformed HIV infection into a treatable, chronic condition and this has enabled many HIV positive patients regain strength and go back to work (NASCOP, 2002). However, the need to continue treatment for decades rather than years, calls for a long-term perspective of ART (Manders, 2001). Non adherence to ART treatment is an important public health problem and one that involves substantial morbidity and medical costs (Republic of Kenya, 2003). Adherence to the regimen is essential for successful treatment and sustained viral control. Studies have indicated that at least 95% adherence to ART regimens is optimal (UNAIDS, 2005). It has been demonstrated that a 10% higher level of adherence results in a 21% reduction in disease progression. ART adherence means accepting, agreeing and following correctly a prescribed
treatment as per agreed time, drug dose and relationship to food/drink. Adherence requires the participation of the patient. It is achieved by a shared decision making process where both the patient and health worker play an active role.

The major concern in providing and scaling up ART in resource-limited settings in Kenya is the emergence of drug-resistant virus due to suboptimal ART adherence as a result of poor ART adherence by the patients. As shown by Paterson (2003), ART adherence above 95% predicts virological success and is necessary to achieve maximum clinical benefit. Indeed, failure to adhere to drug regimens has been shown to result in treatment failure due to the development of drug-resistant virus, leading to poorer clinical outcomes and an increased likelihood of death (Farmer, 2001). It has been proposed that HIV infected individuals in resource-limited areas will have lower levels of ART adherence than HIV-infected individuals in resource-rich areas, due to decreased infrastructure and education in resource-limited areas. Only limited information has been available about the achievable level of antiretroviral adherence in resource-limited settings. In Kenya alone, over 30% of patients on ART treatment have reported to have not adhered to treatment at some point in time and over 20% are not currently adhering (NASCOP, 2002a; NASCOP,2008b). Recent international initiatives such as the US President’s Emergency Plan for AIDS Relief (PEPFAR) and the United Nations global fund to fight AIDS, tuberculosis, and malaria as well as other national and international initiatives have dramatically increased access to HAART in Kenya (Campbell, C. 2003). Implementation of the operational plan for comprehensive HIV and AIDS care, management, and treatment, which provides HAART free of charge through the
public sector, started in first quarter of the 2004. By June 2007, there were 250,000 patients (including children) on HAART. The various factors affecting success of ART are social aspects like motivation to begin therapy, ability to adhere to therapy, lifestyle pattern, financial support, family support, pros and cons of starting therapy and pharmacological aspects like tolerability of the regimen, availability of the drugs (Granrich., 2001). The lack of trust between clinician and patient, active drug and alcohol use, active mental illness (e.g. depression), lack of patient education and inability of patients to identify their medications, lack of reliable access to primary medical care or medication are considered to be predictors of inadequate adherence.

Interventions at various levels, e.g. patient level, medication level, healthcare level and community level, boost adherence and overall outcome of ART. Support groups create a safe and open space for people to come out of isolation and reduce stigma by giving infected and affected persons chance to come together and share experiences. The Rationale for the HIV/AIDS support groups is to provide medical and clinical knowledge through practical advice, emotional and spiritual support. The members of the support group become advocate to each other and their community; they directly and indirectly educate their communities. The beneficiaries of HIV support groups are people living with HIV, families and friends affected by the disease and workers caring for people living with the virus.

1.2 Problem Statement

With high HIV prevalence and large numbers of people living with HIV, about 400,000 Kenyans are currently on ART treatment (KAIS, 2007). Community and
home–based HIV service delivery has become increasingly important in reaching and putting almost all PLHIVs on treatment (Farmer, 2001). As ART programs rapidly expands, the long term success of these programs depends on a good understanding of the behavioural determinates of acceptance and adherence to antiretroviral therapy (ART). Non adherence can result in tangible and intangible consequences, including suffering and death; diminished quality of life; and provider and patient frustrations, anger and hopelessness. In Kenya, there is complete lack of awareness among the masses regarding ART adherence. Health care providers need vigorous training in delivering all aspects of ART. Busy medical practitioners find it difficult to spare enough time for the extended counselling that is needed for the success of any therapy, especially ART. Community based psychosocial support groups play a crucial role in supporting the patients on care to adhere to ARV, TB and other opportunistic disease medications. The biggest setback to a successful ART treatment regime has been lack of adherence by the positive patients (National AIDS and STIs Control Program NASCOP (2002b). The success of any adherence strategy depends on education of the patients before the initiation of ART, an assessment of their understanding of the therapy, and their readiness for treatment. Adherence counselling includes giving basic information on HIV and its manifestation, the benefits and side-effects of ARV medications, how the medication should be taken and the importance of not missing any doses (WHO, 2005).

The need to maintain patients on treatment for decades rather than years, calls for a long-term perspective of antiretroviral therapy (Tadios, 2006). In many studies on barriers to ART uptake and poor ART adherence, psychosocial issues have
been mentioned as the single most contributors (UNAIDS, 2003b; Republic of Kenya 2005a). Most psychosocial issues and challenges related to ART, stems from the community, hence the need to have community grown solutions (Drainoni, 2007). In Kenya, according to NASCOP ART report (2008) and DAART ART intervention study (2007) over 30% of the patients reported to have not adhered to ART at some point in the course of treatment and over 20% of the patients are currently not adhering to ART. Most of the studies conducted to establish facilitators of non adherence were specifically looking at aspects such as ART tolerability and compliance, disease progression and adherence, factors predisposing one to poor adherence e.t.c, (Chesney, 2003; Okello, 2007; Nachega, 2004.), Few studies have been conducted to establish the relationship between psychosocial support of HIV patients and ART adherence including clinical outcomes. This study established that psychosocial aspects of the HIV patients plays a greater role in the overall clinical outcome of the patient and immensely support ART drug adherence.

1.3 Justification.

Any model for the provision of comprehensive care for PLHIV and their families must therefore ensure that clients’ psychosocial needs, in addition to their medical needs, are being satisfactorily addressed. In order to better address psychosocial issues in the context of HIV, programs must increase the level of community involvement in the treatment, care and support of PLHIV and their families. Achieving this goal will require enhancing psychosocial support services for PLHIV and strengthening linkages between facilities, communities and support groups. In order to facilitate adherence and improve outcome of ART in HIV
infected patients, it is necessary to identify potential relevant issues in patients that influence adherence, and to determine the possible interventions to improve adherence (Shah, 2007). There is a paucity of reports on ART from resource-poor settings. Therefore, understanding of barriers and facilitators helps in planning interventions to address adherence concerns (Burnam, 2001). Although few data is available on some of the factors associated with adherence to ART, it is important to continue to identify relevant factors so that patients at risk for non-adherence can be identified and adherence-promoting interventions developed. Little is known about the patient characteristics, social support networks, and relationship factors associated with excellent adherence in resource-limited settings, even though these can be important clues that inform the identification of targets and the approaches of individual- and community-based ART therapy adherence interventions (Bleichner, 1997). There is an urgent need to evaluate the effectiveness and importance of linking patients to psychosocial support groups. There are few comparable studies about ART adherence health behavior. Research on the characteristics of the health advocates and patients, their interpersonal relationships, and the role of those relationships in HAART adherence would contribute greatly to an understanding of effective adherence intervention models for this population. Only limited information has been available about the achievable level of antiretroviral adherence in resource-limited settings (Oyeledun, 2007). Psychosocial intervention has been found to contribute to improved clinical outcomes of HIV positive patients enrolled on care (Atkinson, 1994). The preponderance of evidence also indicates that psychosocial interventions can influence subclinical markers of disease as well as clinical
outcomes in organic disorders. Psychosocial support can strengthen patient internal capacity to seek positive treatment outcomes (Cabrera, 1996). Sustaining adherence represents a significant challenge for patients receiving treatment and for their service providers

1.4 Objectives of the study

1.4.1 Broad Objective

The aim of this study was to determine effects of psychosocial support groups on ART adherence and clinical outcomes of HIV positive patients at Kwale and Machakos CCCs.

1.4.2 Specific Objective

i. To determine influence of psychosocial support on ART adherence and clinical outcomes

ii. To determine whether patients with good ART adherence and better clinical outcomes were linked to psychosocial support groups or not.

iii. To identify the psychosocial factors that influence ART adherence and enhance clinical outcomes in PLHIV

iv. To establish psychosocial challenges facing HIV positive patients from the time they confirm their HIV positive status.

1.5 Null Hypothesis

i. There is no relationship between ART adherence and linkage to psychosocial support group
ii. There is no relationship between clinical outcomes and linkage to psychosocial support group

1.6 Research Questions

1. What activities conducted by psychosocial support groups influenced ART adherence and resulted in better clinical outcomes?
2. What are the specific clinical outcomes associated with HIV positive patients linked to psychosocial support groups?
3. What psychosocial factors influenced ART adherence and enhanced clinical outcomes?
4. What are psychosocial challenges facing HIV positive patients from the time they disclose their status?

1.7 Significance of the study

The psychosocial consequences of HIV infection vary over the course of HIV disease and can be as diverse as the HIV disease spectrum itself (Atkinson J, et al., 1994). Additionally, those facing psychological distress following HIV diagnosis, including depression, general anxiety disorder, panic disorder, and drug use disorders, have been shown to be less likely to engage in care and prevention behavior and could therefore challenge their own health and that of their sexual partners. In this study, it was found that patient-selected treatment supports groups affected antiretroviral treatment, morbidity and mortality outcomes of HIV positive patients linked to support groups. The finding of this study will draw lessons to programme managers, clinicians as best practice to link all HIV positive patients enrolled at the CCC and other HIV care platforms to a psychosocial support group within the community for continued psychosocial
counseling and support. The findings of this study revealed that there is need for the facilities to support communities to set up HIV psychosocial support groups at the community level with greater involvement of the PLHIVs.

1.8 Conceptual Framework

The overall Clinical outcomes in HIV positive patients and subsequent ART adherence level depends on several factors and a set of activities. However, the activity that is directly responsible for its outputs (good clinical outcomes and optimal adherence level) is the linkage of these patients to a support group affiliated to the Comprehensive care clinic (CCC). The figure below is the study’s conceptual framework.

Source: Social determinants of health inequities elaborated EQH/EIP 2006 (OPSH)

Figure 1-1 Conceptual Frameworks
1.9 Operational Definitions of Terms

Adherence level: The extent at which the HIV positive patient is sticking to the prescribed ART medication. Measured by doing pill counts by the clinicians or indirectly measured by monitoring the clinical outcome of the patient.

Clinical outcomes: HIV patients’ treatment outcome after being put on care and treatment for a specified period of time it could be an improvement or the opposite. Measured by looking at how many relapse of opportunistic infections or new infections the patients get in a specified period of time.

Karnofsky Performance Scale: is an assessment tool used to assist clinicians and caretakers in measuring a patient's ability to carry out activities of daily living. Measured by scoring the patient on the ability to do specific task with or without support.

Economic challenges: Financial problems and changes that have occurred in respondent’s life because of being HIV positive that denies them to access CCCS. Measured by asking the patients about their economic status before and after getting infected with the disease.

Service provider and medical related challenges: Health workers’ attitudes towards clients, site of CCC, availability of services at CCC and technical support to clients by the workers

HIV support programmes: Activities deliberately initiated for a specified good or purpose i.e. linked to HIV and AIDS. Measured by looking at the levels of contribution to improving quality of life for the PLHIVs
**HIV networks:** Refers to any form of relationship that develops out of social interests and can be used to assist families affected by HIV and AIDS. In this study the measure of linkage or non linkage is by asking whether the participants belong to a network or support group or not.

**Support programs:** Activities deliberately initiated for a specified good or purpose i.e. linked to HIV and AIDS.

**HIV coping strategies:** What PLHIV are doing collectively to address their problems and needs in relation to HIV and AIDS. This can be quantified by asking them to list various strategy employed to address the problem at hand.
CHAPTER II: LITERATURE REVIEW

2.1 Introduction

The chapter describes the HIV epidemic and psychosocial impacts in its wake, this includes challenges faced by PLHIV in adhering to ART, consequences of poor adherence. It concludes by looking at various responses to poor adherence in relation to HIV comprehensive care and HIV psychosocial support groups.

