COMPLIANCE TO POSITIVE HEALTH, DIGNITY AND PREVENTION SERVICES AMONG HIV INFECTED INDEX PARTNERS IN HIV SERO-DISCORDANT RELATIONSHIPS IN NAIROBI COUNTY, KENYA

MAUREEN MUSIMBI AKOLO, (BSc.N)

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DECEMBER, 2015
DECLARATION

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

Signature ..................................... Date 4/12/2011

Akolo, Maureen Musimbi (Q57/CTY/PT/26064/2013)
Department of Community

SUPERVISORS:

We confirm that the work reported in this thesis was carried out by the candidate and has been submitted with our approval as University Supervisors

Signature ..................................... Date 4/12/2015

Dr. Justus O. S. Osero
Department of Community Health

Signature ..................................... Date 4/12/2015

Dr. Joshua Kimani
University of Nairobi Institute of Tropical and Infectious and Diseases (UNITID),
College of Health Sciences
University of Nairobi
DEDICATION

I dedicate this work to my two sons Daniel Amani and Israel Imani
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ABBREVIATIONS AND ACRONYMS

AIDS - Acquired Immunodeficiency Syndrome
ART - Antiretroviral therapy
BONEPWA - Botswana Network of People living with HIV and AIDS
CDC - Center for Disease Control
GNP+ - Global Network of HIV Positive people
GoU - Government of Uganda
HAART - Highly Active Antiretroviral Treatment
HIV - Human immunodeficiency virus
HPTN 052 - HIV Prevention Trials Network 052 study
HSV - Herpes Simplex Virus
KAIS - Kenya AIDS Indicator Survey
NACOST I - National Commission for Science, Technology and Innovation
NDP - National Development Plan
NEPHAK - National Empowerment Network of People living with HIV and AIDS in Kenya
NEPWHAN - Network of People living With HIV and AIDS in Nigeria
NIAAA - National Institute on Alcohol Abuse and Alcoholism
PEP - Post Exposure Prophylaxis
PHDP - Positive Health, Dignity and Prevention
PLHIV - People Living with Human Immunodeficiency Virus
PWP - Prevention with Positive
RNA - Ribonucleic Acid
SSA - Sub Saharan Africa
STD - Sexually Transmitted Disease
STI - Sexual Transmitted Infection
TB - Tuberculosis
UNAIDS - United Nations Program on HIV/AIDS
UNITID - University of Nairobi (Institute of Tropical and Infectious Diseases)
USG - United States Government
VCT - Voluntary Counseling and Testing
DEFINITION OF TERMS

HIV: Human Immunodeficiency Virus

Sero-discordant: A term used to describe a couple where one of the partner's is HIV-positive and the other is HIV-negative

PLHIV: People living with Human Immunodeficiency Virus

Positive Health, Dignity, and Prevention (PHDP): A set of interventions that helps people living with HIV lead a complete and healthy life and reduce the risk of transmission of the virus to others.

Minimum package: This is when an index client has been offered at least four PHDP interventions in one visit to qualify for compliance to PHDP, this include Adherence, and any other three interventions

Index partner: A HIV positive individual in a HIV sero discordant relationship
ABSTRACT

The undertaken study evaluated compliance to Positive Health, Dignity and Prevention (PHDP) practice among index partners in HIV sero-discordant relationship in Nairobi County, Kenya. PHDP involves a set of interventions that helps people living with HIV lead a complete and healthy life besides reducing the risk of transmission of the virus to others. These interventions were adopted in Kenya in 2013 by the National AIDS and STI Control Program (NASCOP) and the United States Government (USG) affiliates that support HIV prevention programming by the Ministry of Health (MOH). The evaluation focused on demographic factors, knowledge, perception and challenges encountered while adopting PHDP practices among index client.

A cross sectional descriptive study that utilized both quantitative and qualitative methods of data collection. 370 index partners in sero discordant relationship were recruited from three clinics within Nairobi County. HIV infected clients in discordant relationships who were enrolled in the three clinics and had accessed services within the last 3 months were eligible for the study. The clinic's patient registry was used to contact sequentially those who met the inclusion criteria. Standardized data collecting tools were administered. Data was cleaned and analyzed using SPSS version 22.

