FACTORS ASSOCIATED WITH HIV STATUS DISCLOSURE AMONG ADULT PATIENTS AT KILIFI DISTRICT HOSPITAL'S HIV CLINIC, 2008.

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Factors Associated with HIV Status Disclosure among Adult Patients at Kilifi District Hospital's HIV Clinic, 2008.

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DECLARATION

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

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DEDICATION

I dedicate this thesis to my mother who sacrificed much to ensure I got educated. I also dedicate this thesis to my darling wife Phyllis and my two lovely children Victor and Sally for their holistic support, perseverance, motivation and encouragement throughout the entire course.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
ARV	Anti-Retroviral
CCRC	Comprehensive Care and Research Clinic (HIV clinic at KDH)
C.I	Confidence Intervals
DTC	Diagnostic Testing and Counseling (program)
HIV	Human Immunodeficiency Virus
IAVI	International AIDS Vaccine Initiative
IQR	Inter-Quartile Ranges
KDH	Kilifi District Hospital
KEMRI	Kenya Medical Research Institute
NACC	(Kenya) National AIDS Control Council
OI	Opportunistic Infections
PLWHA/PLHIV	People/clients Living With HIV/AIDS or People/client living with HIV
PMTCT	Prevention of Mother To Child Transmission (program)
PWP	Prevention with (HIV) Positives
UNAIDS	Joint United Nations Programme on HIV/AIDS
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

ABSTRACT

HIV/AIDS remains a highly stigmatized disease and a great public health challenge in Sub-Saharan Africa where majority of the infections (both new and pre-existing) and deaths occur. As the HIV pandemic continues to spread, there is an urgent need to identify innovative strategies to prevent new infections and improve the quality of life for those who are infected; HIV status disclosure is one such intervention. Disclosure is likely to improve uptake of HIV testing, increase enrollment into HIV care, treatment and support services and probably reduce stigma associated with the disease.

An analytic cross-sectional study was conducted at Kilifi district Hospital's HIV clinic. Adult people living with HIV (PLHIV) on follow-up were interviewed to determine the prevalence of disclosure to; sexual partners, family members and other persons. Factors associated with disclosure to anyone and, to sexual partners were identified and comparisons of the proportions and differences done using chi-square or Fishers exact and student t-test or Kruskal Wallis for categorical and continuous variables respectively. The differences were considered statistically significant at 95% confidence intervals. Data entry and analysis was done using Epi-info version 3.3.2 and Stata version 9.

In total, 422 PLHIV were interviewed comprising of 116(27.5%) males. For all the interviewees, the median age was 36 years (IQR 30-44), 127(30%) had no formal education, 250(59%) were either married or cohabiting and majority 252(60%) were from the rural part of the district.

In all, 401(95%) had disclosed their status to at least one person, with 276(65%) having disclosed to their sexual partners. Of the 266 (63%) clients who reported to be sexually active in the past year, 218(81%) had disclosed to their sexual partners.

Within the family, disclosure to mothers and siblings (41% and 44%) was much higher that to fathers (15%), disclosure to extended family members was also high (30%). Generally, HIV status disclosure was significantly associated with being married or cohabiting (p-value=0.043), longer duration on follow up (p-value<0.001), longer duration of living with HIV diagnosis (p-value<0.001), being sexually active (p-value=0.015), being on ART (p-value<0.001) and having children (p-value=0.038) at bivariate analysis. At multivariate analysis; longer duration on follow up (p-value =0.032) and being on ART (p-value=0.005) remained independently associated with disclosure at 95% confidence interval.

Disclosure to sexual partners among the sexually active (n=266) was associated with being married or cohabiting (p-value<0.001), having children (p-value=0.006), longer duration of living with a diagnosis of HIV (p-value=0.0305) and duration of follow-up in the clinic (p-value=0.017), at bivariate analysis. At multivariate analysis; longer duration on follow-up (p-value=0.024) and being married or cohabiting (p-value<0.001) remained independently associated with disclosure of HIV status.

Despite relatively high levels of disclosure, non-disclosure to sexual partners among the sexually active still existed. There is need therefore to promote HIV status disclosure among PLHIV with an aim to improve HIV status disclosure

and safe sex practices. This may reduce new HIV infections, improve HIV testing uptake, adherence to antiretroviral therapy as well as reduce stigma associated with HIV/AIDS.

CHAPTER ONE: INTRODUCTION

1.1 General introduction

HIV/AIDS remains a major health challenge in Sub Saharan Africa, with less than 10% of the world's population, the region is home to almost 70% of all HIV infected. Not only has HIV/AIDS affected many people in this region, it also kills close to 2 million people annually. It is also estimated that more than 90% of all children infected by HIV/AIDS live in Sub Saharan Africa (UNAIDS, 2007b). The spread of HIV/AIDS has reversed most of the progress in health, education, life expectancy and standards of living that Africa had made over the last decades (Pembrey *et al.*, 2009).

Concerted international efforts have been put in place to reduce transmission as well as put those infected on treatment. Although, significant gains have been made on HIV prevention, treatment and support platforms, more still needs to be done. In the East African region, just like other low and middle income countries, majority of those infected do not know their status (UNAIDS, 2007a) and majority of those in need of antiretroviral therapy cannot access it. For those on treatment, adherence to both clinic appointments and medication taking still remains a challenge.

One aspect that is likely to reduce HIV spread and stigma, improve on uptake of HIV testing as well as improve adherence to treatment is HIV status disclosure. Disclosure to health workers may ensure enrollment into HIV care

and support programs. Similarly, disclosure to the community may enable one access social support as well as improve HIV testing uptake while disclosure to sexual partners may enable them take the necessary steps to ensure they do not get infected with the virus.

In the East African region, similar studies have reported varying prevalence of disclosure to sexual partners ranging from as low as 27% to a high 90%; 27% (Temmerman *et al.*, 1995), 32% (Galliard *et al.*, 2000), 40% (Antelman *et al.*, 2001), 65% (Farquhar *et al.*, 2000), 69% (King *et al.*, 2008) and 90.8% (Deribe *et al.*, 2008). Literature from studies done in Africa and elsewhere have linked HIV status disclosure or non disclosure to factors such as; gender (Akani and Erhabor, 2006, Bouillon *et al.*, 2007, Stein *et al.*, 1998), level of education (Akani and Erhabor, 2006, Bouillon *et al.*, 2007), number of sexual partners (Mohammed and Kissinger, 2006, Simbayi *et al.*, 2007, Farquhar *et al.*, 2000), marital status (King *et al.*, 2008, Makin *et al.*, 2008), age (Emlet, 2006, Kumar *et al.*, 2006), stage of disease (Deribe *et al.*, 2008, O'Brien *et al.*, 2003), duration of illness (Emlet, 2006, Gaskins, 2006), being on ART and others. Little work has been done to look at the association between provider or client-initiated HIV testing and counseling and disclosure nor whether specific disclosure counseling or partner notification programs are effective.

This cross-sectional study on adult PLHIV (both male and female) on follow-up at a rural district hospital's HIV clinic was conducted to determine the prevalence of HIV status disclosure to sexual partners, family members and

other persons. This disclosure was then classified into two levels i.e. disclosure to anyone, (includes sexual partners, family members and other persons) and disclosure to sexual partners. The disclosure was then examined for association with various socio-demographic, behavioral and clinical factors.

1.2 Statement of the Problem

The first case of AIDS in Kenya was reported in 1984 (National AIDS Control Council, 2005). All indications are that the prevalence of HIV is increasing in Kenya. For instance, in 2003 the country's HIV prevalence was 6.7% amongst 15-49year olds and in 2007 the prevalence rose to 7.8% in the same age group and 7.4% among the 15-64 year-olds, with nearly two thirds of all infected being females (National AIDS and STI Control Programme, 2008). Consequently, it is now estimated that more than 1.4million adults are living with HIV in Kenya, majority of whom reside in the rural part of the country (National AIDS and STI Control Programme, 2008). It is also estimated that to date the disease has orphaned more than 1 million children (National AIDS Control Council, 2006). Almost every sector of the Kenya's economy is affected by HIV/AIDS and at the household level, the disease usually infects the most economically productive members (National AIDS Control Council, December 2006). In Kenya it is estimated that of all the HIV infected adults, only 16% correctly know their HIV status (National AIDS and STI Control Programme, 2008). Approximately 500,000 PLHIV are currently enrolled and on follow-up in HIV care programs in the country with ~200,000 of them on ART (National AIDS and STI Control Programme, 2007).

HIV status disclosure to health workers mostly leads to enrollment into care and treatment programs while disclosure to family members may encourage HIV testing of sexual partners and children and enable patients access social support. Disclosure to the general society may help increase HIV awareness hence reduce HIV related stigma and thus improve social support. Encouraging HIV status disclosure by PLHIV is therefore a key pillar in "Prevention With Positives" program which aims to improve quality of life for those infected and reduce HIV transmission.

Previous studies on disclosure in Kenya have focused on females only (Farquhar *et al.*, 2000, Galliard *et al.*, 2000, Marjan and Ruminjo, 1996, Temmerman *et al.*, 1995) and for those that focused on both males and females, the approach used was qualitative and the sample size small (Miller and Rubin, 2007, Neville Miller and Rubin, 2007). It is hoped that this current quantitative study that looks at disclosure at a general HIV clinic will help understand HIV status disclosure for both sexes thus enabling development of evidence based interventions aimed at improving disclosure.

1.3 Justification

HIV/AIDS status disclosure, especially to sexual partners is an important but largely neglected aspect of HIV/AIDS management. From a prevention standpoint, disclosure to sexual partners may help the partners take the necessary steps to avoid getting infected or re-infected. Disclosure to fellow patients may help patients to access social support systems as well as induce

risk reduction behaviors through peer support while disclosure to the general society may assist to reduce stigma associated with the disease. From a treatment viewpoint, disclosure to health workers is the main entry point to care and treatment programs, within these programs HIV status disclosure has been shown to improve adherence to therapy (Adam *et al.*, 2003, Waddell and Messeri, 2006) hence better treatment outcomes resulting in better quality of life for the patients. Better adherence to therapy also delays onset of drug résistance. Understanding reasons for or against disclosure and challenges faced by patients during disclosure will help policy makers in designing programs that ensure the many benefits of disclosure are tapped to improve the HIV prevention, care, treatment and support programs.

It is therefore expected that findings from this study will contribute to the knowledge and understanding of HIV status disclosure and be useful in developing evidence-based interventions that can address this important pillar of HIV/AIDS management.

1.4 Research Questions

- What is the prevalence of HIV status disclosure to anyone (family members, sexual partners, employers and friends) and specifically to sexual partners, among adult PLHIV on follow up at Kilifi district hospital's HIV clinic?

- What factors are associated with HIV status disclosure among the same PLHIV?

1.5 Null hypothesis

There is no difference in socio-demographic, health service related, clinical, relationship and psychosocial factors between those who have disclosed and those who have not disclosed their HIV status.

1.6 Alternate hypothesis

There are differences in socio-demographic, health service related, clinical, relationship and psychosocial factors between those who have disclosed and those who have not disclosed their HIV status.

1.7 Objectives

1.7.1 General objective

To assess HIV status disclosure among adult PLHIV at Kilifi District Hospital's (KDH) HIV clinic

1.7.2 Specific objectives

- To determine prevalence of overall HIV status disclosure among adult PLHIV at KDH HIV clinic
- To determine the prevalence of HIV status disclosure to sexual partners among the sexually active adult PLHIV at KDH HIV clinic
- To identify factors associated with disclosure of HIV status among the PLHIV.