2.2 HIV Comprehensive Care Clinic and ART Adherence

The impact of the HIV pandemic in sub-Saharan Africa has been devastating to the region and has accounted for 68% of the HIV infections in the world to date. United Nations AIDS Program (UNAIDS) estimated that by the end of 2007, those in Africa represented 76% of AIDS deaths in the world. In Kenya, it is estimated that just over 7.1 % (KAIS, 2007) of the adult population is living with HIV, with infection rates being higher among women (8.7%) than men (4.5%), as is the case in many African countries. (UNAIDS, 2006; WHO, 2006). Emotional and spiritual support for PLHIV and their loved ones and care partners is an important aspect of positive living (Ankrah, 1996). The development of clinical care models must therefore embrace the needs for such non clinical aspects of care and ensure that HIV care is provided using a more holistic family and community centred approach this has been shown by Randburg (2008). Medical advances in both the nature of and access to, HIV related treatments have fueled the development of comprehensive HIV care programs in many countries, with an estimated 1 million individuals actively on antiretroviral medications in sub-Saharan Africa( WHO,2005c).While these advances have been significant, they also have presented care providers with complex quality of life issues among
those receiving an HIV diagnosis and treatment, among the challenges associated with psychological health status and impacts to one’s ability to maintain functional social interactions as demonstrated by Brechtl (2006). According to the American Psychological Association report (1998), psychosocial consequences of HIV infection vary over the course of HIV disease and can be as diverse as the HIV disease spectrum. Additionally, those facing psychological distress following an HIV diagnosis, including depression, general anxiety disorder, panic disorder, and drug use disorders, have been shown to be less likely to engage in care and prevention behaviors and could therefore challenge their own health and that of their partner/s (Friedland, 2005). Patients on ART but with unresolved psychosocial issues have been shown to have poor adherence rates. Among HIV-positive individuals, estimates of non-adherence to medication regimens range from 35% to 95% (Altice et al., 1998; Erlen, 2002; Golin 2002; Ickovics; 2002; Muma, 1995; Murphy, 2002; Sam, 1992). The success of providing ART in resource-poor settings such as Kenya will depend on the ability of health care providers and patients to assess and maintain proper adherence to medication regimens. Excellent adherence to ART is critical for treatment success (Besch, 1995; Carpenter., 2000; Ickovics & Meisler, 1997; Paterson., 2000). Failure to comply with combination therapy can result in increased HIV replication and the development of viral mutations, which can lead to medication resistance (Bangsberg, 2000; Carpenter., 2000; Hirsch, 1998; Wainberg & Friedland, 1998). One of the major concerns in providing and scaling up ART in resource-limited settings is the emergence of drug-resistant virus due to suboptimal ART adherence; this is according to Palella (2004). As shown by Paterson (1998), ART
adherence above 95% predicts virological success and is necessary to achieve maximum clinical benefit. Over the past several years, researchers have identified several factors associated with adherence to antiretroviral medications. Depression (Catz, K 2000; Holzemer (1999), severity of side effects Catz (2000); Duran (2001); Max, & Sherer, 2000), perceived stress and pessimism about HIV (Chesney, 1997), and inadequate coping mechanisms (Chesney, 1997; Singh, 1999) have been associated with lower levels of adherence. Failure to adhere to drug regimens has been shown to result in treatment failure due to the development of drug-resistant virus, leading to poorer clinical outcomes and an increased likelihood of death (this is according to Lucas (2003). A meta-analysis conducted by Mills (2008), examined barriers and facilitators of ART adherence in 72 developed and 12 developing country settings (5 African). Barriers to adherence in both settings included fear of disclosure, forgetfulness, health illiteracy, substance abuse, complicated regimens, and patients being away from their medications. In developing settings, financial constraints and a disruption in access have been mentioned as the biggest barrier (WHO, 2003). In a longitudinal study in Hunan and Hubei provinces China, the Antiretroviral Medication Self-Report and a 7-day Visual Analogue Scale was used to assess levels of adherence, while quality of life was evaluated using SF-36. CD4 cell count and the number, duration, and cost of hospitalizations were collected from participant medical records. Measurements were obtained at baseline, month 3, and month 6. A total of 113 participants enrolled and 98 completed the study. The mean level of adherence was 91%, 89%, and 88% at baseline and at 3 and 6 months, respectively. Of participants, 54=98 (58%) reported taking all doses at all three
interviews and were classified as consistent adherers (CA). CAs had better physical function (p<0.001), general health (p=0.009), vitality (p=0.016), social functioning (p=0.001), and mental health (p=0.023), and presented a higher CD4 cell count (p=0.028). CAs also had fewer hospital admissions and readmissions (p=0.005), shorter hospital stays (p=0.005), and lower hospital expenses (p=0.006). Consistent adherence is associated with better outcomes including improved quality of life, higher CD4 counts, and lower health care costs. This study showed similar outcomes among those patients who were linked to support groups; they adhered well to ART medication and had better clinical outcomes.

Psychosocial support groups have a tremendous role in task shifting of HIV services from the busy service providers themselves to the patients at the community. These has been shown to be a very effective strategy especially in the third world where there is shortage of health workers, according to a study conducted in Rwanda; Medical records of 1,076 patients enrolled in HIV care and treatment services from September 2005 to March 2008 were reviewed to assess compliance with national guidelines for ART eligibility and prescription, and patient monitoring and to assess key outcomes, such as retention, body weight, and CD4 cell count change at 6, 12, 18, and 24 months after ART initiation. Patient outcomes in the pilot program compared favorably with other ART cohorts in sub-Saharan Africa and with those from a recent evaluation of the national ART program in Rwanda. These findings suggested that community health workers and HIV support group leaders can effectively support patients on ART to adhere well and refer those who need further medical intervention, when given adequate training, mentoring, and support.
However several studies are needed to better understand the antecedents and correlates of adherence throughout the phases of treatment and disease. Adherence related factors are not expected to be similar across disease stages. Pre-ART interventions may, for example, address different mechanisms than interventions coincident with ART initiation and maintenance. Very different issues are likely to be important with individuals who have been on ART for years. For many, HIV disease has become more of a chronic condition and other lifestyle concerns may become more immediate and important (e.g. employment, medical care, day-to-day stressors, dyadic and sexual relationships, complacency about infectivity, drug and alcohol use). Poor adherence can compromise the effectiveness of treatment and result in increased morbidity and healthcare costs (Panos global AIDS program 2006). High antiretroviral therapy adherence has been shown to be a major predictor of HIV disease progression, survival and lower health care costs, according to researchers at the Johns Hopkins Bloomberg School of Public Health. Effects of antiretroviral therapy adherence on direct health care costs were measured and the outcome found to be improved health outcomes for people infected with HIV, saving a net overall median monthly health care cost of $85 per patient this is according to Jean B (2009) in their work “Association of antiretroviral therapy adherence and health care costs”. It has been proposed that HIV infected individuals in resource-limited areas will have lower levels of ART adherence than HIV-infected individuals in resource-rich areas, due to poor infrastructure and low level of education (WHO, 2005). One third of patients on stavudine, Lamivudine and Nevirapine (same regimens used as first line regimens in Kenya) in Tanzania HIV clinic experienced virologic
failure. Patients who were associated with lower risk of virologic failure reported to have disclosed their HIV status to either family members or a support group (possible indicator of benefits of social coping). According to a study by AMPATH, 2007; Low Baseline CD4 cell count and poor adherence predict early mortality in Kenya HAART Program. Only limited information has been available about the achievable level of antiretroviral adherence in resource-limited settings. Studies are needed to better understand the antecedents and correlates of adherence throughout the phases of treatment and disease. Adherence related factors are not expected to be similar across disease stages. Pre-ART interventions may, for example, address different mechanisms than interventions coincident with ART initiation and maintenance (Friedland, 2005). Very different issues are likely to be important with individuals who have been on ART for years. For many, HIV disease has become more of a chronic condition and other lifestyle concerns may become more immediate and important (e.g. employment, medical care, day-to-day stressors, dyadic and sexual relationships, complacency about infectivity, drug and alcohol use).

Understanding the effects and interactions of these and other behavioural, social, and environmental factors on an individual’s attitudes, beliefs, and motivations toward ART adherence will help in the development of improved interventions for ART adherence across the stages of HIV infection and disease (Heckathorn, 1990). In Nigeria, Oyeledun et al; found that the creation of partnership with local community organisation to support service delivery to clients through community support groups enhanced linkages between facilities and community. Most of these community partners provided psychosocial services to members through
education, clinic escorts among others. In another study by Wouters, (2005) showed that community HIV support groups initiatives significantly improved responses to ART among patients in Free State South Africa. The findings demonstrated that delayed ART initiation reduced ART effectiveness, where support from treatment buddies, community health workers, support group is significantly improved treatment outcomes.

With the availability of generic ART agents at a much lower cost, there has been an increased use of ART in developing countries. Moreover, the initial encouraging response seen with these drugs has prompted their wide use across the medical fraternity, at times without considering the serious consequences of mismanaged therapy. Hence it is prudent to consider lack of adherence to ART, which adversely affects the overall outcome. In Kenya, the concept of integrating psychosocial support groups into existing HIV care and treatment began as early as 1990 (Republic of Kenya 2003b). The idea came into play as a result of task shifting of roles from the clinicians to nurses and to the PLHAs, bringing some HIV services closer to patients. Staff Shortage and the overwhelming number of patients at the comprehensive care clinics has encouraged task shifting of some roles, for instance ART adherence counselling can now be done by the PLHAs themselves rather than by clinicians or nurses hence giving the latter time to perform other more clinical roles.

There are few comparable studies about medication adherence health behavior. Research on the characteristics of the health advocates and patients, their interpersonal relationships, and the role of those relationships in HAART
adherence would contribute greatly to an understanding of effective adherence intervention models for this population.

2.3 HIV support groups and comprehensive care management.

The HIV comprehensive care concept refers to the holistic approach towards the management of a person infected with HIV (Friedland, 2005). It brings a multi disciplinary team of clinicians, nurses, counsellors, pharmacists, nutritionist and PLHAs support in the management of each patient.

The comprehensive care team addresses the person’s wholesomeness in terms of body, mind and spirit (Robert, 2001). The model of HIV clinical service delivery through the public sector is based on the phased expansion of Comprehensive Care Clinic (CCCs) at national, provincial and district levels (National AIDS and STIs Control Program 2002b). Initial emphasis was placed on facilities at national and provincial levels and on selected high volume hospitals. Facilities were progressively selected on the basis of geographical coverage, HIV prevalence, and their state of preparedness to provide ART (NASCOP, 2005a). All CCCs should provide care and support services in accordance with approved Ministry of Health clinical and service delivery guidelines.

The minimum criteria for a HIV CCC according to Kenya’s Ministry of health and WHO includes; be an open access centre for patients and clients with HIV/AIDS, provide quick and accurate diagnostic services to patients with HIV/AIDS and related illness, provide a specialist HIV/AIDS clinic offering ARV drugs, provide nutritional counselling and psychosocial support, coordinate home-based care (HBC) services as part of the continuum of care for patients with HIV/AIDS.
attending both in and outpatient services, liaise with other services in the community providing non-medical care and support for PLHA (NASCOP, 2005b). Other African countries which have successfully implemented the CCC concept are South Africa and Namibia (Campbell, 2003). In South Africa the CCC model is similar to the Kenyan one; at the CCC the client is diagnosed for HIV infection through counselling and testing, the disease progression is measured so that proper care and treatment regimens can be implemented. It includes ongoing medical services to provide treatment for opportunistic infections associated with HIV and ultimately, when necessary, antiretroviral treatment to arrest the progression to AIDS, an extensive nutrition intervention, and programmes to integrate the provision of medical care with traditional methods of healing. A full range of community support services is contemplated, including counselling, adherence, support groups (www.info.gov.za/otherdocs/2003/aidsplan). Operational plan for comprehensive HIV/AIDS care, management and treatment for South Africa)

2.4 HIV Psychosocial support groups

HIV psychosocial support group are made up of PLHAs who have a common goal, the main goal of these support groups is to improve the health of its sick members and other crucial goal includes improving the livelihood of its members through income generating activities. (Oyeledun, 2007). Most of these support groups are started by patients enrolled at the HIV comprehensive care centres sometimes with the help of the health workers and the community health workers. The biggest challenge facing HIV patients has been stigma and discrimination at the community and sometimes in the health facilities where they go to seek for care and treatment (Green, 1996). The availability of ART and subsequent change
in perceptions of HIV and AIDS as a manageable chronic disease has led to a
decrease in stigma and discrimination in the industrialized world (Herek,
Capitano, & Widaman, 2002). The situation is different in countries in Africa
(UNAIDS, 2007) where ART has only recently become available to a large
number of people. In several recent studies, people living with HIV and AIDS
have still reported being stigmatized, because HIV is perceived as a signal of
immoral or deviant behavior (Greeff & Phetlhu, 2007; Katamba, 2005; Wolfe
2006). A recent qualitative study from Tanzania revealed that the national
antiretroviral scale-up led to an emergence of a new source of stigma that was
associated with ART provision (Roura, 2009).

An acute shortage of health care workers to deliver adherence and other
psychosocial counseling and with the situation more severe in rural areas, support
groups came in handy to arrest the situation. Several strategies have been utilised
to optimise adherence level at the support groups starting with eradicating stigma
related issues and ways of improving adherence, for example: self-efficacy
building, medication management skills, patient education and use of treatment
buddies (Ickovics, (2002); Nachega,. (2006); Remien,.2005; Safren,.2001; Samet.,
2005;). The availability of ART and subsequent change in perceptions of HIV and
AIDS as a manageable chronic disease has led to a decrease in stigma and
discrimination in the industrialised world (Herek, 2002). The situation is different
in countries in Africa (UNAIDS, 2007c) where ART has only recently become
available to a large number of people. In several recent studies, people living with
HIV and AIDS have still reported being stigmatised, because HIV is perceived as
a signal of immoral or deviant behaviour (Greeff 2007; Katamba., 2005; Wolfe,
2006). A recent qualitative study from Tanzania revealed that the national antiretroviral scale-up led to an emergence of a new source of stigma that was associated with ART provision (Roura, 2009). Psychosocial support groups help improve adherence counseling services in the health facilities and the community, thereby freeing clinical staff for other duties, and provide adherence follow-up including home visit. This agrees well with this study; patients linked to support groups got counseling from their peers on various issues affecting them including adherence. Psychosocial support groups are either facility based or community based. The facility based support groups were made up of patients enrolled at the comprehensive care clinic. HIV positive patients at the comprehensive care clinics were requested to join any support groups of their choice, which was voluntary. At the support group, the patients discussed their conditions freely to each other, barriers to adherence were discussed by each member and solutions offered. Some support groups run activities that helped to improve and uplifts members’ source of livelihood, such as income generating activities.
CHAPTER III: MATERIALS AND METHODS

3.1 Introduction
This chapter highlights study research design, the study variables, the study area, the study population, sampling techniques and sample size determination, construction of research instrument, data collection methods, ethical considerations and data analysis.