The results showed that out of 370 respondents 19.7% were male. The mean age was 36.6 years and 40.1% had education level of primary school and below. The group exhibited high level of PHDP knowledge at 90.8% and above however, only 66.2% complied with PHDP practice. There was significant relationship between condom supply, condom demonstration and PHDP compliance at P values of 0.034 and 0.018 respectively. Further analysis showed those index partners who had no challenge in accessing condom demonstration and supply complied more to PHDP practice. Consistence condom use was at 53.4% and family planning uptake was at 83.8%. Twenty eight percent had multiple sex partners while 27.3% consumed alcohol. Compliance to PHDP among index partners in sero-discordant relationship is not well adopted. This calls for the policy makers and health care workers to evaluate PHDP services in order to scale it up. However, PHDP is a very core HIV intervention.
CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter provides the background of HIV/AIDS and Positive health, Dignity and Prevention. It outlines the problem statement of the study, justifications, research questions and objectives, significance of the study and its limitations. A conceptual framework is also provided.

1.2 Background

Positive health, dignity, and prevention (PHDP) is an evidence based intervention that helps people living with HIV lead a complete and healthy life and reduce the risk of transmission of the virus to others especially those in HIV sero-discordance relationships. PHDP is characterized by its systematic delivery of a range of combination, behavioral, and socio-cultural services within clinical and community settings (GNP+, 2009). The following interventions constitute the minimum package of services for PHDP in clinical setting; Condoms (and lubricant) and risk-reduction counseling, assessment of partner status and/or provision of partner testing or referral for partner testing, assessment for sexually transmitted infections (STIs) and provision of or referral for STI treatment (if indicated, and partner treatment if indicated), assessment of family planning needs and provision of contraception or safer pregnancy counseling or referral for family planning services and assessment of adherence and support or referral for adherence counseling (Remien, 2008).
Globally, 34 million people currently live with Human Immunodeficiency virus (HIV) of which 69% resides in Sub Saharan Africa (SSA) (UNAIDS, 2013) with hetero sexual exposure as the primary mode of HIV transmission. Kenya has an estimated adult HIV prevalence rate of 5.2% representing 1.2 million individuals infected with HIV (KAIS, 2012). Forty four percent of these infections were due to heterosexual sex within a union or regular partnership. (Bankole, 1999) has shown that high rates of HIV-1 transmission occur between HIV-discordant partners who are often in unstable relationships but unaware of both partner’s HIV -1 sero-status due to poor testing rates and challenges with disclosure. 61% of all HIV infected married or cohabiting couples in Kenya are considered to be discordant, this corresponds to about 260,000 couples nationwide (KAIS, 2012). Nairobi, the capital city of Kenya and the study area has a HIV prevalence of 4.9 % which is slightly below the national prevalence rate.

Since the early 80’s till recently, the understanding of HIV prevention as it relates to people living with HIV and in sero-discordance relationship has been inconsistent or ill-defined. In addition, policies and programs aimed at people living with HIV have been designed, for the most part, without the meaningful involvement of people living with HIV (GNP+, 2009). PHDP is a relatively new area of focus for HIV prevention programs. Historically, HIV prevention efforts focused on reducing HIV risk among individuals assumed to be HIV-negative (Slayker, 2003). Program planners were hesitant to target PLHIV with HIV prevention interventions due to concerns about victim-blaming and increasing stigma for PLHIV. In addition, the limited availability of HIV testing services globally meant that most PLHIV did not know their HIV status. Recently, however, antiretroviral therapy availability and associated care has been
scaled-up dramatically worldwide. In addition, efforts to mainstream HIV care and combat stigma have also been scaled up as prevention strategies under PHDP (GNP+, UNAIDS, 2009). Positive Health Dignity and Prevention argues that if you improve and if you maintain the dignity of the person living with HIV, and if you support the individual living with HIV around their broad health needs, this will result in a range of benefits including a reduction in the likelihood of new infections. In 2011, after consultations with PLHIV from around the world, GNP+ and UNAIDS released Positive Health, Dignity and Prevention (PHDP) document, a policy framework that promotes the rights, health and empowerment of PLHIV to take leadership roles in HIV prevention responses while creating a more conducive environment for HIV prevention efforts (GNP+, 2009). United States of America, Botswana, South Africa Nigeria, Uganda and Kenya are a few of the countries that have implanted PHDP into their care and treatment of HIV/AIDS package (GNP+, 2009).