These factors are; socio-demographic factors such as age at interview date, gender, education status, current marital status and duration of marriage or cohabiting where applicable, place of residence and whether participants had children. Relationship factors such as; number of sexual partners in the last month and year and condom use habit and during the last two sexual episodes. Disease related factors such as: date of diagnosis, current weight and height and whether clients were on ART. Service related factors such as; intake HIV counseling and testing, undergoing disclosure counseling and hospital admission after HIV diagnosis and lastly psychosocial support through belonging to a support group.

CHAPTER TWO: LITERATURE REVIEW

2.1 Global disease burden

The Human Immunodeficiency virus (HIV), the virus that causes Acquired Immuno-Deficiency Syndrome (AIDS) was first described in 1981 in the United states of America (Center for Disease Control, 2001). The virus is passed from one person to another via exchange of infected body fluids through sex, blood transfusion or sharing contaminated invasive instruments. HIV can also be passed from an infected mother to her child either, in utero, during delivery or post delivery during breastfeeding.

Almost three decades since its discovery, HIV/AIDS pandemic remains a disease of great public health importance. According to a UNAIDS report released for 2007 (UNAIDS, 2007b), more than 33 million people were living with the virus, of whom, adults were 30.8 million people while children less than 15 years of age were 2.5 million. In the same year, new infections were estimated to be 2.5 million with adults being 2.1 million of these infections. Equally so, HIV/AIDS is estimated to have caused more than two million deaths in 2007 alone (UNAIDS, 2007b).

2.2 HIV in Sub Saharan Africa

Sub-Saharan Africa with about 10% of the world's population has almost 70% of all the HIV infected people including more than 90% of all children living with HIV (UNAIDS, 2007b). In 2007, up to 76% of all HIV related deaths

occurred in Sub-Saharan Africa. In this region unlike elsewhere, women are generally more infected than their male counterparts accounting for 61% of all infected people. The number of new infections in this region has reduced from the 2001 annual figure of 2.2 million to a current one of 1.7 million, signifying a favorable response to the many preventive strategies employed to control the scourge (UNAIDS, 2007b).

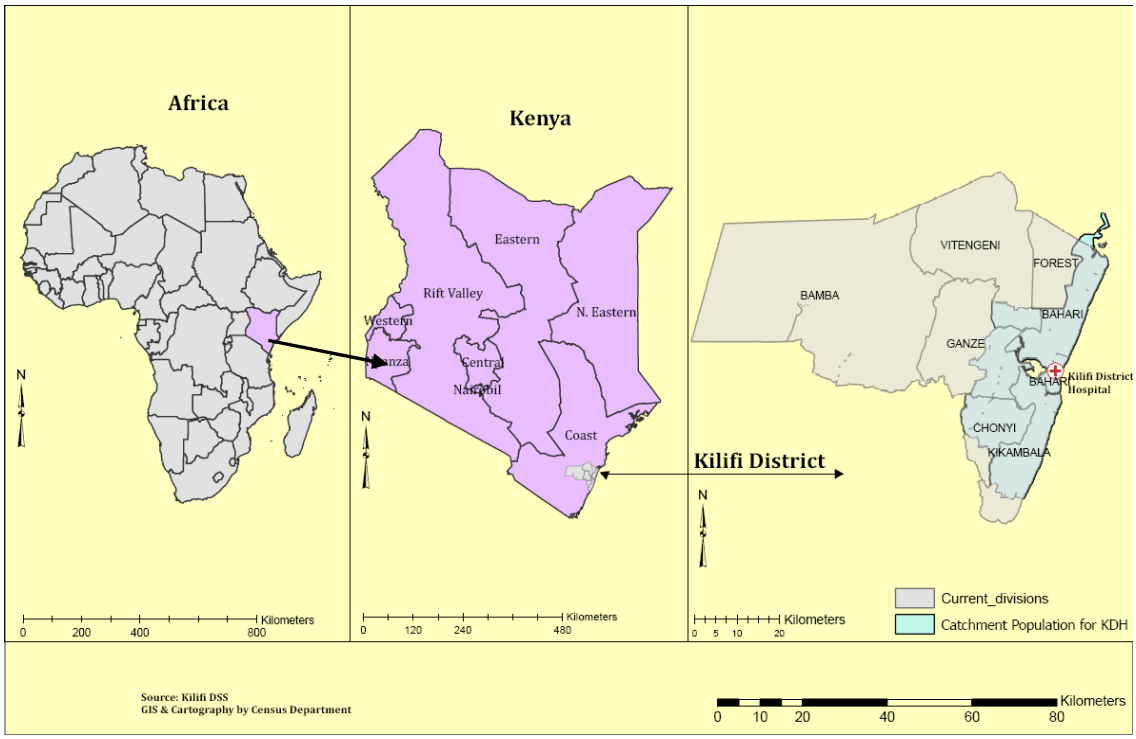
2.3 HIV in Kenya

In Kenya the first case of AIDS was reported in 1984 (National AIDS Control Council, 2005). A recent population based survey estimates that more than 1.4 million people aged between 15 to 64 years are living with HIV in Kenya (National AIDS and STI Control Programme, 2008). In line with the African picture, Kenyan women are more infected than men; with a prevalence of 8.7% for women and 5.6% for males. Regionally, the provincial prevalence for HIV ranges from a high of 15.4% in Nyanza province to a low of 1% in North Eastern province. Majority of those infected live in the rural areas of the country, where 75% of the Kenyan population reside. The same survey also reported that more than 80% of those infected, do not know their status and that HIV status discordance amongst married couples was at 45% (National AIDS and STI Control Programme, 2008). To date, HIV/AIDS has orphaned more than a million children (National AIDS Control Council, 2006) in Kenya. By the end of 2007, care and treatment programs in the country had enrolled about 400,000 people living with HIV/AIDS (PLWHA) of whom close to

200,000 had been initiated on ART, these figures represent 50% of what is expected, denoting a gap in case detection and or access to treatment.

Kilifi district, the study site, is one of the 13 districts in Coast province, Kenya. The provincial HIV prevalence stands at 7.9% which is higher than the national prevalence of 7.4% (National AIDS and STI Control Programme, 2008). Whereas the province includes a number of urban areas, Kilifi district is predominantly rural in composition. It is thus unknown how the district compares with the province in its HIV prevalence. The district is served by 25 government health facilities, of which four have comprehensive care clinics offering antiretroviral therapy (ART). ART services are also offered through three other facilities; two faith-based and one research institution in the district. Figure 2.1 below shows the geographic location of the study area

Figure 2.1: Maps of Africa, Kenya and Kilifi district



Kilifi district hospital's HIV clinic also known as Comprehensive Care and Research Clinic (CCRC) is located within the district hospital. The clinic is the main provider of antiretroviral therapy (ART) in the district and was jointly started as a collaboration between the Kenya's Ministry of Health and the International AIDS vaccine institute (IAVI) in 2003. Services offered at the clinic include, HIV testing services such as prevention of mother to child transmission (PMTCT), voluntary counseling and testing (VCT), diagnostic testing and counseling (DTC) and early infant testing services. Care and treatment services such as counseling, antiretroviral therapy and nutritional support are also provided at the clinic. Support services such as home based care services and client support groups use the clinic as their base. At the end

of 2007, the clinic had registered 3264 adult clients of whom 1220 (cumulatively) had been initiated on ARV's. ART and other outpatient services for the HIV infected are provided free of charge to the clients through the support of President emergency plan for AIDS relief (PEPFAR) and the country's Ministry of Health.

2.4 HIV status disclosure

2.4.1 Definition

Disclosure has been defined as "ongoing process where the infected individual decides on who and what is told to selected people about their disease" (Pequegnat *et al.*, 2001) It is partly synonymous with HIV notification which is a process in which information on the HIV status is disclosed by the infected person either directly or indirectly to selected others. Disclosure generally serves as an entry point to care and treatment programs as well as client support programs; it also serves to promote HIV testing of sexual partners hence aid in HIV prevention.

2.4.2 Some advantages of HIV status disclosure

The advantages of HIV status disclosure are many. HIV status disclosure is the main entry point to HIV care and support programs and within care programs, disclosure has been shown to improve adherence to clinic visits and antiretroviral therapies (Adam *et al.*, 2003, Bouhnik *et al.*, 2002, Waddell and Messeri, 2006, Kumar *et al.*, 2006). Improved adherence usually leads to

reduced morbidity and mortality associated with HIV/AIDS, and delays development of resistance to the life-saving antiretroviral drugs. Similarly, PLHIV who have disclosed have been reported to undergo less stress, make fewer clinic visits and generally have good immunological response (Pennebaker *et al.*, 1990). Linkages to social support usually occurring after disclosure of chronic diseases usually help improve adherence to therapy (Fennell *et al.*, 1994) as well as encourage healthy behavior including safer sex practices.

The ultimate prevention goal of disclosure is to ensure that people take precautions to protect themselves and others from primary or even secondary HIV infection. Using a mathematical model Pinkerton and Galletly (Pinkerton and Galletly, 2007) found that disclosure in itself can reduce per-sexual-act risk of HIV transmission by between 34.6 to 78.2%. Whereas some studies have reported a positive correlation between disclosure and safer sex behaviors (Kalichman and Nachimson, 1999, Kumar *et al.*, 2006, Niccolai *et al.*, 1999), other authors have found that disclosure in itself does not automatically lead to risk reduction (Stein *et al.*, 1998).

2.4.3 Disclosure targets

In terms of disclosure targets, literature has shown that most clients disclose to their steady sexual partners (Mansergh *et al.*, 1995, Gaskins, 2006, Hays *et al.*, 1993, Schnell *et al.*, 1992), and that clients are more likely to disclose to their

steady partners than to casual partners (Kalichman and Nachimson, 1999, Deribe *et al.*, 2008). Moreover, it has been reported that most PLHIV's choose sexual partners as the first target for disclosing (Maman *et al.*, 2003, Miller and Rubin, 2007, Gaskins, 2006) this is especially so among those who are either married or cohabiting. Of the family members who are disclosed to; mothers and sisters were the most likely targets compared to fathers (Hays *et al.*, 1993). In addition, a study done in Tanzania showed that PLHIV were likely to choose people of the same sex as themselves as disclosure targets (Lie and Biswalo, 1996). Family members, especially in the African setup, are usually key decision makers in facilitating access to medical treatment and providing palliative care.