3.2 Study design.
The study design was a cross-sectional study design, which aimed at examining the influence of HIV psychosocial support groups on ART adherence and clinical outcomes. The study looked at those who were HIV positive and linked to support groups and those who were HIV positive and not linked to any support group. The exposure was defined by linkage to psychosocial support groups.

3.3 Variables
In this study the independent variables were defined by linkage to psychosocial support groups while the dependent variables were defined by adherence level and clinical outcomes of the patients enrolled at the CCC, linked or not linked to psychosocial support groups.

3.4 Study Area
The study was conducted at Kwale and Machakos district hospitals; these two hospitals have well-established HIV Comprehensive Care Clinics (CCC) and are unique in their own ways; Machakos district (absolute poverty level 59%) is more developed with better infrastructure compared to Kwale district (absolute poverty level 75%) and has a population of about 1.2 million people (National poverty
indicators survey, 2009). At Machakos district hospital; HIV positive patients from the VCT, outpatient and the wards are referred to the CCC which has a well established referral system between various unit/departments of care. This hospital has a well-established DTC (diagnostic testing and counselling services); which facilitates referrals of HIV positive patients from the wards and outpatients to the CCC. There are 12 psychosocial support groups in the district with one affiliated to the health facility and has 550 members. Kwale is one of the districts in coast province. The district has an area of 8960km square with an estimated projected population of 583,000persons. It borders Taita Taveta to the west, Kilifi district to the North West, Mombasa and Indian Ocean to the east and Republic of Tanzania to the south. Kwale district hospital on the other hand is in Coast Province, it has a well established CCC, which is four years old, there were 320 patients who were 15 years and above enrolled on HIV care and about 120 of them on ART and the rest on care, there were 60 active members in the facility affiliated psychosocial support group, the HIV prevalence was 7.3 % which is slightly above the national prevalence of 7.1 % (KAIS, 2007.) Sample size was determined using HIV prevalence rate for both districts which stands at 7.4% and 7.3 % respectively.

3.5 Inclusion Criteria

The following respondents were included in the study

i. Persons over 14 years old, who are able to give consent, or their guardians/parents consented for them and were of sound mind (not with a mental condition, not on alcohol or other abusive substances)
ii. All persons in the study were HIV positive and on care for over 6 months (enrolled at the CCC linked or not linked to a support group)

3.6 Sampling techniques and sample size

3.6.1 Sampling Techniques

Two study sites – Machakos and Kwale district hospitals were selected because of high HIV prevalence, they had the highest number of registered support groups in Coast and Eastern province respectively (DDO, 2008; NACC HIV/AIDs Annual Report, 2009). Patient’s records (CCC blue card) were put into two groups; those who were linked to support groups and those who were not. A disproportionate stratified sample was taken in order to get both the linked and the non linked patients. The MOH 257 Blue cards were arranged into two strata (men and women linked and none linked). A proportionate number representative of patients on care and treatment, men and women were selected randomly from each stratum.

3.6.2 Sample size Determination

The main objective of the sample size determination was to come up with a sample of respondents with required characteristic and was representative of the two district hospital’s CCC Patients population. Machakos district had a fairly high HIV/AIDS prevalence rate of 7.4 % (KAIS, 2007). There were 2500 HIV positive patients 15 years and above enrolled on care at the Machakos CCC and 944 out of 2580 were on ART, 1556 were on care (NASCOP Eastern province quarterly report 2007). To calculate the desired sample size; the stratified formula for population survey was used since the target population was less than 10,000 using Fischer et al. (1999) formula
\[ n = \left( \frac{Z^2 pq}{d^2} \right) \]

With the two HIV prevalences

\[ n = \frac{Z^2 \left( P_1 (1-P_1) + P_2 (1-P_2) \right)}{d^2} \]

Where,

\( n \) = the desired sample size

\( Z^2 \) = the standard normal deviate (1.96), it corresponds to 95% confidence interval

\( P \) = the prevalence of the target populations estimated at 7.4 \( (0.074) \) and 7.3 \( (0.073) \) respectively.

\( q_1 = 1 - 0.074 = 0.926 \) and \( q_2 = 1 - 0.073 = 0.927 \)

\( d^2 \) = degree of accuracy desired

\( P_1 \) = HIV prevalence in Machakos which is 7.4\%

\( P_2 \) = HIV prevalence in Kwale which is 7.3\%

\[ n = \frac{3.842 (0.069 + 0.0927)}{0.05^2} \]

\[ = 211 \]

Since the population of the patients within the study area is less than 10,000, then

the following formula was used to calculate the sample size.

\[ N_f = \frac{n}{1 + \frac{n}{N}} \]

Where:

- \( N_f \) is the desired sample size (when the population is less than 10,000)
- \( n \) is the desired sample size (when population is more than 10,000)
- \( N \) is the estimate of the population size
Therefore: \[ N_f = \frac{211}{1 + \frac{211}{2820}} \]
\[ = 196 \text{ Patients} \]

However, due to high dropout rates in the two districts, 244 more participants were recruited. Machakos and Kwale had 2500 and 320 patients enrolled on care at the CCC respectively. Machakos contributed: 88\% of 440 which was 388 and Kwale 12\% of 440 which was 53 patients

\[ \frac{2500}{2820} = 88\% \]

3.6.3 Break Down of Sample Size

There were 2500 HIV positive patients 15 years and above enrolled on care at the Machakos and 320 Patients at Kwale respectively; out of the 2500 patients in Machakos CCC, 1256 patients were linked to 12 different support groups affiliated to the hospital and 1234 were not linked. In Kwale 158 patients were linked to support groups and 162 not linked to any support. The sample size used for the study in the linked and non linked patients in Machakos was 194 and 194 respectively having factored the dropout rate of 18\%. In Kwale 31 patients were sampled from 158 patients linked to support groups and 31 patients from 162 non linked patients (see table 3-1 below).

Table 3-1: Breakdown of sample size

<table>
<thead>
<tr>
<th>District</th>
<th>Total</th>
<th>Linked Total</th>
<th>Not linked Total</th>
<th>Required Sample size (Drop out factored)</th>
<th>Required Sample size linked</th>
<th>Required Sample size not linked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machakos</td>
<td>2500</td>
<td>1266</td>
<td>1234</td>
<td>388</td>
<td>194</td>
<td>194</td>
</tr>
<tr>
<td>Kwale</td>
<td>320</td>
<td>158</td>
<td>162</td>
<td>63</td>
<td>31</td>
<td>31</td>
</tr>
</tbody>
</table>
The study used qualitative methods to gain local insight into potentially important psychosocial factors that affected ART adherence and clinical outcomes. The study interviewed five CCC in-charges and CCC clinicians in Machakos and Kwale respectively, a total of ten in charges and clinicians were interviewed. The study also interviewed five support group leaders in Machakos and Kwale districts respectively, a total of ten support group leaders and PLHIV representatives were targeted by the FGD. (See table 3-2 below)

<table>
<thead>
<tr>
<th>Qualitative method</th>
<th>Number of respondents</th>
<th>Total number of respondents Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGD</td>
<td>2(5) Psychosocial Group in Kwale and Machakos</td>
<td>10</td>
</tr>
<tr>
<td>Key Informants</td>
<td>2(5) CCC managers/In charges in Kwale and Machakos</td>
<td>10</td>
</tr>
</tbody>
</table>

3.7 Research Instruments and Data collection techniques

A structured questionnaire was administered to HIV positive patients enrolled on treatment and this was done on the clinic days. Linked and non linked Patients were interviewed. HIV positive patients 14 years of age and above from the two district hospitals were included in the study. Demographic, psychosocial and clinical descriptive statistics was generated for patients linked to support groups and those not linked. Retrospective investigations on patient’s records (MOH CCC 257 blue card) for both linked and not linked were conducted to investigate for adherence levels and clinical outcomes. Adherence issues analysed included defaulter rates, first line ARV failure. Socio-demographic information collected
from the respondents included, age, level of education, occupation, marital status and affiliation to support groups.

Actual process of data gathering in which research instruments were applied occurred between July and December 2009 with informants being either HIV positive patients enrolled at the CCC clinic within the last four years and active on care, treatment and support or HIV clinic in-charges. The study used both qualitative and quantitative data collection methods. Data was collected using pre-tested questionnaire, which was administered to each of the 440 selected randomly from a population of 2820 clients/patients on care. Other information such as demographics of the patients, period enrolled on care and subsequent hospital visit by the patients was collected from the MOH 257 CCC patient records at the HIV clinic. Informants were interviewed face to face using the structured questionnaire to collect information on their experience, challenges, benefits and clinical outcomes related to support groups. The semi-structured interview schedule was divided into seven sections (7) sections as follows:

- **Section A:** Collected the demographic information of the respondents mainly the gender, age, marital status, level of education
- **Section B:** Psychosocial information
- **Section C:** Service provider information
- **Section D:** Health and drug related information
- **Section E:** Socio-economic information
- **Section F:** Focus group discussion for psychosocial support group members
• **Section G:** Focus group discussion for CCC Key informants interviews (CCC managers and in-charges)

The instruments administered for collecting data from the field included semi-structured interview schedules (Appendix -5) with facility record review section, Key informants interview guides (Appendix-7) focus group discussion (FGD) guide (Appendix-6). Administration of these research instruments is described below:

**Semi-Structured Interview Schedule:** The tool had both open-ended and closed-ended questions and were administered by the research assistants at the health facility level to sampled persons who were HIV positive and on care and treatment within the last four years and were willing to participate in the study. At the end of each day the instruments were collected and checked by the principal researcher and research supervisor and feedback given to the research assistants the following mornings. In total, four hundred and fifty interviews were conducted although the calculated sample size for the two divisions was 440.

**Focus Group Discussions:** These were carefully planned discussions conducted by the principal researcher, research supervisor and one research assistants. The venues for the discussions were at the CCC offices. The discussions took up to one hour facilitated by three team members, where the principal researcher was the moderator in four group discussions. The two research assistants were note takers. The participants gave their contribution on issues, benefits and challenges concerning linkages and referrals of positive patients to psychosocial support groups, information generated were tape recorded and notes taken. The tool used
in qualitative data collection had a set of questions to help guide the interview and it was carried out by the principal researcher and research assistant one at a time among CCC in-charges and support group leaders at separate avenues for both in-charges and support group leaders. Those interviewed included the CCC in-charges, CCC clinicians and support group leaders in both Machakos and Kwale districts. The interviews were conducted in the CCC offices on appointments for the in-charges and on clinic days for PLHIVs support group leaders. A total of 4 key informant and FGDs interviews were conducted.

3.8 Pilot Study

To sharpen the study instruments and ensure their suitability, a pre-test was conducted in both facilities at the same time. To ensure data collected was reliable one representative of the hospital and one recruited research assistant who were not facility based were used. One day training was conducted for them to familiarise with the tools. A pre-test was conducted in both facilities at the same time; using MOH 257 blue cards, a stratified sample of 30 patients; men and women were picked from the four strata. The changes and recommendations from the pre-testing exercise were incorporated in the final main study tools. The researcher was responsible for day to day record of the study questionnaires. All the questionnaires were numbered and checked for completeness and accuracy at the end of each day.

3.9 Validity

To ensure that the results obtained by the research instruments reflected the situation under the study, the instruments were constructed as precise and clear as
possible to adequately cover the research objectives. Study tools had close-ended questions with a number of possible outcomes given and for the prediction on the existence of some outcomes; open ended questions were used to capture the information.

3.10 Reliability

To ensure that research instruments generated consistent results, probability sampling techniques were used, resulting in sample that was representative of the population as possible. Study tools were constructed with questions relevant to the study population. This was realised during the pre-test as the questions tended to yield similar answers. Research assistants were trained on the use of the tool.

3.11 Ethical Considerations

The study obtained an authorization to conduct research from Ministry of Education, Science and Technology and Kenyatta University. At the CCCs permission was sought from the in-charge and the patients themselves (see appendix 10). Oral or written request were sort from the informants. Written request to management enlightening on study intents and requesting participation was done. Information collected from patients was kept confidential at all time.

3.12 Data analysis

Data collection in the field was continuously supervised and quality controlled by the principal researcher. The raw data from the semi-structured interview schedules were coded, and then a file structure and database developed. Entries were carried out on EpiData 3.1 to ensure validity of the data; that is, its statistical procedures allow for creating of checks that ensures only legal entries are made.
For analysis, study data was exported to the statistical package for social sciences (SPSS) version 12.0. Using this statistical computer package; frequencies, cross tabulations, and histograms were produced. After running the frequencies, computer package referred to as Microsoft Excel was used to produce pie charts and bar graphs. The study sought to establish relationship between certain variables. The study used Pearson Chi-Square ($\chi^2$) test to establish relationship between independent and dependent variables. The qualitative data was generated from key informant interviews and FGDs and its analysis required qualitative data analysis methods; furthermore, its results were in form of texts. Summaries of the FGDs were made noting the key statements that were of help in determining whether new information was being generated. Transcription and conversion of audio data into a written format was done by the principal researcher, thematic analysis of the major concepts and themes were identified and linked to the study objectives and research questions. Altogether, the study provided statistical test of associations or significance whenever applicable and had fixed its level of significance at 0.05.
CHAPTER IV: STUDY RESULTS

4.1 Introduction

Organization of the chapter corresponds to study’s four specific objectives. Serially, it is: demographic details of the respondents, linkage of positive patients to psychosocial support groups and adherence levels to ART, activities conducted by support groups to improve adherence and clinical outcomes, psychosocial factors that promotes adherence and enhance clinical outcomes among PLHIVS, comparison of adherence levels and clinical outcomes between rural and urban psychosocial support groups.

4.2 Demographic and socioeconomic characteristics

4.2.1 Demographic Characteristics

Demographic characteristics of the study included: age distribution, marital status, gender and religion.