1.3 Problem statement

HIV incidence rates among HIV-negative partners in HIV discordant relationships are high, even when couples are aware of their HIV discordant status and have access to condoms and voluntary counseling and testing (VCT) services (De Walque, 2006). In spite of these challenges, the fight against HIV/AIDS has now shifted from curative to preventive measures due to the rapidly mutating virus that has made it difficult to find a cure. Besides, a large proportion of new HIV infections in sub Saharan Africa still occur in stable heterosexual partnerships. The Kenya AIDS Indicator Survey of 2012 showed that half of HIV-infected Kenyans have partners who are HIV-uninfected. However,
the HIV negative partners in HIV discordant relationships are at a great risk of contracting HIV through sexual transmission. Factors influencing transmission in sero-discardant relationships include low risk perception (NIAAA, 2002) and social norms that contribute to low rates of HIV counseling and testing, resulting in large numbers of individuals being unaware of their HIV status (Matovu, 2010)

1.4 Justification

Positive health, dignity and prevention (PHDP) engages people who know and have accepted they are living with HIV, in prevention efforts. It involves supporting HIV-positive people to learn and practice how to live a healthy life and to minimize the risks of spreading the virus to others (Bernard, 2009).

Cohabiting couples often have low rates of condom use and continue to have unprotected intercourse, despite knowledge of their sero-status (Steen, 2011)

Some index patients in HIV sero discordance relationship suffer fear of stigma and discrimination which prevents or delays disclosure.

This lack of disclosure leads to unprotected sex (Mackenzie, 2007). Significant gains in the treatment and care of people living with HIV (PLHIV) and attention to and funding of ARV treatment has resulted in larger numbers of people living longer with HIV.
1.5. Research questions

1. What portion of index clients in sero-discordant relationships has adopted PHDP intervention in their daily life?

2. What is the level of knowledge on PHDP practices among the index clients in sero-discordant relationship?

3. What are the perceptions of PHDP interventions among index clients in sero-discordant relationships?

4. What challenges have index partners in HIV sero discordant relationships experienced while complying with the PHDP practice?

1.6. Hypothesis

Awareness or knowledge of PHDP interventions is not associated with compliance among index partners in HIV sero-discordant relationship

1.7 Objectives

1.7.1 Broad objectives

To determine compliance to Positive Health, Dignity and Prevention services among index partners in HIV sero-discordant relationship in Nairobi County, Kenya

1.7.2 Specific objectives

1. To describe the extend of PHDP among index partners in sero discordant relationship
2. To establish the level of knowledge on PHDP among the index partners in HIV sero-discordant relationship

3. To assess the perception of Positive Health, Dignity and Prevention interventions among index partners in sero-discordant relationships

4. To identify challenges faced by index partners in sero-discordant relationships who have been exposed to PHDP interventions

1.8 Significance

The results provide insights on compliance to PHDP services among targeted individuals necessary for evidence based programming by policy makers at the government level, non-governmental organization as well as partners. Lastly, the study documented knowledge gained about PHDP services by participants and why compliance is important.

1.9.1 Study Limitation

Assessment of index clients who belong to an existing discordant couples support group presented a challenge because the couples were knowledgeable on transmission and prevention methods. This may not be a true reflection of all the discordant couples from Nairobi County especially those enrolled in other programs. Study participants were also probed during the exercise to get accurate answers.