2.4.4 Prevalence of disclosure

Disclosure can be to relatives, health workers, friends or employers, but of great public health significance is disclosure to sexual partners. HIV/AIDS disclosure has been widely studied in various sub populations: gay and bisexual men, (Wolitski *et al.*, 1998, Marks *et al.*, 1994), men, (Marks and Crepaz, 2001), women (Moneyham *et al.*, 1996, Simoni *et al.*, 1995, Gielen *et al.*, 2000, Sowell *et al.*, 2003) and both men and women (Deribe *et al.*, 2008, King *et al.*, 2008, Miller and Rubin, 2007, Bouillon *et al.*, 2007, Elford *et al.*, 2008). Studies from both within and outside Africa that examined disclosure at the two levels of disclosure to anyone (overall disclosure) and disclosure to sexual partners have reported varying prevalence of disclosure. The prevalence of disclosure reported in some of these studies was; 69.7% and 84.6%

(Bouillon *et al.*, 2007), 94.5% and 90.8% (Deribe *et al.*, 2008), 88% and 73.6% (Elford *et al.*, 2008) and, 96.4% and 69% (King *et al.*, 2008), as overall disclosure and disclosure to sexual partners respectively. These, together with other studies (Marks *et al.*, 1991, Simoni *et al.*, 1995, Mansergh *et al.*, 1995, Stein *et al.*, 1998) have shown that non disclosure of HIV seropositivity at least to some sexual partners is common, and that sex without disclosure is common in both exclusive and non exclusive partnerships (Ciccarone *et al.*, 2003). In East Africa, a study done on antenatal mothers in Kenya reported a disclosure-prevalence of 27% to sexual partners after two years of follow-up (Temmerman *et al.*, 1995) while a four year follow-up study on antenatal mothers in Tanzania showed a prevalence of disclosure of 42% to sexual partners, for those who tested HIV positive (Antelman *et al.*, 2001). A more recent study done in Uganda among both male and female clients reported a 69% prevalence of disclosure to sexual partners (King *et al.*, 2008).

Factors that motivate patients to disclose their HIV status include, a sense of duty (Serovich and Mosack, 2003), to protect the significant other from the virus, reduce anxiety associated with non disclosure and or obtain social/material support (Miller and Rubin, 2007). PLHIV's also disclose to allow their sexual partners to make informed choices about HIV prevention (Marks *et al.*, 1991, Neville Miller and Rubin, 2007).

2.4.5 Factors associated with HIV status disclosure

When do people disclose? Serovich (Serovich, 2001) advances the theory of disease progression in timing of disclosure i.e. as the disease progresses and the symptoms and signs become apparent, making it necessary to go to hospital many times; clients are compelled to disclose. This association between advanced disease and disclosure is also supported by findings from other studies (Deribe *et al.*, 2008, O'Brien *et al.*, 2003). However, with the advent of highly efficacious ART regimens which have been shown to prolong lifespan of patients and even "hide" the "tell tale" signs, it is then apparent that many PLHIV's will no longer be compelled to disclose due to signs and symptoms alone. In support, a study on women in Abidjan found no association between stage of disease and disclosure (Brou *et al.*, 2007) and in a study conducted in France, no association was found between stage of disease and disclosure but reported that hospitalization after HIV diagnosis increased the likelihood of disclosure (Bouillon *et al.*, 2007).

According to some authors, those with higher education are more likely to disclose (Akani and Erhabor, 2006, Bouillon *et al.*, 2007). This observation has been refuted by other studies that reported no association between disclosure and level of education (Antelman *et al.*, 2001, Stein *et al.*, 1998).

On the relationship between disclosure and marital status and or sexual relationships; it has been found that PLHIV who are married are more likely to disclose (Kumar *et al.*, 2006). Within marriage, clients in monogamous relationships are more likely to disclose as opposed to those in polygamous relationships (Brou *et al.*, 2007, Mohammed and Kissinger, 2006). Similarly, within sexual relationships; PLHIV's tend to disclose more readily to their steady partners than to casual partners (Deribe *et al.*, 2008, Gaskins, 2006, Kalichman and Nachimson, 1999). Disclosure has also been positively correlated with sexual activity (Mohammed and Kissinger, 2006) but negatively correlated with the number of sexual partners in many studies (Marks *et al.*, 1991, Mohammed and Kissinger, 2006, Simbayi *et al.*, 2007, Antelman *et al.*, 2001, Kalichman *et al.*, 2007, Olley *et al.*, 2004).

On age, some studies have reported that older patients (Emlet, 2006, Kumar *et al.*, 2006) or patients diagnosed at an older age (Bouillon *et al.*, 2007) were unlikely to disclose. On the contrary, other studies have reported that younger patients were unlikely to disclose (Preau *et al.*, 2008, Wong *et al.*, 2009).

Residing in a rural area was associated with non-disclosure in South America (Gaskins, 2006), Similarly, two studies done in South Africa found a higher level of disclosure among urban residents as compared to rural residents (Lurie *et al.*, 2008, Wong *et al.*, 2009). This was probably due to the high levels of stigma, usually more marked in rural areas. Stigma in itself has been negatively associated with willingness to disclose (Yang *et al.*, 2006).

On gender, some studies have reported that women are more likely to disclose their HIV status (Akani and Erhabor, 2006, Stein *et al.*, 1998, Bouillon *et al.*, 2007) than men (Olley *et al.*, 2004).

Table 1.1 below summarizes some of the factors associated with HIV status disclosure from published literature.

Table 1.1: Summary of factors associated with HIV Status disclosure from literature

Factor	Authors and year	Study population	Study site
Gender	(Akani and Erhabor, 2006)	Males and females	Africa: Nigeria
	(Bouillon *et al.*, 2007)	Males and females	France
	(Stein *et al.*, 1998)	Males and females	U.S.A
	(Olley *et al.*, 2004)	Males and females	Africa: S. Africa
Education	(Akani and Erhabor, 2006)	Males and females	Africa: Nigeria
	(Bouillon *et al.*, 2007)	Males and females	France
Number of sexual partners	(Marks *et al.*, 1991)	Males only	U.S.A
	(Mohammed and Kissinger, 2006)	Males and females	U.S.A
	(Simbayi *et al.*, 2007)	Males and females	Africa: S. Africa
	(Olley *et al.*, 2004)	Males and females	Africa: S. Africa
Types of relationships, marriage	(Akani and Erhabor, 2006)	Males and females	Africa: Nigeria
	(Brou *et al.*, 2007)	Women only	Africa: Cote d'Ivore
	(Deribe *et al.*, 2008)	Males and females	Africa: Ethiopia
	(Kumar *et al.*, 2006)	Women only	Barbados
	(Mohammed and Kissinger, 2006)	Males and females	U.S.A
	(Niccolai *et al.*, 1999)	Males and females	U.S.A
	(Olley *et al.*, 2004)	Males and females	Africa: S. Africa
Age	(Bouillon *et al.*, 2007)	Males and females	France
	(Kumar *et al.*, 2006)	Women only	Barbados
	(Emlet, 2006)	Males and females	Pacific Northwest
	(Maman *et al.*, 2003)	Women only	Africa: Tanzania
	(O'Brien *et al.*, 2003)	Males and females	U.S.A
Stage of disease	(O'Brien *et al.*, 2003)	Males and females	U.S.A
	(Deribe *et al.*, 2008)	Males and females	Africa: Ethiopia
Duration with Disease	(Emlet, 2006)	Males and females	Pacific Northwest
	(Gaskins, 2006)	Men only	U.S.A

2.4.6 Reasons for non-disclosure

Not only does disclosure provide opportunities for social support, it does also at times provide fertile ground for rejection, abandonment, ostracism, violence and others, hence non-disclosure. Reasons for non-disclosure vary widely, but are mainly real or perceived fear for discrimination (Hays *et al.*, 1993), rejection (Sobo, 1995), violence by partners and others (Gielen *et al.*, 1997, Sowell *et al.*, 1999) and retribution to women (Gielen *et al.*, 2000, Gielen *et al.*, 1997, Moneyham *et al.*, 1996, Zierler *et al.*, 2000). Still, two studies done in Tanzania and Botswana showed spouses to be supportive after being informed of their partners HIV positive results with majority of the marriages remaining stable thereafter (Kilewo *et al.*, 2001, Nebie *et al.*, 2001). Equally so, Medley (Medley *et al.*, 2004), in a meta-analysis of 17 studies from peer reviewed journals, observed that the negative outcomes of disclosure were generally fewer than initially feared.

HIV status disclosure has been extensively studied in the western countries. To the contrary, little is known about HIV/AIDS status disclosure in Kenya, more especially in a general clinic set-up in a rural population. Available literature in Kenya shows that the country's understanding of HIV status disclosure and factors associated with disclosure is limited and related literature in this study area is remarkably scarce (Farquhar *et al.*, 2000, Galliard *et al.*, 2000, Marjan and Ruminjo, 1996, Miller and Rubin, 2007, Neville Miller and Rubin, 2007, Temmerman *et al.*, 1995). This study sought to determine levels disclosure of

one’s HIV status to anyone and to sexual partners, as well as identify factors that promote or hinder disclosure. It will also determine the role of various counseling programs on HIV/AIDS status disclosure.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Study site

The study was conducted at Kilifi District Hospital's HIV clinic also known as Comprehensive Care and Research Centre (CCRC). The clinic is the main site in the district that is providing ART and is currently catering for more than 80% of all HIV positive clients on follow-up in the district. The clinic is also one of the sentinel surveillance sites for PMTCT in the country, and as such helps inform the country's HIV prevalence during the inter-census periods.

To date, the clinic has enrolled more than five thousand patients of all ages with about a third of all enrolled clients having been started on ART. On a monthly basis, about 1000 PLHIV seek various services at the clinic.

It is also a site for many ongoing research projects. At this clinic, routine socio-demographic and clinical details are collected at every visit and maintained in a database.

3.2 Study design

The study design used was analytic cross sectional study. This study design was appropriate for determining prevalence of disclosure as well as finding associations between disclosure and identified factors.

3.3 Study population

Participants were adult HIV positive clients on follow up at the CCRC. These were mostly clients who had tested positive for HIV from the various testing

centers within the district then referred to the clinic for HIV care services. HIV testing in the district follows the Kenya's Ministry of Health guideline of either serial or parallel rapid testing using two different test kits, thus any Positive HIV test has to be confirmed by a second different test kit. At the time of the study the three rapid HIV test kits in use in the country were; Unigold®, SD Bioline® and Determine®. Most of the clients had been referred for HIV care and treatment services from the testing sites at the hospital.

3.3.1 Inclusion criteria

All adult PLHIV aged 18 years and above and on follow-up in the clinic and who consented were enrolled in the study.

3.3.2 Exclusion criteria

- Children i.e. PLHIV less than 18 year of age
- PLHIV who were too sick to be interviewed. These were either incoherent or were too sick to withstand the interview process
- Recent (less than six months) transfers-in to the clinic
- Those who did not consent to participate in the study

3.4 Sampling of the study population

3.4.1 Sampling Method

Every morning (throughout September 2008), a study investigator would introduce the research to all the PLHIV who had presented for care on that day. Clinic staff would then identify and refer every alternate client to the study investigator's room. Screening to find out if PLHIV met the study criteria was done in the study investigators room; age was determined by asking the PLHIV and those less than 18 years were excluded. Clients were also asked if they had transferred into CCRC from other HIV clinics. For those who transferred in, it was determined when they enrolled into the clinic and if this was found to be less than six months from the date of interview, they were excluded from the study. Clients who were too sick to speak or too weak to participate in the interview process were also excluded. While in the study room, specific details of the study including inclusion criteria were discussed and a written informed consent taken from those who met the study criteria. The whole interview process took about twenty minutes.

3.4.2 Sample size determination

Using the Fishers formula (Fisher A.A *et al.*, 1991) and prevalence of disclosure of 40% (Antelman *et al.*, 2001).

$$n= \{z^2. pq\}/d^2$$

Where:

n= the sample size needed.

z= 1.96 at 95% confidence interval

p = the proportion estimate to be found in the target population (0.4)

q= 1 – p (0.6)

d = the width of the confidence interval chosen (±5%)

n= 1.96*1.96*0.4*0.6/(0.05*0.05)= **369**

This gave a minimum sample size of **369** patients.