The study data showed that majority of respondents were below 40 years; that is, belonging to the age categories of 30yrs – 39yrs 167(37%) and 40 yrs – 49 yrs 128(29%). In contrast, least proportion of respondents was in the age category of 20 years and below 66(15%). The study results also indicated that married couples are more affected than single individuals ( 60% and 44% in Kwale and Machakos respectively), this agrees well with the KDHS 2003 survey and the KAIS 2007; which showed that married couples are at greater risk of contracting HIV compared to the unmarried individuals.
Table 4-1 Demographic and Socio-Economic Characteristics of the Respondents

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Kwale</th>
<th>Machakos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>&lt;20</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>20-29</td>
<td>10</td>
<td>15.9%</td>
</tr>
<tr>
<td>30-39</td>
<td>23</td>
<td>36.5%</td>
</tr>
<tr>
<td>40-49</td>
<td>17</td>
<td>27.0%</td>
</tr>
<tr>
<td>50+</td>
<td>13</td>
<td>20.6%</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
<td>3.2%</td>
</tr>
<tr>
<td>Married</td>
<td>38</td>
<td>60.3%</td>
</tr>
<tr>
<td>Divorced</td>
<td>9</td>
<td>14.3%</td>
</tr>
<tr>
<td>Widow/er</td>
<td>14</td>
<td>22.2%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23</td>
<td>36.5%</td>
</tr>
<tr>
<td>Female</td>
<td>40</td>
<td>63.5%</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100.0%</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muslim</td>
<td>45</td>
<td>71.4%</td>
</tr>
<tr>
<td>Catholic</td>
<td>3</td>
<td>4.8%</td>
</tr>
<tr>
<td>Protestant</td>
<td>14</td>
<td>22.2%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.6%</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>16</td>
<td>25.4%</td>
</tr>
<tr>
<td>Primary</td>
<td>22</td>
<td>34.9%</td>
</tr>
<tr>
<td>Secondary</td>
<td>25</td>
<td>39.7%</td>
</tr>
<tr>
<td>Tertiary/college/university</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Servant</td>
<td>8</td>
<td>13.6%</td>
</tr>
<tr>
<td>Privately employed</td>
<td>10</td>
<td>16.9%</td>
</tr>
<tr>
<td>Business</td>
<td>13</td>
<td>22.0%</td>
</tr>
<tr>
<td>Petty Trading</td>
<td>12</td>
<td>20.3%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>16</td>
<td>27.1%</td>
</tr>
</tbody>
</table>
4.2.1.1 Age Distribution

The study had divided age of respondents into five categories.

![Age Distribution Graph](image)

**Figure 4-1: Age distribution of the respondents**

Given that chief mode of transmission of local HIV epidemic is heterosexual contact, the youths are at heightened risk of infection. For example, 70% of the 200,000 new infections in Kenya in 1998 were young people aged between 15 – 39 years (Republic of Kenya, 2002a). Also, it is the youths that are dying off more. In countries where HIV prevalence is 10% in adult population, almost 80% of deaths in young adults aged 25 – 49 years will be associated with HIV (UNAIDS, 2003).

4.2.1.2 Marital Status

Figure 4-2 below summarises the distribution of respondents according to marital status across two study sites. Types of marriage of respondents were categorized as: single, married, divorced and widowed (see, figure 4-2 below). Study data showed that the largest proportion of respondents in Kwale District 38(60.3%) and 166 (45.5%) in Machakos were married.
From the data, most respondents were female 40(64%) in Kwale and 235 (64%) in Machakos (See, figure 4-3 below). This is consistent with national population of Kenya where women exceed men, with life expectancy of women being 57 years and that of men being 54 years (Republic of Kenya, 2003c). Women constitute 58% of those infected with HIV in sub-Saharan Africa (UNAIDS, 2007). And adolescent girls are three to four times more likely to be infected than boys. Women are not just extremely vulnerable to HIV; they are also overburdened by it. For example, they care for the sick and dying (Leserman et al., 1996; McGrath et al., 1996). Culturally, women suffer from a lack of empowerment in their relationships that prevents them from negotiating safer sex with partner (Body, 2009; Odiwuor, 2000). But more notably, numbers of widows was high 90(21%).
4.2.1.4 Religion

The study looked into religion of respondents; this included subsets of Christianity such as Catholicism, and Protestantism. Data indicated that most respondents in Kwale District were Muslims 45(71.4%) while in Machakos over 80% of the respondents were Christians. (see table 4-4 below)
4.2.2 Socioeconomic Characteristics

The socioeconomic characteristics of the study were: education and occupation

4.2.2.1 Level of Education

From data, it emerged that most respondents either had reached primary education 139(32%), secondary education158 (38%), tertiary/college education 46 (12.7%) and 81(19%) had no formal education (see figure 4-5). Machakos district had more respondents with tertiary education compared to Kwale district. This may be attributed to the fact that the study was conducted in a rural and peri-urban settings where many of those with higher than secondary education would normally migrate to a slightly urbanised town like Machakos to engage in formal employment or are still pursuing higher education, while those with lower than secondary education are likely to remain in rural settings to engage in the informal employment that does not require special skills or education. Also, it is 58% of Kenyans that have completed primary level education (Republic of Kenya, 2003c). Literacy and educational levels impacts on HIV and AIDS including prevention, treatment and care, and lessening of impacts (Republic of Kenya, 2003d).

Hypothesis 2 of study corresponded with objective 4 and pertained to relationship between socioeconomic characteristics and adherence level and clinical outcomes.
4.2.2.2 Occupation

The study found that 221 (52%) of respondents in Machakos and Kwale were in informal employment such as: subsistence farming, poultry keeping, petty trading and other micro-entrepreneurship ventures, 103 (24%) were unemployed and 55 (13%) were in formal employment. (See, Figure 4-6 below). Formal employment was mainly teachers deployed to the local public primary and secondary schools and government offices at the district head quarter. This is attributable to lack of formal employment opportunities in rural areas of Kenya. At Machakos 5% of the patients at the CCC were coming from Nairobi County. In the country, 69% of the working population aged 15-64 years is self-employed irrespective of location (rural and urban).
The GDP of Kenya (over 50%) is contributed by industries operating at the nation’s capital – Nairobi (Republic of Kenya 2003a). 14% of the respondents in Machakos and 12% of respondents in Kwale reported having lost their jobs immediately after disclosing their HIV positive status to their employers.

### 4.3 Linkage to psychosocial support groups

In terms of linkage status of the respondent across the two study sites, study data showed that 31(49.2%) and 210 (54.5%) of the respondents in Kwale and Machakos respectively were linked to psychosocial support group (see table 4-2 below). The study presented the effects of linking HIV positive patients to psychosocial support groups as: improved morbidity by patients/clients enrolled at the support groups and improved ART adherence level among patients linked to support groups.
Table 4.2 Linkages to psychosocial support groups

<table>
<thead>
<tr>
<th>Client Type</th>
<th>Kwale</th>
<th>Machakos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linked to psychosocial support group</td>
<td>31 49.2%</td>
<td>210 54.5%</td>
</tr>
<tr>
<td>Not linked to psychosocial support group</td>
<td>32 50.8%</td>
<td>178 45.5%</td>
</tr>
<tr>
<td>Total</td>
<td>63 100.0%</td>
<td>388 100.0%</td>
</tr>
</tbody>
</table>

4.4.1 Clinical outcomes and adherence levels in patients at the Support Group

Weight loss is a frequent symptom in HIV infection. Severe weight loss of >10% of body weight due to HIV infection itself is a common condition in HIV infection, which is used as a diagnostic criterion in the classification of HIV disease Centers for Disease Control (1993). The clinical outcomes investigated in the study included weight gain, new and relapse of opportunistic infections six months later after the initiation of ART and the quality of life using Karnofsky score, the Karnofsky Performance scale is an assessment tool used to assist clinicians and caretakers in measuring a patient's ability to carry out activities of daily living. It is important to assess a patient's performance on a regular basis, especially as the effects of HIV progress. In this study clinical outcomes and immunological response were captured from the MOH 257 patient card which the clinicians record patient progress either through actual diagnosis or laboratory investigations. The FGD and key informant interviews revealed that linked patients had better Karnofsky scores compared to those who were not, they were able to perform daily tasks and chores with little support compares to the non linked patients (“most of the patients in our support groups are able to perform daily chores without difficulty compared to those patients not linked”....Support
group leaders in Kwale). The results in the table 4-3 below shows that linked patients had significantly higher weight gain than non-linked patients after two years of being on treatment and linked to the support group (t=2.170, p-value=0.031, df=208). Further analysis revealed that this difference was observable only in Machakos district.

Table 4-3 Comparing Body Weights for the linked and Non-linked patients

<table>
<thead>
<tr>
<th>Client Type</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>T</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body weight kg(6 months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>210</td>
<td>60.81</td>
<td>12.046</td>
<td>-0.561</td>
<td>0.575</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>178</td>
<td>61.45</td>
<td>11.348</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body weight kg(1 year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>210</td>
<td>61.72</td>
<td>10.919</td>
<td>1.151</td>
<td>0.251</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>178</td>
<td>60.42</td>
<td>10.694</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body weight kg(16 months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>210</td>
<td>63.98</td>
<td>11.123</td>
<td>1.845</td>
<td>0.066</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>178</td>
<td>61.58</td>
<td>10.668</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body weight kg(2 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>210</td>
<td>65.62</td>
<td>12.017</td>
<td>2.170</td>
<td>0.031</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>178</td>
<td>62.46</td>
<td>9.452</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.1.1 Opportunistic Infections between linked / Non-linked patients

The major cause of morbidity and mortality amongst the PLHIV are the opportunistic infections. Lower incidence of opportunistic infections and relapse
of previous infections among the linked patients was an indication of improved immune functions hence higher levels of CD4 cells. Immunological indicators investigated included CD4 levels. The study results showed that in Machakos district, patients linked to psychosocial groups had significantly higher mean CD4 counts than non-linked patients indicating improved immune functions hence higher levels of CD4 cells (t=2.1, and 2.28, after one year and 16months respectively). This difference was not observed in Kwale district. Patients linked to psychosocial support groups had lower incidence of opportunistic infections compared to non-linked PLHIV group.

Table 4-4 Opportunistic Infections between linked / Non-linked patients

<table>
<thead>
<tr>
<th>Client Type</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New OIS (6 months)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>210</td>
<td>1.60</td>
<td>-0.307</td>
<td>0.759</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>178</td>
<td>1.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New OIS (1 year)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>210</td>
<td>0.87</td>
<td>-2.928</td>
<td>0.004*</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>178</td>
<td>1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New OIS (16 months)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>103</td>
<td>0.33</td>
<td>-6.615</td>
<td>0.000*</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>104</td>
<td>1.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New OIS (2 years)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to psychological support</td>
<td>93</td>
<td>0.05</td>
<td>11.900</td>
<td>0.000*</td>
</tr>
<tr>
<td>Not linked to psychological support</td>
<td>63</td>
<td>1.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 5% level of significance.
4.4.1.2 HIV and other medical issues discussed at the support group

Linked patients on ART reported discussing ART side effects and how to deal with these side effects, and also how to deal with poor adherence. The study results showed that linked patients freely discussed various medical issues affecting them during their regular meetings, issues emerging were discussed at greater lengths and solutions offered through referrals and appropriate linkages (see table 4-5 below).

Table 4-5 HIV and other medical issues discussed at the support group

<table>
<thead>
<tr>
<th>HIV/Medical issues discussed</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Machakos</td>
<td>Kwale</td>
</tr>
<tr>
<td>Issues related to HIV disease</td>
<td>182</td>
<td>27</td>
</tr>
<tr>
<td>Issues related to care and treatment</td>
<td>161</td>
<td>27</td>
</tr>
<tr>
<td>Issues related to referrals and other supportive services</td>
<td>105</td>
<td>16</td>
</tr>
<tr>
<td>Drug side effects and their management</td>
<td>172</td>
<td>29</td>
</tr>
</tbody>
</table>
4.4.2 ART Adherence levels and Support Groups

The study investigated adherence level among the linked and none linked patients/PLHIV. Support groups in Kwale and Machakos consisted of HIV positive members who came up with one common goal; to improve the health status of its members through various activities. ART medication is lifelong and requires commitment and dedication, before a patient is put on ART; adherence counselling is done to these patients at the CCC. Patients who preferred to be linked had additional advantage when it came to adherence; at the support group patients discussed their medical condition as shown by this study. Data showed that linked patients had Statistically significantly better ART adherence in the last six months compared to non-linked patients (Chi-square=58.3; df= 2;P=0.000).

See table 4-6 below

<table>
<thead>
<tr>
<th>District</th>
<th>Linked to a Support Group</th>
<th>Adherence Level in the last 6 months</th>
<th>Total</th>
<th>Chi-square</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machakos and Kwale</td>
<td>Linked</td>
<td>N</td>
<td>117</td>
<td>103</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>51%</td>
<td>47%</td>
<td>2.1%</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>N</td>
<td>24</td>
<td>100</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>14%</td>
<td>47%</td>
<td>39%</td>
</tr>
</tbody>
</table>

4.4.2.1 Challenges encountered when starting ARVs

The study outcomes revealed that patients had some form of challenges when it came to taking their ARVs. 225(78%) of the patients experienced common ARVs side effects (Nausea, Vomiting and diarrhea) also known as classical ARV side effects. 57(26%) of the patients experienced a serious form of side effects
(difficulty in walking and numbness) also known as peripheral neuropathy, which is a life threatening condition that requires the attention of the medical service provider to intervene.