1.9.2 Delimitations
The preparation of the study, its implementation, training of research assistants, stationary and data management and analysis was an expansive and an expensive venture. Hence, funding was an issue that was later solved through grant by the Canadian African Prevention Trials Network. This enabled us to recruit a larger study population to avoid selection bias.

Fig 1: Source: Author

1.10 Conceptual framework

| Independent variable | Dependent Variable |
|----------------------|--------------------|
| Knowledge            | Compliance to PHDP intervention |
| Perception           | -Affordability     |
|                      | -Availability      |
| Challenges           | -Appropriate       |
|                      | -Acceptable        |
| practice             |                     |
2.1 Introduction

This chapter reviews the literature on PHDP components which include HIV/AIDS in general and in sero-discordant relationships, sexually transmitted Infections and how they promote HIV transmission, anti-retro viral therapy and its role in prevention of HIV transmission and use of PHDP as an intervention in various regions.

2.2. Epidemiology of HIV/AIDS

HIV/AIDS epidemic began in 1981 and since then an estimated 60 million people globally have been infected with HIV. In 2012, an estimated 34 million people were living with HIV, and there were an estimated 2.5 million new infections worldwide (UNAIDS, 2013). While only 10% of the world’s population lives in SSA, an estimated 69% of all HIV infected adults and children reside in SSA. In 2012, an estimated 1.0 million people died from AIDS in SSA and another 1.8 million became infected with HIV. Kenya has an estimated adult prevalence rate of 5.2% representing 1.2 million Kenyans infected with HIV. Forty four percent of these infections were due to heterosexual sex within a union or regular partnership (KAIS, 2012)

2.3. Epidemiology of HIV/AIDS among discordant couples

Since 1980s HIV prevention messages focused on perceived high-risk sexual behaviors, such as sexual contacts with sex workers or having unprotected casual sex but ignored the married or cohabiting couples (Ruzangira, 2011). However, recent data show that most new HIV infections occur in HIV sero-discordant couples where one is unfaithful
and coupled with low condom use. (UNAIDS, 2012). Areas with mature AIDS epidemics have reported up to 15% of all couples as HIV-1-discordant and the majority of new heterosexually acquired HIV-1 infections occur within such discordant couples (Lingappa, 2008). HIV prevalence within couples is generally comparable to HIV prevalence in the overall population largely because the majority of adults who are of reproductive age are married or cohabitating. As HIV prevalence in the general population increases, so does the proportion of infected couples. It is estimated that the HIV negative individuals living in stable HIV discordant partnerships are twice as likely to get infected with HIV as those living in concordant HIV negative relationships (Allen, 2003) Research carried out in rural South Africa on HIV concordance and discordance among migrant and non-migrant couples in 2003 illustrated that direction of the spread of HIV was not only from returning migrant men to their partners, but also from women who stayed at home to their migrant partners (Lurie, 2003). Discordant couples who have received VCT and other prevention interventions have lower seroconversion rates; however, incidence within these couples remains high, ranging from 3-8% annually. The discordant couples are a key group that has basic needs including sex. They desire intimate contacts and have fertility desires despite one of the partners being HIV sero-positive. This might lead to fear of disclosure citing abandonment or violence by the HIV positive partner. Hence PHDP helps in addressing such issues (Bernard, 2009).
2.4 Sexual transmission of HIV

This is by far the most common mode of HIV/AIDS transmission globally. It is the most predominant mode of HIV transmission. The National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Division of HIV/AIDS Prevention illustrated from studies conducted that HIV transmission through sexual route accounted for over 90% of infections (Fatone, 2009)