3.5 Data Management

3.5.1 Data collection methods

Variables that were known to be associated with HIV status disclosure from literature and also those that were suspected to be associated with disclosure were collected using two methods; questionnaire and database extraction.

A) Questionnaire

An interviewer administered questionnaire was used to collect various variables including; whether clients had disclosed, current marital status and duration of relationship, gender, number of sexual partners in the last month and year, condom use habit and during the last two sexual episodes, admission into the hospital after diagnosis with HIV, disclosure counseling, having children and others. Prior and after piloting, three socio-behavioral scientists reviewed the questionnaire to ensure conformity and ease of administration. The principal investigator and one socio-behavioral scientist trained the interviewers prior to commencement of data collection.

B) Database

At every clinic visit, routine demographic and clinical data is collected from the clients and stored in a database. Highest standards of confidentiality, quality assurance and control are maintained in the collection, storage and processing of data in the database. Variables extracted from the database

included; clients age, level of education, place of residence, date of diagnosis, current weight and height and whether on ART.

3.5.2 Variables

The two dependent variables in this study were disclosure to anyone and disclosure to sexual partners, both coded as yes or no.

Various independent variables falling into five categories as described below were collected.

Socio-demographic details such as: age at interview date, gender, education status, current marital status and duration of marriage or cohabiting where applicable, place of residence and whether participants had children.

Relationship factors such as; number of sexual partners in the last month and year and condom use habit and during the last two sexual episodes.

Disease related factors such as: date of diagnosis, current weight and height and whether clients were on ART.

Lastly, service related factors such as; Intake HIV counseling and testing, undergoing disclosure counseling and hospital admission after HIV diagnosis was also determined. Psychosocial support was assessed by asking whether patients belonged any support group.

3.5.3 Processing of Data from the existing database

Date of birth was extracted from the database then used to calculate the age in years. Education status and place of residence were also extracted from the database, using the place of residence stratification into rural and urban residence was done. The latest weight and height was used to calculate the patient's body mass index which was a clinical indicator in the study. The site of the last HIV test, prior to enrollment was used to stratify HIV testing into provider or client initiated testing approaches. Date when patients were diagnosed with HIV was also extracted from the database then used to calculate the duration patients had lived with HIV. Similarly, date of enrollment into the clinic was retrieved and used to calculate the duration of follow-up in the clinic. It was also determined from the database if patients were on ART as at the end of September 2008.

3.6 HIV Disclosure

PLHIV's were then asked whether they had disclosed their HIV status to anyone. For those who had disclosed it was determined if they had been sexually active in the past twelve months. The sexually active, were then asked if they had disclosed to their sexual partners defined as either a spouse or a cohabiting partner, or other regular sexual partners. Disclosure to other people such as siblings, parents, extended family members, friends, children and employers was also determined.

For those who had disclosed, they were asked about whom they had informed first and also whom they had chosen to be their treatment partner. A treatment partner is a person chosen by the PLHIV to accompany him/her during all counseling sessions, he/she also ensures that the patient takes the medications as prescribed and keeps clinic appointments. For PLHIV who reported having disclosed to sexual partners, determination of when and how disclosure occurred and also their partner's reaction to the disclosure was done. As an outcome of disclosure, the number of disclosure targets that were tested for HIV as a result of the disclosure was determined.

3.7 Interviewers training and piloting

Interviewers were nurses working at the clinic. These were nurses who had received basic research training and were routinely involved in the ongoing research programs at the clinic. Training of the interviewers and piloting of the data collection was done in the last week of August 2008 and data collection took place in September 2008.

3.8 Data processing and analysis plan

Data was entered into a computer using Epi info® version 3.3.2 (CDC, Atlanta, USA). Relevant data was also imported from the database into Stata version 9®. Data cleaning and analysis was done using both epi info® and stata® statistical softwares.

Disclosure was assessed at two levels;

- Disclosure to anyone (overall or general disclosure) reported as yes or no
- Disclosure to sexual partners for those who were sexually active, also coded as yes or no.

A variety of independent variables (described above) were analysed to determine their association with disclosure. Descriptive statistics for each independent variable was generated. Bivariate analysis was then conducted between each independent variable and disclosure status, using two independent sample t tests or Kruskal Wallis for continuous variables and Chi square or Fishers exact for categorical variables. Variables that were statistically significant at 95% confidence interval or p-value of <0.05 were then entered into a logistic regression model for multivariate analysis.

A two tailed p-value of <0.05 was considered statistically significant for both bi and multivariate analysis.

3.9 Informed Consent

Prior to participation in the study, written informed consent from all potential interviewees was sought; this was in the form of a signature for those who could write and a witnessed right thumbprint for the illiterate.

3.10 Protocol review and approval

Protocol approval and clearance to proceed with the work was granted by Ministry of Higher Education, Science and Technology vide their letter reference number: **MOHEST 13/001/ 38C 522/2 (Appendix 3).** Administrative clearance was also given by the local Ministry of Health, Ministry of Education and District Commissioners' office.

CHAPTER FOUR: RESULTS

4.1 Context

Data collection was done in September 2008. During this month, 96 PLHIV's were enrolled into the clinic comprising of 70 adults and 26 children. This brought the cumulative number of PLHIV ever enrolled into the clinic, since its inception in 2003, to 5,255 that is 3,979 adults and 1,276 children. The male to female ratio at the clinic was 1:3, and about half of all clients on follow-up were on ART. In September, 858 adult PLHIV came for follow-up.

A total of 435 adult PLHIV were approached for interview, 3(0.7%) declined, giving us a response rate of 99.3%. Ten questionnaires had to be excluded; three respondents had been interviewed twice and four did not exist in the database, these were omitted leaving 422 usable questionnaires.

4.2 Base-line characteristics of study participants

The baseline characteristics of the respondents are shown in table 4.1. Of the 422 participants interviewed, males were 116 (27.5). The median age was 36 years with an inter-quartile range of 30-44 years. Of all interviewed 252 (60%) were residing in the rural part of the district and 127(30%) had never attended any school. In all, 250(60%) were either married or cohabiting.

Table 4.1: Base-line characteristics among adult HIV positive clients, Kilifi district hospital, 2008

Characteristic	Number	Percentage (%)
Gender:		
• Male	116	27.5
• Female	306	72.5
Age: Median, inter-quartile ranges	36	30-44
Education:		
• No formal education	127	30
• Some primary education and above	290	70
Marital status		
• Cohabiting	25	6
• Married monogamous	170	40
• Married polygamous	55	13
• Separated/Divorced	62	15
• Single	30	7
• Widowed	80	19
Having children:		
• Yes	395	94
• No	27	6
Place of residence:		
• Rural	252	60
• Urban	153	36

4.5 Health system related factors among the study participants

Two hundred and thirty nine (57%) of the interviewees were tested through provider initiated testing program (PITC), where the testing is requested by a health-care provider. The median duration that these clients had lived with a diagnosis of HIV was 21.8 months (IQR=8.5-35.8), while the median duration on follow-up at the clinic was 20.6 months (IQR =6.9-32.8). In all, 235(57%) respondents were on ART. Only 63(15%) study participants reported belonging to patient support groups. Those that reported having attended disclosure counseling sessions within the clinic were 237(56%). Thirty (7%) clients had been admitted to hospital for whatever reason, after registration in the clinic. Table 4.2 below shows all the health system related factors among the clients interviewed.

Table 4.2: Health system related factors among adult PLHIV's, Kilifi district Hospital, 2008

Factor		Number(Median, mean) N=422	Percentage (%)
Intake HIV testing:	Provider initiated testing	239	57
	Client initiated testing	180	42
	Unknown(missing in database)	5	1
Being on ART: Yes		235	56
No		187	44
Belonging to a patient support group: Yes		63	15
No		359	85
Ever been admitted to hospital: Yes		30	7
No		392	93
Having undergone disclosure counseling: Yes		237	56
No		185	44
Duration living with HIV in months: median inter-quartile range		22	9-34
Duration on follow-up in months: median, inter-quartile range		20.6	6.9-32.8
Body mass index at last visit: mean 95% C.I		20.8	20.4-21.1

4.6 HIV Status Disclosure

Four hundred and one (95%) of the interviewees had disclosed their HIV status to at least one person and 276(65%) had disclosed to their sexual partners defined as either spouse/cohabiting partner or other regular sexual partners. When asked about who they informed first, the responses ranged from three (0.7%) for employers to 181(43%) for spouses. Generally, disclosure targets varied from nine (3%) to employers to 252(63%) to spouses. On who PLHIV chose to be their "treatment partners" i.e. the person most concerned about their treatment and progress; majority 153(36) had chosen their spouses with only one (0.2%) client choosing the employer as the treatment partner.

Table 4.3: HIV Status disclosure among adult PLHIV at Kilifi District Hospital's HIV clinic, 2008

	First to inform N=422		Disclosure targets N=422		Treatment Partners N=422	
Relation	**Number**	**%**	**Number**	**%**	**Number**	**%**
Spouse	181	43	252	63	153	36
Mother	51	12	166	41	40	10
Sister	38	9	177	44	37	9
Children	37	9	117	29	52	12
Brothers	35	8	166	44	27	6
Extended family	35	8	122	30	38	9
Other sexual partners	9	2	38	9	8	2
General friends	6	1	107	27	15	4
Father	3	0.7	61	15	4	1
Employer	3	0.7	12	3	1	0.2
Spiritual friends	0	0	39	10	2	0.5
None	0	0	0	0	24	6

4.7 HIV testing among the disclosure targets

HIV testing uptake was higher among the sexual partners i.e. primary partners (spouse or cohabiting partners) and other regular sexual partners (78% and 63% respectively). It was observed that the testing uptake was also high at 31% among the general friends that were disclosed to.

Table 4.4: HIV testing among disclosure targets, Kilifi District Hospital, 2008

Disclosure targets	Number disclosed to	Number tested	Proportion tested in %
Spouse or cohabiting partner	252	197	78
Mothers	166	20	12
Sisters	177	43	24
Children	117	173	148**
Brothers	166	20	12
Extended family	122	29	24
Other sexual partners	38	24	63
General friends	107	31	29
Fathers	61	7	11
Employer	12	0	0
Spiritual friends	39	4	10

**** It is the country's policy that all children less than 15 years borne of HIV infected parents, be brought for HIV testing, with or without disclosure.**

4.8 Timing of disclosure to sexual partners

Of the 276(65%) clients who had disclosed to their sexual partners, most 203(74%) disclosed on the same day they received the results with only six (2%) choosing to disclose more than a year after being diagnosed with HIV infection (Figure 4.1).