Table 4-7 Challenges encountered when starting ARVs

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea, Vomiting and diarrhoea</td>
<td>225</td>
<td>77.8%</td>
</tr>
<tr>
<td>Difficulty in walking</td>
<td>57</td>
<td>25.7%</td>
</tr>
<tr>
<td>Forgetfulness, and not taking medication on time</td>
<td>111</td>
<td>50.0%</td>
</tr>
<tr>
<td>The pill burden was too much</td>
<td>93</td>
<td>41.9%</td>
</tr>
</tbody>
</table>

4.4.3 Defaulting ARV medication in the last six months

The study showed that a large proportion of non-linked respondent in both districts had defaulted ARV medication in the last six months compared to the linked respondent (table. 4-8). Less than 5% of the linked patients in both districts have defaulted ART. Defaulting ART medication in most cases would result to ART failure; this would eventually lead to failing treatment. Failing treatment especially the first line ART calls for a switch to a more efficacious treatment, hence second line ARV treatment. This is very expensive and requires the patient to undergo several tests to warrant the switch and to closely monitor the patient to avoid further failures. From FGDs, linked patients had better ART adherence; this was achieved through various innovative approaches to minimize defaulting medication ("we look at each patient individually and see how they are fairing on with their ART medication, if we find that they are challenged or having some
forms of difficulties in taking their medications, we advice them and use our own success stories to motivate them to hang on the treatment”...FGD discussion with support group leaders in Machakos). FGDs confirmed that good adherence is achieved through various ways.

Failing first line ARVs is manifested by frequent illness and dropping CD4 levels six months after the initiation of ART. According to FGDs and key informants interviews, linked patients had better ART adherence levels; this was achieved through various innovative approaches to minimize defaulting medication (” as HIV service providers we have helped patients in support group form a communication channel through which they discuss how to adhere to ART, we have even supported them to form a referral system for those patients having difficulty in adhering to their medication this is only possible in patients linked in support groups”....Machakos district hospital HIV service provider).

Table 4-8 has the patient failed first line ARV?

<table>
<thead>
<tr>
<th>District</th>
<th>Linked to Support Groups</th>
<th>n</th>
<th>% Yes</th>
<th>Chi-square</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwale</td>
<td>Linked</td>
<td>31</td>
<td>3.2%</td>
<td>8.74</td>
<td>0.003*</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>32</td>
<td>32.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machakos</td>
<td>Linked</td>
<td>194</td>
<td>1.6%</td>
<td>40.15</td>
<td>0.000*</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>194</td>
<td>23.6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Because of higher defaulter rates amongst the non linked patients, the result was many of them failing first line ARVs, (Chi square 8.74, p= 0.003 and Chi square 40.17, P= 0.000) respectively for Kwale and Machakos respectively compared to the linked patients in Kwale and Machakos.
4.4.4 ART Adherence support provided at the group meetings

To ensure that linked patients adhered to their ART medication, support groups had several sessions to advice and counsel their members on the importance of taking their medication on time and as prescribed by their healthcare worker. Many of the participants interviewed mentioned that they had sessions and talks on how to cope with drug side effects, adherence and further referrals to a professional counsellor on complicated cases that could not be handled at the support group level. See table 4-9 below

<table>
<thead>
<tr>
<th>Psychosocial Support</th>
<th>Frequency (n=225)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group counseling on how to cope with drug side effects</td>
<td>159</td>
<td>70.6%</td>
</tr>
<tr>
<td>Given lessons and tips on how to adhere correctly to ART medication</td>
<td>143</td>
<td>63.5%</td>
</tr>
<tr>
<td>Facilitated referrals to other services such as professional counseling</td>
<td>75</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

4.5 Support Group Activities

The study results revealed that majority of the support group-linked respondents participated in many activities, these included care and support, psychosocial activities, income generating activities among others. The support group meetings were held once a week, twice a week or once a month, see table 4-10 below. FGD and Key informants data showed that majority of the support group members participated in a wide range of activities that boosted adherence and clinical outcomes, these included care and support activities, income generating activities among others. One of the major reasons for joining up and staying put in a support
group was financial support and development of self. The FGD revealed that linked patients mentioned money as the biggest motivator to joining a support group. Other chief reason for joining a support groups was to get psychosocial support in times of need; this possibly reflects the increased need for counselling services for the members. The study data showed that respondents in Kwale and Machakos met either once a week or twice a week or once a month. The venues were either at the CCC, baraza venues, churches or community social halls. Key informants interviews and FGDs confirmed that PLHIV got additional psychosocial support at the support groups through group counselling on various issues related to HIV disease.

Table 4-10 Frequency of support group meetings

<table>
<thead>
<tr>
<th></th>
<th>Kwale</th>
<th>Machakos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Once a week</td>
<td>20</td>
<td>65.5%</td>
</tr>
<tr>
<td>Twice a week</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Once a month</td>
<td>11</td>
<td>34.5%</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

4.5.1 Income generating activities

A large proportion of linked respondents (68% and 72% in Kwale and Machakos respectively) participated in income generating activities. Most of these support groups in two districts had income generating activities, this imply community’s recognition of need to improve own welfare and then gearing into action. Krantz and staugard (1996) observed that in Uganda, community based groups were actively involved in health related activities on a voluntary basis in the village or
in local community including care and social support to persons with AIDs and their families. In both districts linked patients were involved in income generating activities (68% in Kwale and 72% in Machakos) compared to non linked patients (32% and 28% in Kwale and Machakos respectively). See table 4-11 below

Table 4-11 Linked respondents and income generating activities in support groups

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>Kwale</th>
<th>Machakos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>21</td>
<td>67.7%</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>32.3%</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

4.5.1.1 Benefits of Income Generating Activities to PLHIV

When asked the benefits they derive from the income generating activities, most respondents (93.2%) said they get money to buy drugs and foods. Income generating activities also brought members closer and in the process they discussed their health conditions. They also got money to support their families and bus fares to go to CCCs for further medication attention.

Table 4-12 Benefits of income generating activities

<table>
<thead>
<tr>
<th></th>
<th>Frequency (n=225)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I get money to buy drugs</td>
<td>150</td>
<td>66.6%</td>
</tr>
<tr>
<td>These activities brings members close and we discuss our health</td>
<td>147</td>
<td>65.3%</td>
</tr>
<tr>
<td>I get money to buy food so that I don’t take ARVs on an empty stomach</td>
<td>123</td>
<td>54.7%</td>
</tr>
</tbody>
</table>
4.5.2 Psychosocial support

Psychosocial support addresses the ongoing psychological and social problems of HIV infected individuals, their partners, families and caregivers (WHO, 2008). HIV infection often can result in stigma and fear for those living with the infection, as well as for those caring for them, and may affect the entire family. Infection often results in loss of socio-economic status as shown by this study; employment and income generation loss were the first setbacks that the positive individuals encountered. The study looked into types of psychosocial support provided to its members. It identified various forms of psychosocial supports as shown in table 4-13 below:

Table 4-13 Types of psychosocial support services provided in support groups

<table>
<thead>
<tr>
<th>Types of psychosocial support provided</th>
<th></th>
<th></th>
<th>Machakos</th>
<th>Kwale</th>
<th>Machakos</th>
<th>Kwale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group counselling on how to cope with the disease</td>
<td>186</td>
<td>27</td>
<td>96%</td>
<td>88%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shown how to deal with stigma and discrimination</td>
<td>178</td>
<td>30</td>
<td>87%</td>
<td>92%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offered referrals to other HIV related services such as legal, spiritual among others</td>
<td>86</td>
<td>16</td>
<td>44%</td>
<td>51%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assisted HIV disclosure to spouse family members</td>
<td>88</td>
<td>8</td>
<td>45%</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Given lessons and tips on how to adhere correctly to ART medication</td>
<td>153</td>
<td>23</td>
<td>78.5%</td>
<td>74%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.5.3 HIV services offered at the support group

From the study findings on whether there were additional or extended HIV services offered at the support groups, it emerged that 7% and 31% of the respondents in Kwale and Machakos respectively received Family planning services at the support groups (mainly condoms and FP counselling). In Kwale 7% of the respondents and 61% of the respondents in Machakos were receiving nutritional support. Counselling services was offered 100% in all the support groups in Kwale and Machakos. Its only in Machakos where 63% of the respondents said that they received curative services (this was mainly provision of clotrimaxazole antibiotics through the Community Health worker who were PLHIV).

Table 4-14 other extended HIV services offered at the support group

<table>
<thead>
<tr>
<th>Services</th>
<th>Kwale Frequency</th>
<th>%</th>
<th>Machakos Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP</td>
<td>2</td>
<td>6.5%</td>
<td>55</td>
<td>30.6%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>2</td>
<td>6.5%</td>
<td>110</td>
<td>61.1%</td>
</tr>
<tr>
<td>Counselling</td>
<td>31</td>
<td>100.0%</td>
<td>180</td>
<td>100.0%</td>
</tr>
<tr>
<td>Curative services</td>
<td>0</td>
<td>0.0%</td>
<td>63</td>
<td>35.0%</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100.%</td>
<td>180</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

4.6 Psychosocial Challenges and HIV Positive Patients in both districts

People living with HIV faced numerous challenges in the two study sites. Most these challenges were psychosocial, clinical and socioeconomic in nature.
4.6.1 Patients who found it challenging to accept HIV status

The study identified that most of the patients enrolled in the two districts experienced psychosocial challenges right from the time they are tested and confirmed to be HIV positive. 73% of the patients in both health facilities found it challenging to accept their HIV status after being tested (see figure 4-7 below), some refused to disclose their HIV positive status, while others experienced stigma and discrimination after testing positive (see figure 4-7 and table 4-15 below)

![Figure 4-7% of patients who found it challenging to accept HIV status](image)

4.6.2 Learning about HIV status

The study found that most of the respondents experienced various issues after learning about their HIV status. The issues ranged from loss of employment to the feeling of death (see table 4-15 below)

<table>
<thead>
<tr>
<th>Table 4-15 what came into mind after learning about HIV status?</th>
<th>Frequency (n=451)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling of death</td>
<td>349</td>
<td>77.4%</td>
</tr>
<tr>
<td>Discrimination and stigma</td>
<td>236</td>
<td>52.3%</td>
</tr>
<tr>
<td>Emaciated and sickly person</td>
<td>158</td>
<td>35.7%</td>
</tr>
</tbody>
</table>
Loss of employment  86  19.1%  
Cursed and punished  139  30.8%  

### 4.6.3 When tested and confirmed to be HIV+

Regarding when tested and confirmed to be HIV positive by district 69.6 % (270) of the respondents tested over 13 months ago (See, table 4-16 and Figure 4-8 below). Most of the patients tested positive within the last one to two years (54% in Kwale and 29% in Machakos)

#### Table 4-16 when tested and confirmed to be HIV positive by District

<table>
<thead>
<tr>
<th></th>
<th>Kwale</th>
<th></th>
<th>Machakos</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1-6 months</td>
<td>0</td>
<td>0%</td>
<td>51</td>
<td>13.4%</td>
</tr>
<tr>
<td>7-12 months</td>
<td>13</td>
<td>20.6%</td>
<td>67</td>
<td>17.0%</td>
</tr>
<tr>
<td>13-24 months</td>
<td>34</td>
<td>54.0%</td>
<td>109</td>
<td>28.5%</td>
</tr>
<tr>
<td>25-36 months</td>
<td>12</td>
<td>19.0%</td>
<td>63</td>
<td>15.3%</td>
</tr>
<tr>
<td>over 37 months</td>
<td>4</td>
<td>6.3%</td>
<td>98</td>
<td>25.8%</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100.0%</td>
<td>388</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

#### Figure 4-8 when tested and confirmed to be HIV+

### 4.6.3 Those who were challenged to pass the information about HIV status

From the data, 36.7% of the respondents in Kwale and 67% of the respondents in Machakos found it challenging initially to pass information on their new
HIV status to friends, relatives, spouses etc. See table 4-17 and figure 4-9 below

### Table 4-17 Those who were challenged to pass the information about HIV status

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>Kwale</th>
<th>Machakos</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>22</td>
<td>36.7%</td>
<td>225</td>
</tr>
<tr>
<td>No</td>
<td>35</td>
<td>58.3%</td>
<td>103</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>5.0%</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100.0%</td>
<td>332</td>
</tr>
</tbody>
</table>

**4.6.4. Was it a challenge for those you told to accept you**

At Kwale and Machakos 28% and 57% of the patients found it challenging to pass information about their HIV status. This is the cohort of patients that really needed a psychosocial support on how to integrate with other people at the community.

### Figure 4-9 % of patients who found it challenging to pass HIV information

**4.6.5. Was it a challenge for those you told to accept you**

From these study findings it emerged that most of those who turned positive; the community did not expect them to have acquired the disease. (89% in Kwale and 91% in Machakos), this meant that these patients were still going to experience
stigma and discrimination from the society. Among the things discussed in the support group was how to deal with societal rejection and how to deal with stigma and discrimination. This made PLHIVs linked to support groups integrates well in the community.

a). If yes, Why?