The probability of a person being infected via sexual intercourse in each setting depends on the likelihood of unprotected sex with an infected partner among other factors. So, sexual behavior patterns and the background prevalence of HIV are of major importance (Matovu, 2010). The chance that a person becomes infected with HIV during one particular sexual contact varies greatly and depends on many factors. Male to female penile-vaginal transmission appears to be 2–3 times more efficient than female to male transmission, and there is some evidence that the first sexual intercourse for females may be associated with particularly high transmission probabilities (CDC, 2012). Cases of infection by oral sex have been reported but this mode is believed to be less risky than penile-vaginal or penile-anal sex. Heterosexual sex within a union or regular partnership accounted for an estimated 44% of incident HIV infections in Kenya in 2006, while casual heterosexual sex accounted for an additional 20% of new infections (Gelmon, 2009). The significant contribution of low-risk heterosexual partnerships to epidemics in sub-Saharan Africa has underscored the high prevalence in many countries of sero-discordant partnerships. Among married or cohabiting Kenyans who were living with HIV in 2012, about 61% had a partner who was not infected.
According to a household survey in Swaziland in 2006–2007, one in six cohabiting couples is sero-discordant (CSO, 2008)

2.5 Antiretroviral Therapy

The introduction of antiretroviral therapy in 1996 and the public health approach to HIV treatment in resource-limited settings has changed the course of the epidemic (WHO, 2012). This has been illustrated by many observational studies that show antiretroviral therapy reduces sexual transmission of HIV in generalized epidemics (WHO, 2012). This is achieved through ART lowering HIV-1 plasma ribonucleic acid (RNA), thereby reducing the infectiousness of PLHIV on treatment making it major prevention interventions especially in sero-discordant couples (Granich, 2009). Sero-discordant couples' studies suggest that if the virus has been undetectable for six months, there is no risk of transmitting HIV. However, the infected partner must adhere to ART regimen and be free of STIs (Garnett, 2008).

ART prevents morbidity, mortality, and transmission of HIV and tuberculosis as shown by the overwhelming success of the HIV Prevention Trials Network (HPTN) 052 study, which found that immediate highly active antiretroviral therapy (HAART) reduced transmission to sero-negative partners by 96% (NIH, 2011). Therefore, encouraging HIV-positive people in sero-discordance relationship to consider initiating ART as a way to achieve an undetectable viral load is an important new breakthrough for PHDP. This was also illustrated in November 2008 by the Lancet Theoretical mathematical model that examined the potential impact of universal voluntary HIV testing followed by immediate ART irrespective of clinical stage of CD4 count. The model assumed that
treatment in combination with current prevention methods would greatly reduce onward transmission, and concluded that this might reduce the number of new HIV infections by 95% within ten years in a generalized heterosexual epidemic of southern African severity. The reduction in HIV infections could result in cost savings in the medium term too (Granich, 2009)

2.6 Sexually Transmitted Infections (STI)

The most advanced HIV epidemics have developed under conditions of poor STI control, particularly where ulcerative STIs were prevalent; this calls for STIs to be monitored and assessed effectively on combined prevention efforts because they are reliable markers of HIV transmission. Major HIV epidemics emerge and spread rapidly under conditions of poor STI control, and further weakening of STI control may well undermine other HIV prevention efforts. Yet experience of countries as diverse as Cambodia, Kenya, Senegal, Sri Lanka and Thailand demonstrate that wider STI control is feasible and that HIV prevention can be strengthened in doing so (Steen, 2011).

Individuals who are infected with STDs are at least two to five times more likely than uninfected individuals to acquire HIV infection if they are exposed to the virus through sexual contact. In addition, if an HIV-infected individual is also infected with another STD, that person is more likely to transmit HIV through sexual contact than other HIV-infected persons (Ngure, 2012).

Sexual transmission of HIV is enhanced by the presence of another sexually transmitted infection (STI), especially an ulcerative one such as chancroid, syphilis or herpes
simplex virus 2 (HSV2) (Fleming, 1999). The presence of ulcerative sexually transmitted infections (STIs) such as chancroid, is an important correlate of HIV-1 transmission within discordant heterosexual couples (McClelland, 2007). Co-infection with HIV may alter the clinical presentation, severity, natural history, duration, and response to treatment of another STD and this may in turn influence the progression of HIV.

A study showed that effective antibiotic treatment of gonorrhea or Chlamydia infection reduces HIV viral load to undetectable levels (Cohen, 1997) thereby reducing the risk of transmitting the virus from the positive person to a negative person.