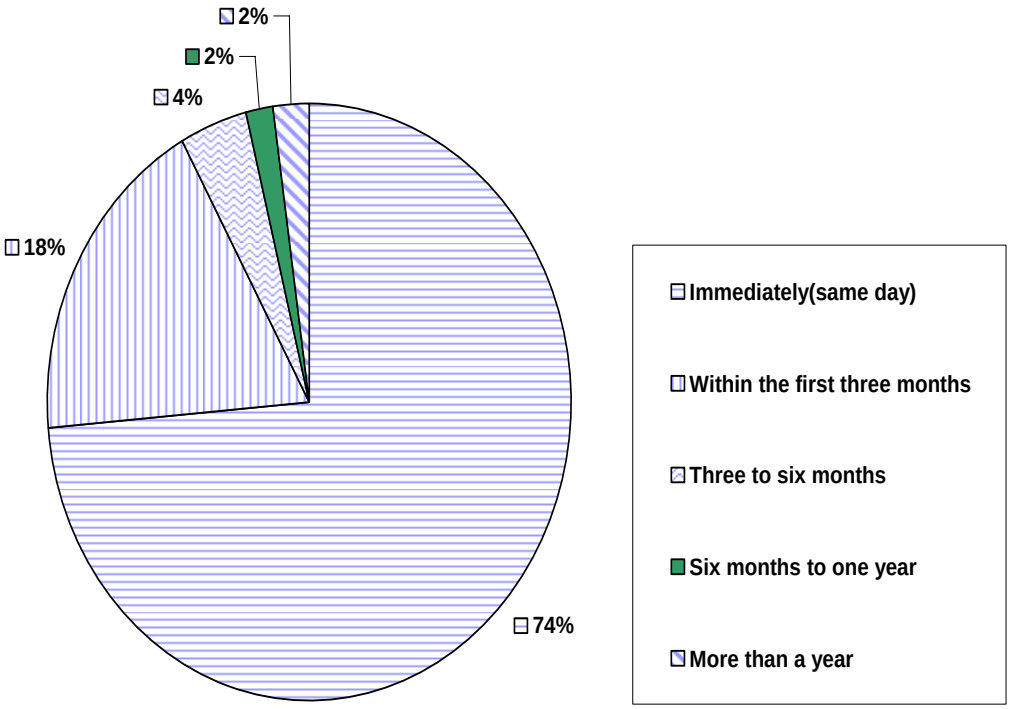


Figure 4.1: Timing of HIV status disclosure to sexual partners after HIV diagnosis, KDH, 2008

4.9 Partner's reaction to HIV status disclosure

Of the 276 PLHIV that had disclosed to their sexual partners, 247(89%) of their partners reacted supportively to the news of HIV infection and only 19(7%) of disclosure resulted in separation and or divorce as shown in figure 4.2.

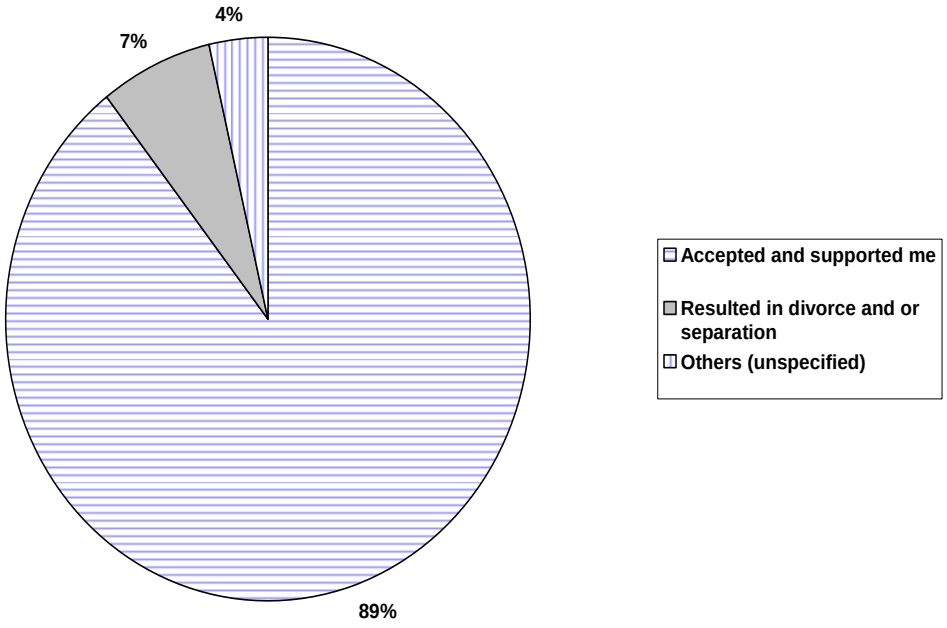


Figure 4.2: Sexual partner's reaction to HIV status disclosure, KDH, 2008

4.10 Factors associated with General/Overall HIV status disclosure

4.10.1: Bivariate analysis of factors associated with disclosure among adult respondents at KDH HIV clinic, 2008

The overall HIV status disclosure was positively associated with being married or cohabiting (p-value = 0.049), having children (p-value = 0.023), longer duration with a diagnosis of HIV or longer duration on follow-up at the clinic (p-value = <0.001), being on ART (p-value = 0.001) and being sexually active in the past year (p-value = 0.015). There was no significant association between disclosure and; level of education, type of residence (whether urban or rural), HIV testing approach, belonging to a support group or condom use. Table 4.5 and 4.6 below summarizes the results of the bivariate analysis.

Table 4.5: Bivariate analysis of socio-demographic and disease related factors associated with disclosure among adult PLHIV, KDH, 2008

Part A: Socio-demographic factors

Factor	Not disclosed N=21 (%)	Disclosed N=401 (%)	P-Value
Age in years[median(IQR)]	38 (31.2, 44.2)	36(30.3, 44.2)	0.742
Gender: Male	8(38.1)	108(26.9)	
Female	13(61.9)	293(73.1)	0.264
Marital status			
• Cohabiting	1(4.8)	24(6.0)	
• Married monogamously	7(33.3)	163(40.6)	Fishers
• Married polygamously	0(0.0)	55(13.7)	exact
• Separated/Divorced	5(23.8)	57(14.2)	0.087
• Single	4(19.0)	26(6.5)	
• Widowed	4(19.0)	76(19.0)	
Stable: Married or cohabiting	8(38.1)	242(60.3)	
Single, divorced or separated	13(61.9)	159(39.7)	0.043
Monogamous vs polygamous			Fishers
• Monogamous	7(100)	163(74.8)	exact
• Polygamous	0(0)	242(25.2)	0.199
Education			
• None	9(42.9)	118(29.8)	
• Some primary	7(33.3)	137(34.6)	Fishers
• Completed Primary	1(4.8)	71(18.0)	exact
• Some secondary	2(9.5)	35(8.8)	0.490
• Completed secondary & above	2(9.5)	35(8.8)	
Literacy: Some education & above	12(57.1)	278(70.2)	
No education at all	9(42.9)	118(29.8)	0.205
Residence: Rural	13(61.9)	239(62.2)	0.975
Urban	8(38.1)	145(37.8)	
Having children: Yes	17(80.9)	378(94.3)	F-
No	4(19.1)	23 (5.7)	exact 0.038

Table 4.5 Continued: Bivariate analysis of socio-demographic and disease related factors associated with disclosure among adult PLHIV, KDH, 2008

Part B: Disease related factors

Factor	Not disclosed n=21 Number (%)	Disclosed n=401 Number (%)	P-value
Duration with HIV in months: [Median(IQR)]	5(1.6, 18.4)	22(9.4, 33.2)	0.0001
Body mass index at last visit :[median(IQR)	20(19.6, 21.9)	20(18.6, 22.4)	0.508
On ART: Yes	3(14.3)	232(57.9)	F-exact
No	18(85.7)	169(42.1)	0.000
Admitted to hospital after diagnosis: Yes	0(0.0)	30(7.5)	F-exact
No	21(100)	371(92.5)	0.385

Table 4.6: Bivariate analysis of health service and behavioral factors in relation to HIV status disclosure among adult PLHIV, KDH, 2008

Factor	Not disclosed n=21 Number (%)	Disclosed n=401 Number (%)	P-value
Duration on follow-up in months [median(IQR)]	2.9(1.5, 15.0)	21.7(7.7, 33.5)	0.0001
Disclosure counseling: Yes	11(52.4)	226(56.4)	
No	10(47.6)	175(43.6)	0.720
Testing approach: PITC	11(52.4)	228(57.3)	
CITC	10(47.6)	170(42.7)	0.658
Belonging to a support group: Yes	2(9.5)	61(15.2)	F-exact
No	19(90.5)	340(84.8)	0.753
Sexually active: Yes	8(38.1)	258(64.3)	
No	13(61.9)	143(35.7)	0.015
Condom use generally:			
• Always	2(25)	136(52.7)	
• Most of the times	1(12.5)	39(15.1)	F-exact
• Rarely	2(25)	34(13.2)	0.185
• Never	3(37.5)	49(19)	
Condom use: Always	2(25.0)	136(52.7)	
Not always	6(75.0)	122(47.3)	0.159

4.10.2 Multivariate analysis of factors associated with HIV status disclosure among adult PLHIV at KDH HIV clinic, 2008

At bivariate analysis, those who were either married or cohabiting, having children, duration of follow-up in the clinic in months, being on ART and being sexually active were found to be significantly associated with HIV status disclosure at 95% confidence intervals(p-value<0.05). These factors were then fed into a logistic regression where being on ART (P-value 0.005) and longer duration on follow-up at the clinic (p-value = 0.032) remained independently associated with HIV status disclosure. Duration a patient had lived with HIV was excluded to avoid collinearity (interaction) with duration on follow-up. Table 4.7 below gives the output of the model.

Table 4.7: Multivariate analysis of factors associated with General HIV Status disclosure among adult PLHIV, KDH, 2008

Factor	**OR**	**95% C.I**	**P-Value**
Stable: Married or cohabiting	2.69	0.99, 7.3	0.051
Having children	3.15	0.88, 11.2	0.076
Duration on follow up	1.05	1.0, 1.1	0.032
Being on ART	7.02	1.8, 27.1	0.005
Being sexually active	2.37	0.87,6.43	0.09

4.11 Sexual activity among respondents

The study subjects who reported to have been sexually active in the past 12 months were 266/422 interviewees (63%). Males were more likely to be sexually active (p-value=0.007). Of the sexually active, 138 (52%) reported consistent condom use with every sexual intercourse. Number of sexual partners ranged from one to three and one to twelve in the last month and last year respectively. For those who reported to be sexually inactive 83(53%) had decided to abstain after diagnosis. Overall, 98 (23%) reported having a regular sex partner (people they were having sex with who were neither their spouses nor cohabiting partners) in the last year, out of which 38 (38.5%) had disclosed their status to them. Table 4.8 and 4.9 below summarizes the condom use habits and reasons for sexual inactivity amongst the interviewees.

Table 4.8: Condom use amongst sexually active adult PLHIV at KDH's HIV Clinic, 2008

Condom-use habit	**Number N=266**	**Percent**
1. Always	138	52.0
2. Most of the times	40	15.0
3. Rarely	36	13.5
4. Never	52	19.5

Table 4.9: Reasons for sexual inactivity, among adult PLHIV at KDH's HIV clinic, 2008

Reason	**Number N=156**	**Percent %**
1. Abstaining since date of diagnosis	83	53.2
2. Abstaining since separation/divorce	18	11.5
3. Abstaining since spouse's death	41	26.3
4. Others (not specified)	14	9.0

4.11.1 Bivariate analysis of factors associated with HIV Status disclosure among the sexually active in KDH HIV clinic, 2008

Of the 266 respondents who had reported being sexually active in the past year, 218(81%) had disclosed their HIV status to their sexual partners. This disclosure was examined for association against factors such as; socio-demographic, disease related, health service related and behavioral. As shown in table 4.10 and 4.11, disclosure to sexual partners was positively associated with being married or cohabiting (p-value = <0.001), having children (p-value = 0.006), and longer duration on follow-up at the clinic (p-value = 0.017). On the other hand, gender, level of education, type of residence, being on ART, disclosure counseling, belonging to a support group and condom use were not significantly associated with disclosure of HIV status to sexual partners.