Table 4-18 Types of Challenges encountered from other people in revealing HIV status

<table>
<thead>
<tr>
<th>District</th>
<th>Types of Challenges</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwale</td>
<td>They didn’t expect it from me</td>
<td>16</td>
<td>88.9%</td>
</tr>
<tr>
<td></td>
<td>They thought I was a bad example to the community</td>
<td>12</td>
<td>66.7%</td>
</tr>
<tr>
<td></td>
<td>They thought I was going to spread the disease to them</td>
<td>4</td>
<td>22.2%</td>
</tr>
<tr>
<td>Machakos</td>
<td>They didn’t expect it from me</td>
<td>172</td>
<td>90.5%</td>
</tr>
<tr>
<td></td>
<td>They thought I was a bad example to the community</td>
<td>103</td>
<td>54.2%</td>
</tr>
<tr>
<td></td>
<td>They thought I was going to spread the disease to them</td>
<td>69</td>
<td>36.3%</td>
</tr>
</tbody>
</table>

b). If no, why

Table 4-19 Types of Challenges encountered from other people in revealing HIV status

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>Types of Challenges</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwale</td>
<td>Most of them knew about HIV/AIDs disease and that its manageable</td>
<td>34</td>
<td>82.9%</td>
</tr>
<tr>
<td></td>
<td>They were my close relatives hence very understanding of my condition</td>
<td>35</td>
<td>85.4%</td>
</tr>
<tr>
<td></td>
<td>They were christians/muslims who believed in giving support to those in need</td>
<td>14</td>
<td>34.1%</td>
</tr>
<tr>
<td>Machakos</td>
<td>Most of them knew about HIV/AIDs disease and that its manageable</td>
<td>119</td>
<td>89.5%</td>
</tr>
<tr>
<td></td>
<td>They were my close relatives hence very understanding of my condition</td>
<td>98</td>
<td>73.7%</td>
</tr>
<tr>
<td></td>
<td>They were Christians/Muslims who believed in giving support to those in need</td>
<td>29</td>
<td>21.8%</td>
</tr>
</tbody>
</table>
In sites where the patients reported to have not received challenges in telling their HIV status, the patients reported that the people they disclosed their HIV status to knew about HIV/AIDS disease and that the disease is manageable and no patient should be stigmatized or discriminated against.

4.6.6. Currently using ARVs by District

Table 4-20 currently using ARVs by District

<table>
<thead>
<tr>
<th>District</th>
<th>Linked to Support Group</th>
<th>Freq</th>
<th>%</th>
<th>Chi-square</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwale</td>
<td>Linked</td>
<td>31</td>
<td>96.8%</td>
<td>0.318</td>
<td>0.573</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>32</td>
<td>93.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machakos</td>
<td>Linked</td>
<td>197</td>
<td>91.9%</td>
<td>18.304</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>163</td>
<td>75.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Linked</td>
<td>228</td>
<td>92.5%</td>
<td>17.366</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>195</td>
<td>78.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.6.7. Currently using ARVs by Demographic detail

Table 4-21 currently using ARVs by Demographic detail

<table>
<thead>
<tr>
<th>Demographic Detail</th>
<th>Linked to Support Group</th>
<th>Freq</th>
<th>%</th>
<th>Chi-square</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Linked</td>
<td>74</td>
<td>59.7%</td>
<td>11.035</td>
<td>.001*</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>50</td>
<td>40.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Linked</td>
<td>137</td>
<td>57.1%</td>
<td>6.817</td>
<td>.009*</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>103</td>
<td>42.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>Linked</td>
<td>2</td>
<td>66.7%</td>
<td>4.444</td>
<td>.035*</td>
</tr>
<tr>
<td></td>
<td>Not Linked</td>
<td>1</td>
<td>33.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>Linked</td>
<td>20</td>
<td>43.5%</td>
<td>6.790</td>
<td>.009*</td>
</tr>
<tr>
<td></td>
<td>Not Linked</td>
<td>26</td>
<td>56.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>Linked</td>
<td>81</td>
<td>62.8%</td>
<td>6.189</td>
<td>.013*</td>
</tr>
<tr>
<td></td>
<td>Not Linked</td>
<td>48</td>
<td>37.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>Linked</td>
<td>70</td>
<td>58.8%</td>
<td>.240</td>
<td>.624</td>
</tr>
<tr>
<td></td>
<td>Not Linked</td>
<td>49</td>
<td>41.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50+</td>
<td>Linked</td>
<td>34</td>
<td>54.8%</td>
<td>.620</td>
<td>.431</td>
</tr>
<tr>
<td></td>
<td>Not Linked</td>
<td>28</td>
<td>45.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linked</td>
<td>36</td>
<td>60.0%</td>
<td>18.792</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Not Linked</td>
<td>24</td>
<td>40.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the study results, it emerged that 58% of the linked patients male and Female were on ARVs compared to non linked patients (42%). This clearly demonstrated that joining a support group encouraged and prepared the patients to begin ART treatment regimen. This was significant in Machakos district (chi-square 18.304 and P= 0.0000).

### 4.6.8 Duration of being on ARVs

#### Table 4-22 Duration of being on ARVs

<table>
<thead>
<tr>
<th>District</th>
<th>Client Type</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwale</td>
<td>Linked</td>
<td>30</td>
<td>1.606</td>
<td>1.5091</td>
<td>.2755</td>
<td>1.221</td>
<td>0.227</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>29</td>
<td>1.230</td>
<td>.6946</td>
<td>.1290</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machakos</td>
<td>Linked</td>
<td>182</td>
<td>2.268</td>
<td>1.3825</td>
<td>.1025</td>
<td>5.904</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>125</td>
<td>1.410</td>
<td>1.0308</td>
<td>.0922</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Linked</td>
<td>212</td>
<td>2.175</td>
<td>1.4164</td>
<td>.0973</td>
<td>6.030</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>154</td>
<td>1.376</td>
<td>.9770</td>
<td>.0787</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The study results showed that linked patients stayed longer on ART treatment compared to non linked patients who either defaulted treatment or commenced treatment late than expected according to the national ART treatment guidelines.

**4.6.9 Reasons that prompted you to take ARVS**

73.2% of the patients on ARVs sited that low CD4 levels prompted the clinician to commence them on ART treatment, while 59.2% sited that frequent illness from the opportunistic infections was the cause of starting ART treatment.

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency (n=336)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low CD4 levels</td>
<td>246</td>
<td>73.2%</td>
</tr>
<tr>
<td>Frequent illness with many opportunistic infections</td>
<td>199</td>
<td>59.2%</td>
</tr>
<tr>
<td>Loss of body weight</td>
<td>138</td>
<td>41.1%</td>
</tr>
</tbody>
</table>

**4.6.10. Encountered challenges when taking ARVs**

70% of the linked and non linked patients found it challenging to take ARVs initially or at the early stages of treatment.

<table>
<thead>
<tr>
<th>District</th>
<th>Linked to Support Group</th>
<th>N</th>
<th>%</th>
<th>Chi-square</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwale</td>
<td>Linked</td>
<td>30</td>
<td>80.0%</td>
<td>0.800</td>
<td>0.371</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>30</td>
<td>70.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machakos</td>
<td>Linked</td>
<td>183</td>
<td>73.2%</td>
<td>9.852</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>125</td>
<td>56.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Linked</td>
<td>213</td>
<td>74.2%</td>
<td>9.811</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>Not linked</td>
<td>155</td>
<td>60.6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.6.11 Challenges encountered when starting ARVs

The biggest challenge encountered when starting ARVs was more of classical (expected and not life threatening) that is Nausea, Vomiting and Diarrhea, but of concern was forgetfulness and not taking medication on time, which a clinician cannot do much about it.

Table 4-25 Challenges encountered when starting ARVs

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea, Vomiting and diarrhoea</td>
<td>195</td>
<td>87.8%</td>
</tr>
<tr>
<td>Difficulty in walking</td>
<td>57</td>
<td>25.7%</td>
</tr>
<tr>
<td>Forgetfulness, and not taking medication on time</td>
<td>111</td>
<td>50.0%</td>
</tr>
<tr>
<td>The pill burden was too much</td>
<td>93</td>
<td>41.9%</td>
</tr>
</tbody>
</table>

4.6.12. Occupation of the linked respondents

Patients interviewed in this study came from different occupational background much of which was small scale trading and business; 64% in Kwale and 53% in Machakos. 17.2% were unemployed in Kwale and 30.3% in Machakos.

Table 4-26 Occupation of the linked respondents

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>Kwale</th>
<th>Machakos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Servant</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6.9%</td>
</tr>
<tr>
<td>Privately employed</td>
<td>6</td>
<td>20.7%</td>
</tr>
<tr>
<td>Business</td>
<td>10</td>
<td>34.5%</td>
</tr>
<tr>
<td>Petty Trading</td>
<td>6</td>
<td>20.7%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>5</td>
<td>17.2%</td>
</tr>
</tbody>
</table>
4.6.12 Social/Economic changes upon discovering HIV status

The study results showed that there were many social and economic challenges encountered by the patients upon discovering HIV status. 81% of the patients interviewed in Kwale and Machakos mentioned that they experienced a range of socioeconomic challenges.

Were there any social/economic changes upon discovering your HIV status?

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>Kwale</th>
<th>Machakos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Yes</td>
<td>23</td>
<td>158</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>33</td>
</tr>
</tbody>
</table>

4.6.13. Some of socio economic changes that occurred

There were many socioeconomic challenges and changes experienced by the patients upon discovering their HIV positive status. They ranged from loss of employment 37.5%, divorce 23.9%, and loss of close friends 82.4% to collapse of business or livelihood 37.5%.

Table 4-28 socio economic changes that occurred

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of employment</td>
<td>66</td>
<td>37.5%</td>
</tr>
<tr>
<td>Divorce</td>
<td>42</td>
<td>23.9%</td>
</tr>
<tr>
<td>Loss of close friends</td>
<td>145</td>
<td>82.4%</td>
</tr>
<tr>
<td>Collapse of business</td>
<td>66</td>
<td>37.5%</td>
</tr>
</tbody>
</table>
CHAPTER V: DISCUSSIONS, SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discussed the findings from the field based on the objectives guiding the study. Also included in the chapter are the conclusions drawn from the findings as well as the recommendations.

5.2 Socio-demographic characteristics of the study subjects

The study participants comprised of linked patients to support groups (59.7% and 57.1% males and females respectively) in Kwale and non linked patients (40.3% and 42.9% Males and females respectively) in Machakos. The study results showed that majority of the patients in Kwale and Machakos were in the age brackets of 30 to 49 years, the most affected being females (66%), this distribution agrees well with KAIS and KDHS surveys that showed that more females were bearing the HIV and AIDS burden and that the youths and the most productive section of the society were more affected (ROK, 2007).

5.3. Relationship between adherence, better clinical outcomes and linkage status to support groups

The study found that the relationship between ART adherence, clinical outcomes and linkage to support group was statistically significant ($\chi^2 = 20.7$, $P = 0.0001$) and $(t= 11.90$, $P = 0.000$) respectively. However, finding on relationship between clinical outcomes especially weight gain and ART adherence was more pronounced after two years of ART treatment. This is because increase in CD4 and further improvement in immune functions takes time. Adherence is the
second strongest predictor of progression to AIDS and death, after CD4 count (Hogg RS, 2002). Consistently high levels of adherence are also important determinants of virologic and immunologic outcome, AIDS-related morbidity, mortality, and hospitalizations Nachega, 2006 and Weidle, 2006. Non adherence risks the development of drug resistance and failure of therapy. Although the minimum threshold of adherence necessary for the clinical effectiveness of HAART remains unclear, available data suggests that patients must take a high proportion (95% or more) of antiretroviral drug doses to maintain suppression of viral.

The study identified effects of psychosocial support groups on ART adherence and Clinical outcomes of HIV positive patients enrolled in Kwale and Machakos district hospital comprehensive care clinic (CCC). Linking HIV positive patients/clients to psychosocial support groups helped patients to deal with a wide range of issues, and these were psychosocial, financial, care and treatment among others. Linked patients to support group adhered well to ART medication than the non linked patients. These outcomes agrees well with a study conducted on social support and adherence in the United States by Donald Gardenier, 2009 where the Social support and adherence to therapeutic regimens have both been firmly linked to favorable health outcomes in various patient populations, including substantial evidence in diverse groups of PLWH. This evidence has been shown despite multiple definitions and measurement strategies for both adherence and social support, this is further echoed by works of Pearson (2009), that psychosocial mobilisation contributes immensely to quality of health in PLHIV in Mozambique. In Kenya this is true; the ministry of health is stepping up efforts to
have all patients enrolled at the HIV comprehensive care clinics linked to well functioning HIV support groups at the community level.

Data from facility records review revealed that linked patients demonstrated good adherence level and there were few reported defaulter rates among the linked as compared to non linked patient, this findings relates well to the study by Cabrera, 1996. Poor adherence was defined by lack of commitment to stick to the service provider/clinicians recommendations and schedules on ART medication. Poor adherence eventually leads to poor health outcome, Linked patients had good clinical outcomes, this was shown by the data on weight gain, episodes of opportunistic infections and other clinical pictures in the linked patients compared to non linked patients. The study data showed that many linked patients had reduced morbidity overtime after initiation of ART, six months to two years later; this is echoed by the findings of Khopkar (2005) on morbidity reduction of patients put on ART early enough before depletion of CD4 immune cells. Linked patients had better weight gain outcomes compared to none linked patients after the initiation of ART, the data collaborates with Journal of AIDs (2010) observation and association between weight gain and clinical outcomes among HIV adults initiating ART in Lusaka, Zambia JAIDS (2010). In another study conducted by Anne M. B (2009) in Texas USA, the consequences of non adherence to ART regimens among HIV-infected patients were very significant and included progression to AIDS and death. Adherence is influenced by medication-related issues, the relationship between the patient and his or her health care team, and the individual patient-related factors, such as mental illness, drug abuse, self-efficacy beliefs, and presence of social support. FGD and key
informant interviews confirmed this. The key informant interviews revealed that enrolled patients who were put on ART early enough before the immune system was compromised to an irreversible levels are more likely to have fewer opportunistic infections and hence fewer mortality outcomes. Linked patients started early ART treatment compared to non-linked patients.

Achieving a good adherence is a personal decision which can be influenced by the service provider or people around the patient. The best placed persons who are likely to influence the patient are other patients; this agrees with findings of Elizabeth grant et al., work (2008) and Oyeledun (2010): Patients who had excellent adherence levels reported discussing with other support group members issues relating to good adherence and how to overcome barriers to good adherence, Patients said that information they received about ART at the support groups motivated them to take the drugs correctly as prescribed by the service providers. In this study, lack of food was perceived as a barrier to adherence, this finding echoes similar findings by Granrich, (2001), where nutrition and food requirements should be prioritised in HIV programming. Many patients believed that ART could not be taken without food hence the reason why some joined support groups to participate in IGAs to supplement other sources of income. 66.6% of respondents who were members of support groups cited that money they got from the support group activities was used to buy food and other medication, this was consistent with the report by UNAIDS (1999) that many community home-based care programmes take the form of medical and nursing care, material assistance as well as emotional, spiritual and social support.
5.4 Activities conducted by the support groups for its members to improve adherence and clinical outcomes

The study looked into various IGA and psychosocial support activities conducted by the support group members. A large proportion of linked respondents (68% and 72% in Kwale and Machakos respectively) participated in income generating activities. Most of these support groups in the two districts had income generating activities, this imply community’s recognition of need to improve own welfare and then gearing into action. Krantz and Staugard (1996) observed that in Uganda, community based groups were actively involved in health related activities on a voluntary basis in the village or in local community including care and social support to persons with AIDS and their families.

FGD interviews identified types of IGAs in the communities as: small-scale entrepreneurship, crop farming, poultry, keeping goats, tree nurseries, bricks making and crafts, rope making or basket weaving. From participation of support group members, this activity equally played key role in improving welfare of individuals and households against the backdrop of HIV and AIDS, data showed that money generated from the IGA was used by members to buy prescription medicines. This can be resolved by setting up of savings and loan groups, financial advice from experts among others. Farming was the most widespread of the IGAs. This is because farming activity required least inputs and that virtually all households had access to a plot that could be cultivated. These findings are consistent with Republic of Kenya (2003) that the communities participated in low income and poor return income activities. Poverty level in Kwale and Machakos districts study areas was 78% and 63% respectively (CBS 2008). In
FGDs, it was clear that support group activities increased members’ income base, though this was not significant. The views from the FGDs were consistent with KENWA and NLM gateway (2010) and by Wouters, E. (2008), that adherence counselling alone is not enough; a patient needs to know more about their disease and treatment. This additional knowledge helps the patient to understand better their illness and take charge and ownership of their own treatment schedules; therefore less likely to default. This patients will go an extra mile to ensure that they remain adherent since they understand their life is dependent on the treatment. At the support group meetings, patients discussed the importance of taking ART and adhering to these medications. From the FGD interviews, support group leaders reported that they referred patients who had serious adherence problems to professional counsellors or healthcare workers for further counselling. Various psychosocial issues that affected a HIV positive patient and impacted to the health outcome of the patient were dealt with at the support group level. Strategies were developed to mitigate these negative psychosocial barriers and obstacles to good adherence and expected good clinical outcome.

5.5 Psychosocial factors influencing adherence and clinical outcomes

The study looked into types of psychosocial support provided to its members. 96% of linked patients in Machakos and 88% of linked patients in Kwale reported to have been given group counselling on how to cope with the disease among others, and this was done on a regular basis depending on the nature of the problem at hand. Social support is one of the most widely researched predictors of health in HIV and other illnesses. Five HIV studies have reported social support to be a predictor of better health; six have failed to find a significant association,
including one that found a negative association (Miller, 1997). Most studies were done before the availability of ART. The largest study \((n=414)\) showed that larger network sizes predicted longer survival during 5 years among those with AIDS, but not among other men in the study (Patterson, 1996). In the longest study done to date, Leserman, 1998 found that higher cumulative social support predicted less rapid progression to AIDS or to an AIDS clinical condition.

This study reviewed records of patients enrolled at the CCC, linked and none linked to support groups to get specific information related to patient adherence, clinical outcomes and affiliations to support groups. This was consistent to a study conducted in Ethiopia, Kenya, Rwanda and Uganda by Dennis. et. al (2010) and Panos Global AIDS Program study (2006), measuring adherence to antiretroviral treatment in resource-poor settings, the study was conducted to explore the clinical validity of key indicators in measuring adherence in patients enrolled at the HIV clinics. The studies further demonstrated that routine data in African health facilities can be used to monitor antiretroviral adherence at the patient and system level. These studies agrees well with this research study in Machakos and kwale, where the analysis of data collected from the CCC provided vital information about adherence and clinical outcomes of the enrolled patients.

The study data indicated that there were no statistically significant relationships between occupation and adherence level including clinical outcomes of the linked and non linked patients \(P > 0.106\), this finding agrees well with the national HIV prevalence rate in Kenya, in which Kenya has a generalised HIV epidemic. In a
generalised HIV epidemic, people from all occupations; from farmers to white collar jobs have equal chances of contracting HIV.

Several strengths and limitations of this study deserve mention. The study assessed adherence outcomes through a combination of subjective and objective measures—objective being clinic attendance and subjective being patient self-report and staff assessment among those attending clinic. Given the retrospective chart review nature of this study, variables for analysis were limited to those routinely documented in the ART clinic files. Assumptions had to be made about the meaning of “not documented” for some variables. No socioeconomic data aside from level of education, and employment history were available.

The study adherence assessment relied on records of drug collection, patient self-reported adherence measures and the clinician assessment. More objective measures such as pill counts were not incorporated into routine care in these clinics. The adherence measure used in this study could not be correlated with more objective methods such as virologic outcomes and nevirapine plasma levels. Patients lost to follow-up may represent treatment defaulters or deaths. Adherence determinants within individuals may vary with time. Nachega (2006) suggested that long-term adherence is largely determined by how successfully patients can shift psychologically from an early obsession with survival to a stage of empowered living sustained through social support. Studies report conflicting evidence about the association between socio-demographic factors and adherence behavior.
Some literatures reported that certain socio-demographic variables have influence over adherence to ART; however, others showed no association, Tadios, 2006, Amico, 2004, Nachega, 2006, Berg, 2004. More consistent associations are found between certain psychosocial factors and adherence behavior and this was well demonstrated by this study. Common predictors of non-adherence include depression/psychiatric morbidity according to studies by Kumarasamy N. (2005) and Chesney MA. (2000) this study did not go to the level of including psychiatric and depression profiles of the enrolled patients, this is a probable confounder in this study and probable confounders in this study could have been, active drug or alcohol use as demonstrated by Stirratt (2006), sero status disclosure (Kumarasamy , (2005) and Singh , 1996 and lack of social support.

This study established that there is a strong association between social support and ART adherence, including other clinical outcomes such opportunistic infections reductions (t =-2.92; p=0.004), gain in body weight two years after commencement of ART (t = 2.1, P = 0.025).

As a study limitation, more than 95% of the patients studied viral loads were not available from medical records; they had not been done. So an important outcome of ART and ART adherence viral suppression could not be assessed.

The patients who died or were lost to follow-up in the first 6 months were not included in the present study (selection bias). Some factors such as food insecurity, transportation barriers, and structural barriers of ARV adherence were not assessed and these could have had a confounding effect on this study. Caution is also urged in generalizing findings to other districts and provinces in the country.
Investigation of factors related with long-term adherence would require longer follow-up than the study period that this study took. 52% of the linked patients were mature ART patients, meaning that they had been on treatment for longer and saw the need to join support groups compared to 38% of newly ART initiated patients, who had other issues to deal with before settling down and accepting their new HIV status. This had a confounding effect on the study, because HIV treatment experience tended to make patients have optimal adherence to ART medication and take up overall responsibility of their health.

5.6 Psychosocial challenges that affect HIV positive patients

The study looked into psychosocial challenges affecting PLHIVs enrolled at the CCC; the challenges investigated were in relation to HIV sero status, ART treatment and livelihood /income generation. The study results showed that 82% of PLHIVs experienced challenges ranging from discrimination, rejection to feeling of death when first tested and confirmed to be HIV positive. Health care workers at the CCC are already overwhelmed with huge number of the patients streaming into the facilities daily and therefore offering extended psychosocial services to these patients remains a challenge besides being ill equipped with psychosocial counselling skills. Support groups are among the best available avenues to receiving psychosocial interventions by the PLHIVs; this is because the members share a common agenda which is to improve and live a quality life. The study revealed that PLHIVs linked to support groups experienced less psychosocial challenges compared to none linked. These challenges included rejection by friends and family members, being seen as immoral and outcast etc.
To address the issues related to loss of livelihood after testing HIV positive; support group members initiated IGA where members benefitted financially.

6.0 Summary, Conclusions and Recommendations

6.1 Summary

HIV/AIDS patients commencing ART with support from treatment support groups (those who were linked) had more favourable clinical and immunological responses than those without such support ($t = 2.1, and 2.28$). These findings have potentially important policy implications in HIV programming and HIV service provision. The findings of this study therefore, offer a description of the participants who may be more likely to participate in psychosocial support programs in conjunction with their HIV-related treatment. Understanding these characteristics provides insight into the mechanisms that may be helpful to providers who have the opportunity to link such individuals to psychosocial support services. These findings are also important, in that they suggest the specific topics that may need to be addressed in order to enhance the effectiveness of psychosocial groups, including issues related to disclosure, sexuality, and stigma. These findings stress the importance of HIV psychosocial support in achieving durable treatment success and indicate that health policy makers should acknowledge and strengthen the role of HIV psychosocial support in the fight against HIV/AIDS through morbidity and mortality reduction. The study also revealed that besides the clinical and other health related benefits received at the support groups by the patients, support groups activities provided various avenues
to generate income by these patients, money received is used to buy food and other prescription medicine not dispensed at the health facility.

6.2. Conclusions

i. Fostering psychosocial support can help a person with HIV to cope and to remain engaged in living. Recognizing and encouraging a positive attitude in patients could be helpful, healthcare professionals must continue referring their HIV positive patients to psychosocial support and offer continues counseling on various psychosocial issues affecting PLHIVs.

ii. Given the well documented negative effects of non-adherence, the study results showed that psychosocial support on patients on ART enhanced clinical outcomes in these patients.

iii. Support groups offer additional psychosocial, financial and emotional support services which are not offered at the HIV clinic.

iv. Patients linked to support groups had optimal ART adherence and better clinical outcomes.

v. This study demonstrated that adherence measures derived from CCC data records, self-report data in medical records, and attendance logs predict key clinical outcomes related to individual patient success in treatment. However, a more important use would be as population measures to characterize the overall success of treatment programs or health facilities in maintaining patients on therapy. With such data, it would be possible to
target quality improvement activities to programs, facilities, and ultimately patients that are in greatest need

6.3 Operational recommendations

6.3.1 Programmatic and Policy Recommendations

i. There is need to encourage formation of HIV psychosocial support groups at the community level, these support groups should be linked to the facility HIV comprehensive care clinics to complete the continuum of care between facilities and the community. The Ministry of Health should continue encouraging the formation of HIV psychosocial support groups including addressing their sustainability

ii. To address poor ART adherence, the ministry of health should work with the community in ensuring that ART defaulters are followed through the psychosocial support group framework at the community.

iii. To address high poverty levels in patients on ART treatment, HIV positive individuals should be encouraged to start income generating activities to supplement their sources of income (study findings showed that 67% and 55% of linked patients in Kwale and Machakos got financial support to buy medicine and food respectively). The government and partners can jump start these processes by giving soft loans and other necessary resources.
6.3.2 Future Studies Recommendations

i. Adherence is a process, not a single event, and adherence support must, therefore, be integrated into regular clinical follow up. Investigation of factors related with long-term adherence would require longer follow-up than the present study.

ii. Future longitudinal studies should cast a wider net to include positive constructs not yet investigated, and should do so with conceptual clarity. Future intervention studies are needed to determine whether focusing on positive states will enhance effectiveness beyond what is already achieved.
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Zwickl, Bought., (2000). *Self-reported adherence to antiretroviral medications among participants in HIV clinical trials: The AACTG adherence instruments.* AIDS Care,
Appendix 1 A Map of Kwale district showing the study area
Appendix 2  Position of Kwale district in Coast Province
Appendix 3 Position of Machakos district in the Map of Kenya
Appendix 4 Machakos District
Appendix 5; Semi-Structured Interview Schedule

Dear Respondents,

My name is Tom Marwa; I am a Masters student of Public Health from Kenyatta University. I am interested in studying Effects of psychosocial support groups on ART adherence and clinical outcomes of HIV patients enrolled at Kwale and Machakos Comprehensive Care Clinics. The information you provide will be treated with strict confidence and is related to the study titled

EFFECTS OF PSYCHOSOCIAL SUPPORTGROUPS ON ART ADHERENCE AND CLINICAL OUTCOMES OF HIV PATIENTS AT KWALE AND MACHAKOS CLINICS

Name of Research Assistant: ___________________________________________

Name of Researcher ________________________________________________

Identification ____________________________

Tool code: ____________________________

Date of interview: ____________________________

Location: ____________________________

Sub location: ____________________________

Village: ____________________________

Support group No ____________________________

IDENTIFICATION

Date of interview ____________________________

Village ____________________________

Name of interviewer ____________________________
SECTIONA: DEMOGRAPHIC CHARACTERISTICS

1. Sex of the respondent?
   a) Male
   b) Female

2. Age of the respondent ________________ (in years)

3. Marital status of the respondent
   a) Single person
   b) Married/in union
   c) Divorced
   d) Widower/widowed

4. Religion of the respondent
   a) Muslim
   b) Catholic
   c) Protestant
   d) Others (specify) ____________________________________________