Table 4.10: Bivariate analysis of socio-demographic and disease related factors in relation to HIV status disclosure to sexual partners among sexually active adult PLHIV at KDH HIV clinic, 2008

Part A: Socio-demographic factors

Factor	**Not disclosed N=48**	**Disclosed N=218**	**P-Value**
Age in years[median(IQR)]	34.2(28.7, 41.2)	35.2(30.2, 40.2)	0.9169
Gender: Male	16(33.3)	69(31.6)	
Female	32(66.7)	149(68.4)	0.821
Marital status			
• Cohabiting	4(8.3)	12(5.5)	
• Married monogamously	8(16.7)	134(61.5)	Fisher s exact
• Married polygamously	4(8.3)	37(17)	
• Separated/Divorced	11(22.9)	18(8.3)	<0.001
• Single	11(22.9)	8(3.7)	
• Widowed	10(20.8)	9(4.1)	
Stable: Married or cohabiting	16(33.3)	183(83.9)	
Single, divorced or separated	32(66.7)	35(16.1)	<0.001
Monogamous vs polygamous			
• Monogamous	8(66.7)	134(78.4)	F-exact
• Polygamous	4(33.3)	37(21.6)	0.471
Education			
• None	9(18.7)	48(22.4)	
• Some primary	20(41.7)	81(37.8)	
• Completed Primary	9(18.7)	44(20.6)	0.943
• Some secondary	5(10.4)	17(8)	
• Completed secondary & above	5(10.4)	24(11.2)	
Literacy: Some education & above	39(81.2)	166(77.6)	
No education at all	9(18.8)	48(22.4)	0.577
Residence: Rural	26(56.5)	126(61.2)	
Urban	20(43.5)	80(38.8)	0.561
Having children: Yes	41(85.4)	210(96.3)	
No	7(14.6)	8(3.7)	0.003

Table 4.10 continued: Bivariate analysis of socio-demographic and disease related factors in relation to HIV status disclosure to sexual partners among sexually active adult PLHIV at KDH HIV clinic, 2008

Part B: Disease related factors

Factor	**Not disclosed N=48 (%)**	**Disclosed N=218 (%)**	**P-Value**
Body mass index at last visit:[median(IQR)	20.7(19.0, 22.6)	20.5(18.9, 22.8)	0.6778
On ART: Yes	25(52.1)	112(51.4)	
No	23(47.9)	106(48.6)	0.929
Admitted to hospital after diagnosis: Yes	1(2.1)	16(7.3)	F-exact
No	47(97.9)	202(92.7)	0.324

Table 4.11: Bivariate analysis of health service related and Behavioral factors in relation to HIV status disclosure among sexually active adult PLHIV at KDH HIV clinic, 2008

Factor	**Not disclosed n=48 Number (%)**	**Disclosed n=218 Number (%)**	**P-value**
Duration on follow-up in months [median(IQR)]	17.3(3.9, 30.7)	22.4(11.5, 36.4)	0.0156
Disclosure counseling: Yes	23(47.9)	127(58.3)	
No	25(52.1)	91(41.7)	0.191
Testing approach: PITC	25(52.1)	119(55.4)	
CITC	23(47.9)	96(44.6)	0.681
Belonging to a support group: Yes	6(12.5)	33(15.1)	
No	42(87.5)	185(84.9)	0.640
Condom use generally:			
• Always	22(45.8)	116(53.2)	
• Most of the times	6(12.5)	34(15.6)	0.536
• Rarely	9(18.8)	27(12.4)	
• Never	11(22.9)	41(18.8)	
Condom use: Always	22(45.8)	116(53.2)	
Not always	26(54.2)	102(46.8)	0.354

4.11.2 Multivariate analysis of factors associated with HIV status disclosure to sexual partners among the sexually active adult PLHIV at KDH, 2008

At bivariate analysis, being married or cohabiting, having children, duration(in months) a client had lived with HIV and the duration a patient had been on follow-up in months were significantly associated with HIV status disclosure to sexual partners at 95% confidence intervals(p-value<0.05). All these factors were then fed into a logistic regression model where being married or cohabiting (p-value = <0.001) and longer duration of follow-up in months (p-value = 0.024) remained independently associated with HIV status disclosure to sexual partners (Table 4.12).

Table 4.12: Multivariate analysis of factors associated with General HIV Status disclosure among adult PLHIV, KDH, 2008

Factor	**OR**	**95% C.I**	**P-Value**
Stable: Married or cohabiting	12.2	5.6, 26.5	<0.001
Having children	2.43	0.65, 9.12	0.188
Duration on follow up in months	1.06	1.01, 1.11	0.024
Duration with HIV in months	0.98	0.94, 1.03	0.541

CHAPTER FIVE: DISCUSSION

In this study in which 422 HIV infected adults on follow up at the at Kilifi District Hospital's HIV clinic were interviewed to determine the prevalence of HIV status disclosure to anyone or to sexual partners and identify factors associated with the disclosure. It was established that 95% of respondents had disclosed to at least one person. Disclosure to sexual partners was found to be 65% but this rose to 81% for those who had been sexually active over the last year. For those who disclosed to sexual partners, 74% disclosed on the same day they were diagnosed with HIV infection. Spouses were in most times, the first to be informed, the main disclosure targets as well as the most likely choice as treatment partners. Amongst family members; mothers (41%), sisters (44%) and brothers (44%) were the most likely disclosure targets. A high number of respondents had disclosed their status to extended family members (30%).

The prevalence of disclosure especially to sexual partners is much higher than the 27.2% which was reported in a previous study done on antenatal women in Kenya (Temmerman *et al.,* 1995). In the Eastern African region, the disclosure prevalence has improved from earlier figures of 27.2% to a recent one of 90.8% in Ethiopia (Antelman *et al.*, 2001, Deribe *et al.*, 2008, Temmerman *et al.*, 1995, King *et al.*, 2008, Farquhar *et al.*, 2000, Galliard *et al.*, 2000). This could be due to widespread availability of ART which has transformed HIV into a manageable chronic condition, and possibly also be due to reduction of

HIV related stigma secondary to increase in awareness amongst the public. Although the prevalence of HIV status disclosure to sexual partners is high, the non-disclosure is a cause for concern, especially considering that this occurred in a group that reported to be sexually active and could therefore be fueling HIV transmission.

Spouses (primary partners) played a crucial role in the disclosure process; in most cases they were the first to be informed, chosen to be treatment partners as well as the most likely to be informed of the HIV diagnosis. This is supported by studies done elsewhere and in Kenya (Deribe *et al.*, 2008, Gaskins, 2006, Maman *et al.*, 2003, Miller and Rubin, 2007). A study done in Tanzania reported that women who had disclosed their HIV positive status experienced more violence than women who had not disclosed (Maman *et al.*, 2003). To the contrary, most of the PLHIV in this study reported that disclosure went well, with majority of their sexual partners reacting supportively to the news of HIV infection. This finding is in agreement with studies done elsewhere in Africa (Brou *et al.*, 2007, Deribe *et al.*, 2008, Kilewo *et al.*, 2001, Nebie *et al.*, 2001) which have reported less adverse events as a result of disclosure. Majority of those who disclosed chose to do it directly, which has been reported to be the preferred method of disclosure in Kenya (Miller and Rubin, 2007).

Regarding family members and others, this study in agreement with other studies done elsewhere (Akani and Erhabor, 2006, Hays *et al.*, 1993, King *et*

al., 2008) in which it has been established that clients were more likely to disclose to sisters, brothers and mothers than to fathers. Contrary to a study done in Tanzania, this study did not find a pattern of same sex preference in choosing disclosure targets (Lie and Biswalo, 1996). This study also found relatively high disclosure rates to children, general friends and extended family. The general friends could have been fellow HIV positive clients at the clinic. The observation of high disclosure rates to extended family, underscores the possible role of the extended family in the fight against HIV/AIDS.

Majority chose to disclose on the same day they received the results and the reaction from their partners was supportive, this is in agreement with findings from a recent Ugandan study (King *et al.*, 2008). Same day disclosure underscores the role of pre and post HIV test counseling in ensuring disclosure takes place at the earliest time possible, thus aid in prevention of HIV spread.

There was a positive association between marriage and disclosure, a finding that has also been reported in other studies both within and outside Africa (Akani and Erhabor, 2006, Mohammed and Kissinger, 2006). Conversely, another study done in South Africa, on a much smaller sample size, showed that non- disclosure was associated with being married (Olley *et al.*, 2004). Clients who were either married or cohabiting were more likely to disclose compared to those who were single, divorced or widowed. Within marital relationships, this study found no difference in disclosure patterns among those in monogamous and polygamous relationships, unlike other studies that

reported that those in polygamous relationships were unlikely to disclose (Antelman *et al.*, 2001, Brou *et al.*, 2007, Mohammed and Kissinger, 2006).

At the general level, clients on ART were likely to have disclosed to someone. This could be due to the practice that, prior to initiation of ART, patients at this clinic are encouraged to identify and bring a "treatment partner" for all adherence counseling sessions. Generally, HIV status disclosure is associated with increased social support, which in turn increases adherence to anti retroviral therapy (Waddell and Messeri, 2006, Stirratt *et al.*, 2006). In a study done on HIV positive children in Uganda a positive association between ART adherence and disclosure was demonstrated (Bikaako-Kajura *et al.*, 2006) and in Tanzania disclosure of HIV status was found to be protective against virologic failure (Ramadhani *et al.*, 2007). The association of ART and disclosure was not observed amongst the sub-group that reported to have been sexually active in the last year, meaning the many benefits of disclosure are not being realized in this sub-population. A study done in South Africa on both male and female patients also found no association between disclosure and being on ART (Skogmar *et al.*, 2006), this however, was not examined for relationship with sexual activity.

In this study, there was no association between attending disclosure counseling sessions and HIV status disclosure, this is unlike a study that showed a positive association between disclosure and disclosure counseling services (Mohammed and Kissinger, 2006). This is despite the clinic holding regular patient sessions

on disclosure. Bearing in mind that disclosure counseling has been associated with increased level of disclosure (Mohammed and Kissinger, 2006, Perry *et al.*, 1994) the inability of this study to get similar findings may mean that disclosure-counseling sessions are not properly given at this clinic.

Moreover, in this study, disclosure was not associated with the type of intake counseling; whether client or provider initiated testing. This is rather unexpected since client initiated programs (VCT) tend to focus more on counseling about risk reduction and disclosure but could imply that the PITC approach is equally effective at improving disclosure. VCT clients unlike PITC clients are more likely to have discussed HIV testing with their partners prior to undergoing an HIV test. This prior discussion has been associated with an increased likelihood of disclosure (Maman *et al.*, 2003).

The duration a client had lived with a diagnosis of HIV and/or the duration a client had been on follow-up was positively associated with disclosure in this study, this finding is similar to findings from studies done in Pacific Northwest and Uganda respectively (Emlet, 2006, King *et al.*, 2008). This could be because PLHIV's usually take time to adjust to their diagnosis, as well as in choosing who to disclose to. Persistent exposure to HIV services at a clinic is also likely to improve emotional support from other HIV Positive clients and health workers hence encourage disclosure and possibly an increase in safe sex practices. A study in Mombasa, Kenya, reported a significant reduction in unsafe sex practices among PLHIV who were on ART and on follow up at a clinic (Luchters *et al.*, 2008). The positive behavioral effect of clinic follow-up

could be partly due to exposure to ongoing counseling at the clinic level promoting safe sex behaviors as well as disclosure.