5. Educational level of the respondent
   a) Primary
   b) Secondary
   c) University
   d) None

(Inform the respondent that you will be discussing personal matters about his/her health. Reassure that the information is confidential and for research purposes only. The ultimate aim is better access to CCC services being offered to them.)
SECTIONB: PSYCHO-SOCIAL INFORMATION

6. When were you tested and confirmed to be HIV positive?
   a) 1-6 months ago
   b) 7-12 months
   c) 13-24 months
   d) 25-36 months
   e) Over 37 Months

7. Did you find it challenging for you as an individual to accept your HIV status?
   a) Yes
   b) No

8. What are some of the things that came into your mind soon after learning about HIV+

____________________________________________________________
________________________________________________________________________

9. How did you manage to accept your HIV status as an individual?
   a) I disclosed to my spouse/ friend
   b) Associating with others who are positive at the PSG
   c) I was consoled by my religious leaders
   d) The counselor was too good
   e) Others(specify)

10. Have you shared information about your status with anyone?
    a) Yes
    b) No

11. If yes, with whom have you shared?
    a) Spouse
    b) Friend/s
    c) Psychosocial support group members
    d) Others (specify)
12. Did you find it challenging to pass this information on your status to them?
   a) Yes
   b) No

13. Was it a challenge to those you told to accept you?
   a. Yes
   b. No

14. If yes (why)

   ______________________________________________________________
   ______________________________________________________________

15. If no (why)

   ______________________________________________________________
   ______________________________________________________________

SECTION C: SERVICE PROVIDER INFORMATION

16. When did you know that the CCC services offered at the CCC would help in your condition?
   a) …….. years
   b) …….. months ago

17. What are the services offered at the CCC to people of your condition?
   a) VCT
   b) Psychosocial Support
   c) ARVS
   d) Nutrition
   e) Others

18. i) What services do you (yourself) obtain from the Psychosocial Support groups?
   a) ARVS
b) Counseling  
c) Nutrition  
d) Others….  

ii). Do you think there are other HIV services offered at the support groups that are not offered at the facility CCC?  
a. Yes  
b. No  

iii). If Yes: List them  
__________________________________  
__________________________________  

19. For how long have you utilized these services?  
a) …….years.  
b) …….months  

SECTION D: HEALTH AND DRUG RELATED INFORMATION  

20. Are you currently using ARV drugs?  
a) Yes  
b) No  
(Why)__________________________________________________________  

21. If yes, for how long have you been on ARV drugs?  
a) …….years.  
b) …….months  

22. What reasons prompted you to take up the ARV drugs?  
__________________________________________________________  
__________________________________________________________  

23. Did you find any problems or challenges when you started taking up ART?
24. If yes, what were these problems or challenges?

________________________________________________________________________
________________________________________________________________________

25. How did you overcome these problems/Challenges?
   a. Talking to friends
   b. Spouse
   c. Psychosocial support groups
   d. Counselors

26. What support did you get from the support group to overcome these problems or Challenges?
   (Ask this question if the choice above is Support group)

________________________________________________________________________
________________________________________________________________________

27. How do you think adherence to ART is achieved?
   a) Taking your medication on time as prescribed by the doctor
   a) Taking your medicine only when you feel sick
   b) Avoiding to take medicine which have some side effects
   c) Contacting your health worker all the time you feel the medicine is causing bad side effects or not working

28. According to you who are the most important people who can help you achieve maximum adherence
   a) Spouse
   b) Friends
   c) Support group members
   d) Religious leaders
e) Your children
f) Relatives
g) All the above

29. Do you think ART drugs works in reducing the HIV virus to undetectable levels
   a) Yes
   b) No

30. Do you think the healthcare provider’s attitude/factors negatively affect patient adherence?
   a) Yes
   b) No

   If Yes How___________________________________________________________

31. Do you think food availability affects adherence to ART?
   a) Yes
   b) No

32. Do you have a treatment supporter/buddy?
   a) Yes
   b) No

33. Do you think multiple ARVs regimens affect your adherence?
   a) Yes
   b) No

   IF Yes How___________________________________________________________
SECTION E: SOCIO-ECONOMIC INFORMATION

34. What type of support do you need from psychosocial support group to enable you access the HIV CCC services?
   a. Transport to the CCC
   b. Food to meet the nutritional advice from the CCC staff
   c. Money to buy drugs prescribed at the CCC
   d. Other Psychological support
   e. Others (specify)

35. Occupation of the respondent
   a. Public servant
   b. Privately employed
   c. Business
   d. Petty Trading
   e. Unemployed
   f. Others

36. What kind of support have you been receiving from this support group that has enabled you to cope with HIV?
   a) _______________________________________________________________
   b) _______________________________________________________________
   c) _______________________________________________________________
   d) _______________________________________________________________

37. How often do support group members meet?
   _______________________________________________________________

38. Do you discuss your medical condition at the support group?
   a) Yes
   b) No
39. If yes what do you discuss?
________________________________________________________________________
________________________________________________________________________

40. Do you conduct any income generating activities at the support group?
   a. Yes
   b. No
   c. If Yes: How do these activities promote your health as a PLHIV?
      ______________________________________________________________________
      ______________________________________________________________________

        d. Are there any social and economic changes that occurred to you upon discovering
           your HIV status?
   a. Yes
   b. No

41. If yes, which are these changes?........................................................................
   a. Loss of employment
   b. Divorce
   c. Loss of close friends
   d. Collapse of business
   e. Other (Specify)

42. How did the psychosocial support group help you deal with the situation above?
________________________________________________________________________
________________________________________________________________________

43. Do you consider yourself as getting all the necessary support from the psychosocial
    support group to the following services?

    Yes            No.

   a) FP
   b) Nutrition
c) Counseling  
d) Curative services  
e) Financial support  
f) Others 

**SECTION F: FACILITY RECORD REVIEW (MOH 257 CCC PATIENT CARDS)**

44. Clinical outcomes after initiation of ART (6 months, 12 months, 16 months, 24 months later)

<table>
<thead>
<tr>
<th>Clinical outcomes</th>
<th>6 Months</th>
<th>12 Months</th>
<th>16 months</th>
<th>24 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (Average)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD4 Cells (Average)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OIS (non, 1,2,3 or)</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Appendix 6: Focus group discussion guides

Dear Respondents,

My name is Tom Marwa; I am a Masters student of Public Health from Kenyatta University. I am interested in studying Effects of psychosocial support groups on ART adherence and clinical outcomes of HIV patients enrolled at Kwale and Machakos Comprehensive Care Clinics. The information you provide will be treated with strict confidence and is related to the study titled:

EFFECTS OF PSYCHOSOCIAL SUPPORT GROUPS ON ART ADHERENCE AND CLINICAL OUTCOMES OF HIV PATIENTS AT KWALE AND MACHAKOS CLINICS

Psychosocial Support group members
The interview will take about 40 minutes. I would like to ask you some questions relating to this exercise

Date of interview _______________________

Name of the Support groups you are affiliated to: ______________

Position ____________________
1. Is HIV/AIDS a problem in the community served by this health facility? (*Probe: cause, prevention and care*)

2. What services are available for People Living with HIV and AIDS at the health facility? (*Probe: for types of HIV services….PMTCT, ART, HTC, adherence*)

3. Do PLWHAS in this area access such services? If Yes (Why)

4. If No (Why) *Probe: for reasons, how and why?*

5. What challenges do PLHIV face in accessing the ART Services? (*Probe for these challenges and rank as per the frequency of mention Rank them*)

6. How do patients enrolled at the CCC referred to psychosocial support group? (*Probe on patient care, psychological and spiritual support*)

7. In your opinions what challenges are faced by psychosocial support groups?

8. How do PLHAs benefit by joining psychosocial support group?

9. What are these activities conducted at the support group that promotes ART and treatment adherence? (*Probe for Income generation activities, nutritional support, and psychosocial support activities and rank them*)

10. How do these activities promote ART and treatment adherence?

11. What are these AIG activities conducted in the support groups?

12. In your own opinion how do you think the linked patients benefits from Support groups as compared to non-linked patients?
Appendix 7: Key Informants Interview Guide

Dear Respondents,

My name is Tom Marwa; I am a Masters student of Public Health from Kenyatta University. I am interested in studying Effects of psychosocial support groups on ART adherence and clinical outcomes of HIV patients enrolled at Kwale and Machakos Comprehensive Care Clinics. The information you provide will be treated with strict confidence and is related to the study titled:

**EFFECTS OF PSYCHOSOCIAL SUPPORT GROUPS ON ART ADHERENCE AND CLINICAL OUTCOMES OF HIV PATIENTS AT KWALE AND MACHAKOS CLINICS**

The interview will take about 40 minutes. I would like to ask you some questions relating to this exercise

Date of interview _______________________

Name of the Facility or department ______________

Position _________________________

Duration worked in the area _________________________

1. Is HIV/AIDS a problem within the catchment area?
   a. Yes
   b. No.

   If, Yes, to what extent?  *(Probe: distribution, who most affected and reasons for the occurrence)*?

   __________________________________________________________

   If, No: why not

   __________________________________________________________

   __________________________________________________________
2. What services are offered to HIV positive patients at the CCC?

_________________________________________________________________
_________________________________________________________________

3. What is the general attendance per week/month?

_________________________________________________________________
_________________________________________________________________

4. Do service providers go to these support groups and offer some kind of services?
   a) i). Yes
   b) ii). No
   c) iii). If yes what is this that they do for the support groups?

5. Do you keep inventory of all the psychosocial support groups in the district?
   1. Yes
   2. No

6. i). What are the main reasons for referring your patients to the support groups?

   ii). How is the referral of PLHIV to the Support groups done?

7. In your opinion do patients linked to support groups have better clinical outcomes than those not linked?
   1. Yes
   2. No

If: **Yes** what are these clinical outcomes?
   1. Gain weight
   2. Have fewer OIs
   3. Increased CD4 Level
   4. Others (Specify) ______________________________
8. How many patients registered for HIV care are linked to a support group?

_________________________________________________________________

9. What are your experiences to ART adherence by patients who are on ART treatment? (probe for clinical outcomes, hospital appointments, drug compliance, family planning, defaulter levels and failing first line treatment)

_________________________________________________________________

10. Do patients on ART adhere to treatment?, if not why? Are there specific programmes to address that?

_________________________________________________________________

11. Do you think support groups helps to improve adherence level for its members?
   a. Yes
   b. No.

      If, Yes How?

      If, No: why

12. What could be some of the reasons why some PLWHAS are not adhering to ART?

_________________________________________________________________

_________________________________________________________________

13. What can be done to improve adherence level for patients who are not adhering to ART?

_________________________________________________________________

_________________________________________________________________

14. What are some non clinical services offered at the support group that helps to improve the health of the members?
Appendix 8: Consent Letter for Support group Members

EFFECTS OF PSYCHOSOCIAL SUPPORT GROUPS ON ART ADHERENCE AND CLINICAL OUTCOMES OF HIV PATIENTS AT KWALE AND MACHAKOS CLINICS

Dear Respondent,

My name is Tom Marwa; I am a Masters student of Public Health from Kenyatta University. I am interested in studying effects of Psychosocial Support groups on ART Adherence and Clinical Outcomes of HIV patients at Kwale and Machakos clinics. The information you provide will be treated with strict confidence. I agree to participate in this research following a detailed explanation of what the study involves and my role in the study.

By signing below, I ascertain that my participation is voluntary and I am free to take part or withdraw at any time of the study, as I have been assured of the privacy and confidentiality of the information that I may provide.

_________________________              Date _________________
Signature (Informant)

_________________________              Date _________________
Signature (Research Assistant)

_________________________              Date _________________
Signature (Researcher)
Appendix 9: Consent Letter for Key Informants

EFFECTS OF PSYCHOSOCIAL SUPPORT GROUPS ON ART ADHERENCE AND CLINICAL OUTCOMES OF HIV PATIENTS AT KWALE AND MACHAKOS CLINICS

Dear Respondent,

My name is Tom Marwa; I am a Masters student of Public Health from Kenyatta University. I am interested in studying effects of Psychosocial Support groups on ART Adherence and Clinical Outcomes of HIV patients at Kwale and Machakos clinics. The information you provide will be treated with strict confidence.

I _______________________________ agree to participate in this research following a detailed explanation of what the study involves and my role in the study.

By signing below, I ascertain that my participation is voluntary and I am free to take part or withdraw at any time of the study. As I have been assured of the privacy and confidentiality of the information that I may provide.

_________________________ Date _________________________
Signature (Informant)

_________________________ Date _________________________
Signature (Research Assistant)

_________________________ Date _________________________
Signature (Researcher)
Appendix 10: Research Permit

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegram: "SCIENCE TECH", Nairobi
Telephone: 254-020-241349, 2231102
254-020-319575, 318245
Fax: 254-020-2212321, 318245, 318249
When replying please quote

Our Ref: NCST/12/1/MAS/102/3

Ms. Tom Marwa Machera
Kenyatta University
P. O. Box 43844
NAIROBI

Dear Sir,

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Effects of psychosocial support groups on art adherence and clinical outcomes of HIV patients enrolled at Kwale and Machakos comprehensive care clinics” I am pleased to inform you that you have been authorized to undertake research in Machakos and Kwale Districts for a period ending 30th November 2009.

You and your team are advised to report to the District Commissioners, the District Education Officers and the Medical Officers of Health Machakos Kwale Districts before embarking on the research project.

On completion of the research, you are expected to submit two copies of the research report/thesis to our office.

[Signature]

P. N. NYAKUNDI
FOR: SECRETARY/CEO

Copy to:
The District Commissioners
Machakos District
Kwale District