The two clinical indicators in this study ie BMI at last visit and whether patients had been admitted to the hospital after disclosure did not show any association. This is contrary to other studies that found a positive association between disclosure and stage of the disease, duration with disease and or hospitalization (Bouillon *et al.*, 2007, Deribe *et al.*, 2008, O'Brien *et al.*, 2003, Gaskins, 2006, Emlet, 2006). The difference in the clinical indicators used in these studies could explain the different results, these other studies had used CD4 counts as their clinical indicators.

This research found no statistically significant association between disclosure of HIV status and age. In other literature, it has been shown that disclosers are more often of younger age (Kumar *et al.*, 2006, Emlet, 2006, Bouillon *et al.*, 2007). In his study, Bouillon reported that patients diagnosed at an older age were unlikely to disclose (Bouillon *et al.*, 2007).

The finding that disclosure was not associated to gender is contrary to other studies that showed that women were more likely to disclose (Bouillon *et al.*, 2007, Stein *et al.*, 1998) than men (Olley *et al.*, 2004).

There was no association between condom use and disclosure amongst the sexually active study participants, signifying that disclosure in itself did not

lead to risk reduction behavior. This finding although supported Stein et al (Stein *et al.*, 1998), is refuted by other studies (Kiene *et al.*, 2006, Kumar *et al.*, 2006, Niccolai *et al.*, 1999, Lurie *et al.*, 2008) which have demonstrated that clients who have disclosed were more likely to practice safer sex.

The sexually active in this study, were more likely to disclose. This is in agreement with findings from a study in rural Louisiana (Mohammed and Kissinger, 2006). On the contrary, a recent study done in Uganda found that the sexually active were unlikely to disclose (King *et al.*, 2008), it could be that this group of patients practiced safe sex hence seeing no need to disclose. Males, in this study were more likely to be sexually active. However, as earlier stated gender in itself was not associated with disclosure.

CHAPTER SIX : CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 CONCLUSIONS

6.1.1 General disclosure

This study found that majority (95%) of the respondents had disclosed their HIV status to at least one other person, most (63%) had disclosed to their spouses. Other disclosure targets were; sisters (44%), brothers (44%), mothers (41%), extended family members (30%), children (29%), general friends (27%), fathers (15%), spiritual friends (10%) other sexual partners (9%) and employers (3%).

At bivariate analysis the overall disclosure prevalence of 95% was positively associated with being married or cohabiting, being on ART, having children, being sexually active or having been on follow up for longer. While at multivariate analysis longer duration on follow-up and being on ART remained independently associated with overall HIV status disclosure.

There was no significant association between HIV status disclosure and age, place of residence(whether urban or rural), level of education, body mass index at last clinic appointment and any admission to hospital after being diagnosed with HIV. HIV testing approach, whether client or provider initiated testing, having attended disclosure counseling and gender was also not significantly associated with HIV status disclosure.

6.1.2 Disclosure to sexual partners

Of the 266 respondents who reported to have been sexually active, 218 (81%) had disclosed their status to their sexual partners. This 81% prevalence of disclosure was positively associated with being married or cohabiting, having children and longer duration on follow-up at bivariate analysis, while at multivariate analysis being married or cohabiting and longer duration on follow-up remained independently associated with HIV status disclosure to sexual partners.

Similarly, there was no significant association between HIV status disclosure and age, place of residence(whether urban or rural), level of education, body mass index at last clinic appointment and any admission to hospital after being diagnosed with HIV. HIV testing approach, whether client or provider initiated testing, having attended disclosure counseling and gender was also not significantly associated with HIV status disclosure to sexual partners.

6.2: RECOMMENDATIONS

The high level (95%) of general disclosure is encouraging, the same cannot be said of disclosure to sexual partners (81%). There is need to look at ways of improving this prevalence of disclosure at both levels to realize the many public health benefits of disclosure.

6.2.1 General Recommendations

HIV prevention

The study found that only 52% of the sexually active consistently used condoms when having sex, and that condom use was not associated with HIV status disclosure. This implies that unsafe sexual behaviors are practiced among this group. There is need therefore to intensify prevention efforts, focusing on consistent condom use among the PLHIV in an attempt to curb the spread of HIV infection from the source.

Disclosure counseling

The clinic routinely holds counseling sessions focusing on disclosure and partner notification. The finding that these sessions did not positively affect disclosure should serve as an eye opener for the clinic staff. This warrants a formal evaluation of this intervention with a view to make it more effective. Although this study did not show it, counseling is one intervention that has been shown to improve HIV status disclosure(Mohammed and Kissinger,

2006), therefore reviewing the approach and the way it is conducted may help improve disclosure. Especially if targeted on potential non-disclosers who this study identified as PLHIV who were not on ART, sexually inactive, whose marital status was single, divorced or widowed or newly registered in the clinic.

Timing of disclosure

Most PLHIV disclosed on the same day that they received their HIV positive results. This finding underscores the role of HIV testing approach in disclosure. Pre and post HIV test counseling should therefore put more emphasis on HIV status disclosure, with a special focus on those identified as potential non-disclosers in this and other studies.

HIV testing of children

Although it is the country's recommendation that parents who are HIV infected bring all their children aged less than fifteen years of age for HIV testing, this study found that less than half of those who had children, had brought at least a child for testing. There is need therefore to strengthen this specific arm of HIV/AIDS management to ensure children are enrolled into care programs early when the benefits are many.

Patient's support groups

Only 15% of respondents reported belonging to any support group. This is much lower than expected. Patient support groups have been identified as a key intervention in promoting disclosure as well as influencing safe sex behaviors through peer and social support (WHO, 2003). The clinic therefore needs to assist the support groups to become active and self-sustaining hence improve social support for the patients on follow up.

Antiretroviral therapy

The lack of significant association between disclosure and use of ART in the sexually active group may mean that the adherence benefits (Waddell and Messeri, 2006, Stirratt *et al.*, 2006) associated with disclosure are not being realized. A formal evaluation to assess adherence levels to both the drugs and clinic appointments is therefore indicated.

Family support

The relatively high level of disclosure to extended family members underscores the role played by this special subset of the society in HIV/AIDS management. This means the target for interventions should be the entire society and not the nuclear family as has been the case.

6.2.2 Populations to target

At general disclosure level those not on ART and at both disclosure levels, patients who were recently or newly registered and those who were single, separated/divorced or widowed were unlikely to disclose. Identifying this subset of the clinic population and targeting interventions to them may help reduce non-disclosure. Counseling at enrollment and follow-up visits must therefore focus on partner notification and safe sex practices together with enhancing linkages to existing patient support groups for peer support. Assisted disclosure such as anonymous couple testing should also be offered to those afraid of disclosing.

6.2.3 Policy formulation

This research found a small proportion of the sexually active had not disclosed to their sexual partners. Moreover, disclosure was not associated with condom use, meaning unsafe sex practices, among PLHIV still existed. To date, most of the HIV prevention strategies except PMTCT tend to focus on the HIV negative people. This study demonstrates the need for a policy formulation focusing on “Prevention With Positives” aiming to increase disclosure, safe sex and probably adherence to ART and ultimately reduce HIV transmission**.**

6.3: LIMITATIONS

This study's findings ought to be interpreted with caution. The choice of a cross sectional study design, although appropriate for determining prevalence and finding associations it cannot determine causal relationships.

Compared to the clinic population for the month of September; the whole study population was generally older (p-value = 0.008) and more likely to be on ART (P-value<0.001). The male-female composition was comparable (p-value = 0.407). The sexually active sub-set of the study population was comparable with the clinic population in age (p-value 0.6015) and gender (p-value 0.05) but was more likely to be on ART (p-value 0.008). The study findings for the whole study population therefore apply to patients who were older and on ART, while the findings for the sexually active sub-population apply for patients on ART.

The study used self-reporting as a method of data collection. Self-reporting is likely to underestimate risky behavior and non healthy practices. All attempts were made to verify the self reports using the routinely collected data from the database. The use of well-trained interviewers also helped minimize this bias.

The focus of this study was HIV positive clients on follow up at a clinic. In a country like Kenya where majority of those infected, do not know that they are(National AIDS and STI Control Programme, 2008), generalization of these finding is not possible. Besides, the study did not study patients who were lost to follow-up for whatever reasons. The KDH HIV clinic also hosts many ongoing research activities; it is possible that the quality of care being offered at this clinic is different from other government run clinics in the country.

However, to the best of my knowledge this is the first quantitative study looking at HIV status disclosure in a general clinic set up in this country, the findings are therefore important in directing interventions that will help increase disclosure and ultimately tap on the many benefits of HIV status disclosure.

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APPENDICES

Appendix 1 : Consent Form

CCRC Number:

Patient Information and Consent Form

What is Research?
Research involves clients and is different from normal treatment as it is the process we use to find better new treatments. You are registered at CCRC where care will be given to the highest standard that we can provide. I request your participation in research that might help us develop better ways to manage HIV infection in the future.

What will it involve for you?

If you agree to participate in this study we will ask you for permission to:

- Fill out a questionnaire about HIV/AIDS disclosure to ascertain disclosure status as well as identify barriers and motivations for the same, we also aim to identify challenges that patients go through in disclosing their HIV status to spouses and other family members
- Use information about you from your confidential clinical file at CCRC

In line with ministry of health regulations, all the information so collected shall be treated with highest levels of confidentiality and any future presentations and reports arising from this study shall not have any personal identifiers such as name, clinic numbers and locality in them.

Are there any risks or advantages if I take part?

The CCRC will provide care for you to the standards set out in the Ministry of Health National Guidelines. The benefits of the study are that information will be collected carefully and stored in an organized way. There are no other immediate benefits for the individual person participating in the research. We hope the research will lead to better HIV management at this clinic and for Kenyans in future.

Can I Choose if I take part or not?
Participation in this study is voluntary; non-participation will not in any way affect the clinical care given to you.

What if I have any questions?
You may ask any of our staff questions at any time. You can also contact the Doctors who are responsible your care and this research:

Dr Davies Kimanga and other CCRC staff –Kilifi District Hospital, P.O. Box.9, Kenya.

Telephone: 041 522 777 Mobile:

If you want to ask someone independent anything about this research please contact

Dr. Benjamin Tsofa(or Dasco)- District medical officer of Health- Kilifi district, P. O. BOX 9-80108, Kilifi, Tel number: 041 522248 Mobile

Consent declaration form.

I, _____ (name), have had "**Factors associated with HIV/AIDS disclosure among adult patients at Kilifi district hospital"** explained to me. I have understood all that has been read and had my questions answered satisfactorily. I understand that participation in this study is purely voluntary and that non-participation will not affect the care I receive from this clinic. **I agree to taking part in this study.**

Signature/thumb print: _____ Date: _____

Name: _____ Time: _____
(please print name)

I certify that the above was explained verbally to the client by _____ (Name of person taking consent), and that s/he understands the nature and the purpose of the study and consents to participation in the study. S/he has been given opportunity to ask questions which have been answered satisfactorily.

Staff Signature: _____ Date: _____

Only necessary if the patient cannot read:

I* attest that the information in this consent form was accurately explained to, and apparently understood by, the client, and that informed consent was freely given by the client.

Witness' Signature/Print _____ Date: _____

Witness' Name: _____ Time: _____
(please print name)

*The witness should be an independent member of staff who was not involved in gaining the consent.

NB: THE PATIENT SHOULD NOW BE GIVEN A SIGNED COPY TO KEEP

Appendix 2 : Questionnaire

FACTORS ASSOCIATED WITH HIV/AIDS STATUS DISCLOSURE AMONG ADULT PATIENTS AT KILIFI DISTRICT HOSPITAL HIV CLINIC.

Questionnaire No:☐☐☐ CCRC/FC Number: ☐☐☐

Interviewer: _____ Date of interview: ☐☐☐

Dd mm year

Instructions: Tick as appropriate where applicable, dates Minimum is Month and Year, No **Blanks**

PART A:

1. Gender: Male ☐ Female ☐

2. a) Marital status: (*Probe for details)*

☐ Single ☐ Married monogamous

Married polygamous ☐

☐ Separated/Divorced ☐ Widowed

☐ Cohabiting

c) How long have you been married/ cohabiting? ☐ Yrs

3. For how long have you known your HIV status? Months:☐ years: ☐

Were you initially tested as a couple? ☐ Yes No ☐

4. From the time you were registered in this clinic how many times have you been admitted to hospital? Number of admissions

B) Dates_____

5. Have you undergone counseling that encourages you to disclose? ☐ Yes No ☐

6.a) Do you belong to any support group ☐ Yes No ☐

b)Which one(tick as appropriate) ☐ Sisi kwa sisi

☐ Abuja

☐ Red Ribbon

☐ Soyo Soyo

☐ Tupendane

☐ Imani
☐ Jipe moyo Kilifi
☐ Jipe Moyo Roka
☐ Others_____

7. a) Do you have children? ☐ Yes ☐ No

Ages: Less than five years No ☐
5-14 years No ☐
>14years No ☐

PART B:

Have you disclosed your HIV status to anyone? ☐ Yes No ☐

8. Who have you informed of your HIV status?

a) Sexual partners and type

(i) Spouse/cohabiting partner ☐ Yes No ☐
(ii) Other sexual partner ☐ Yes No ☐

b) Family members

(i)Sister ☐ Yes No ☐
(ii)Brother ☐ Yes No ☐
(iii)Mother ☐ Yes No ☐
(iv) Father ☐ Yes No ☐
(v)Children ☐ Yes No ☐
Extended family *(uncles, aunties, grandparents, in laws etc)* ☐ Yes No ☐

c) Others

(i) Spiritual friends ☐ Yes ☐ No
(ii)General friends ☐ Yes ☐ No
(iii)Employer ☐ Yes ☐ No

9.a) Of all the above who did you inform first?_____

b) Of all these who is your treatment buddy? _____

10. At what point did you inform your **partner** of your status?

(i) Immediately ☐ Yes No ☐

(ii) Within the first three months ☐ Yes No ☐

(iii)Three to six months after knowing my diagnosis ☐ Yes No ☐

(iv) Six months to one year after knowing my diagnosis ☐ Yes No ☐

(v) More than a year after knowing my diagnosis ☐ Yes No ☐

11. a) How did you tell him/her? i) Direct ☐ ii) Indirect ☐ b) Describe_____

Direct: *if client told partner by herself or himself* ***Indirect:*** *If client had to enlist the help of a third party e.g., counselor, religious leaders, relatives etc.*

b) Did the client bring the partner to be tested together with he☐m? Yes ☐ No ☐

12. What did you tell your partner about your status? Partial☐ complete ☐

Partial*: e.g., "I have a chronic illness"* ***Complete:*** *"I have HIV/AIDS"*

13. Of the ones you informed of your status, Who has been tested?

a) Sexual partners and type

i)Spouse/cohabiting partner ☐ Yes No ☐

ii)Other sexual partners ☐ Yes No ☐

b) Family members

i) Sister ☐ Yes No ☐

ii) Brother ☐ Yes No ☐

iii) Mother ☐ Yes No ☐

iv) Father ☐ Yes No ☐

v) Children ☐ Yes No ☐

Extended family (uncles, aunties, grandparents, in laws etc) ☐ Yes No ☐

c) Others

i) Spiritual friends ☐ Yes No ☐

ii) General friends ☐ Yes No ☐

iii) Employer ☐ Yes No ☐

Total Number: ☐☐

14. After disclosing to your partner how did he/she react?

☐ Accepted and supported me

☐ Became violent, harmed me

☐ Resulted in separation and or divorce

☐ Others describe_____

Part C:

At this point, I shall ask you some personal questions about your sexual life, may I assure you again that whatever you tell me shall be absolutely private .

16.a) Apart from your spouse/cohabiting partner, do you have another regular sexual partner?

☐ Yes No ☐

b) How many different sexual partners have you had

a) In the last one month ☐

b) In the last one year ☐

If answer to 16b is "00" for both a and b then the answer to 17 & 18 is "Not Applicable". For these patients kindly move to question 19.

17. a) Did you use a condom the last time you had sex? ☐ Yes ☐ No

b) And the one before? ☐ Yes ☐ No

18. How best can you describe your condom use?

i. Always ☐ Yes No ☐

ii. Most of the times ☐ Yes No ☐

iii. Rarely ☐ Yes No ☐

iv. Never ☐ Yes No ☐

19. Why not applicable?

_____

_____

_____

Part D: From database

1. Age: ☐☐☐

2. What is your highest level of education attained?

☐ None ☐ Some primary

☐ Completed Primary ☐ Some secondary

☐ Completed Secondary and above

3. When were you diagnosed to be having HIV? ☐☐☐

dd mm year

4. Date of registration to the clinic: ☐☐☐

dd mm year

5. In the past twelve months, how many times have you made unscheduled visits to the clinic due to sickness? Yes ☐ No ☐

Number of visits:_____

6. In the last three clinic appointments are there times you failed to come as scheduled. Or as advised by the CCRC doctor Yes ☐ No ☐

7. What was the patients CD4 count: a) At registration ☐ b) Latest ☐

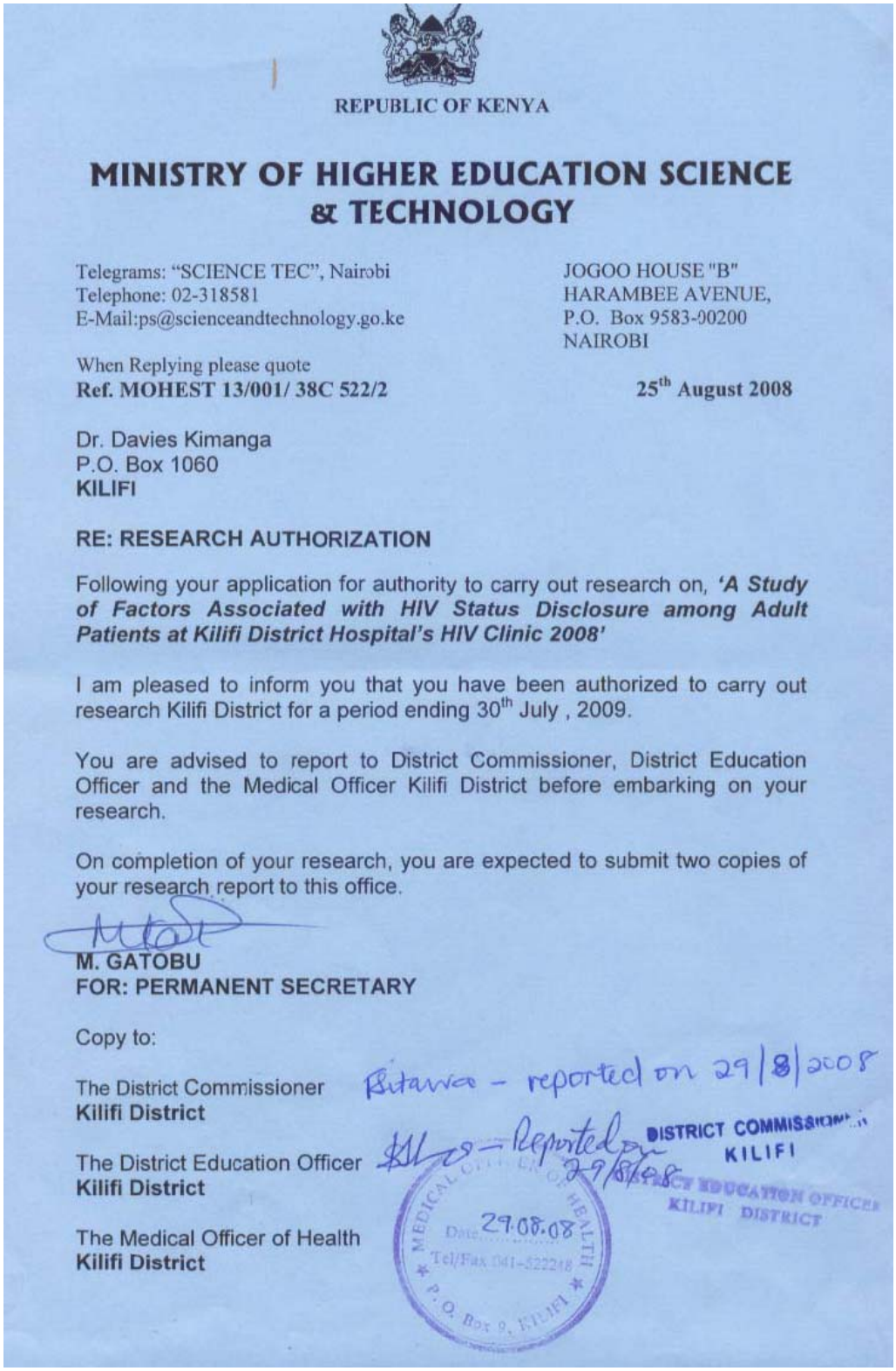
8. For how long have you been on follow up in this clinic? _____Yrs (*circle as appropriate*)

9. Where were you tested from?
☐ VCT ☐ PMTCT ☐ DTC/RTC ☐ TB ☐ Clinic
Others_____

10. a) Are you currently taking antiretroviral medication? ☐ Yes ☐ No

b) If so when did you start taking ART? ☐☐☐
dd mm year

Appendix 3 : Approval to carry out the research



REPUBLIC OF KENYA

MINISTRY OF HIGHER EDUCATION SCIENCE & TECHNOLOGY

Telegrams: "SCIENCE TEC", Nairobi
Telephone: 02-318581
E-Mail:ps@scienceandtechnology.go.ke

JOGOO HOUSE "B"
HARAMBEE AVENUE,
P.O. Box 9583-00200
NAIROBI

When Replying please quote
Ref. MOHEST 13/001/ 38C 522/2

25th August 2008

Dr. Davies Kimanga
P.O. Box 1060
KILIFI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on, ***'A Study of Factors Associated with HIV Status Disclosure among Adult Patients at Kilifi District Hospital's HIV Clinic 2008'***

I am pleased to inform you that you have been authorized to carry out research Kilifi District for a period ending 30th July , 2009.

You are advised to report to District Commissioner, District Education Officer and the Medical Officer Kilifi District before embarking on your research.

On completion of your research, you are expected to submit two copies of your research report to this office.

M. GATOBU
FOR: PERMANENT SECRETARY

Copy to:

The District Commissioner
Kilifi District

Ritawa - reported on 29/8/2008

DISTRICT COMMISSIONER
KILIFI

The District Education Officer
Kilifi District

Reported on 29/8/08

DISTRICT EDUCATION OFFICER
KILIFI DISTRICT

The Medical Officer of Health
Kilifi District

MEDICAL OFFICER OF HEALTH
Date 29.08.08
Tel/Fax 041-522248
P.O. Box 9, KILIFI