2.7 Contraception

High levels of HIV prevalence exist in countries that also often have high levels of fertility and low contraceptive use ref. Sub-Saharan Africa has the lowest rate of contraceptive use in the world, due to a myriad of issues including difficulty in accessing contraceptive supplies, insufficient health care infrastructure, a large rural population, poor economic development and cultural values placed on fertility (CDC, 2008). The practice of family planning in Kenya has increased steadily since the early 1980s with the contraceptive prevalence rate for all methods reaching 39% in 1998 and 46% in 2008 (KDHS, 2009) ?KDHS 2014 : However, there is a lack of systematic research on family size preferences and contraceptive use among HIV sero-discordant couples in Africa, although many studies have examined the determinants of contraception adoption in African countries (Stephenson, 2007).
A prospective study conducted in sub-Saharan Africa showed that only 30% of women in HIV sero-discordant relationships utilized contraception together with condom, compared to 90% utilizing condom only and 10% neither utilized condoms nor contraceptives (Heffron, 2010). Another study conducted in Kisumu, Kenya found that HIV-sero-discordant couples continue to conceive despite knowledge of their sero-status. The couples who conceived were at 80% increased risk of HIV transmission between partners (Allen, 1992).

Indirect mechanisms by which hormonal contraceptive use may contribute to HIV-1 infectivity include increased risk of STDs and cervical inflammation which may increase cervical HIV-1 shedding (Baeten, 2004). As a result of such studies, WHO in 2012 recommended correct and consistence use of condoms for women utilizing the progesterone only injection contraceptive.

Little attention has been paid to the contraceptive needs of sero-discordant couples. A focus on sero-discordant couples is warranted as these couples are faced with dual burdens of high risk of HIV transmission and risk of pregnancy, and resultant risk of mother to child transmission of HIV. (Sarkar, 2008). The challenge is to provide sero-discordant couples with family planning services that can allow them to effectively manage both their risks of HIV transmission and their fertility desires.

2.8 Positive Health, Dignity and Prevention (PHDP)

In the early years of the HIV epidemic, HIV testing and counseling was not widely available in low- and middle-income countries. Consequently, few people living with HIV (PLHIV) were aware of their HIV status. HIV prevention programs, therefore,
relied on messages for the general population that implicitly assumed that all individuals were in the same situation, i.e., uninfected or untested. Program planners were also hesitant to target prevention messages toward PLHIV due to fear of blaming the HIV-infected individual and adding to their already heavy burden of stigma (Auerbach, 2004). In light of recent studies showing the importance of HIV treatment in the prevention of ongoing transmission, these activities are increasingly focusing on individuals who know they are HIV-infected (Janssen & Valdiserri, 2004). This strategy was originally known as positive prevention, although it has also been called prevention by, for, or with positives (CDC, 2003) and, most recently, positive health, dignity and prevention (PHDP) (GNP+, 2009).

The term PHDP is most accepted by PLHIV groups, and it was agreed upon as the preferred terminology at the World AIDS conference in Vienna, Austria, 18-23 July, 2010, validating the overall well-being and human rights of those living with HIV. The agreed upon concept of PHDP was the concept of ‘combination prevention’, which accepts that focusing primarily on behavioral change is overly simplistic. Combination prevention appreciates the realities of sexual dynamics, addresses societal and structural issues, and embraces biomedical interventions as prevention tools, including the experimental use of antiretroviral (ARVs) (UNAIDS, GNP+. 2013). Positive health, dignity and prevention engage people who know they are living with HIV in prevention. It involves supporting HIV-positive people to learn and practice how to live healthily and minimize the risks of their spreading the virus to others (Bernard, 2009). Programs have recognized that improving access to HIV prevention and treatment and raising
Network of People Living with HIV and AIDS in Kenya (NEPHAK) presented their PHDP needs assessment research findings to CDC-Kenya. The group helped implement and integrate the interventions with support from the Kenya National AIDS & STI Control Program (NASCOP) into the HIV/AIDS care and treatment package in 2013 (NEPHAK, GNP+, 2012).
CHAPTER THREE: MATERIALS AND METHODS

3.1 Introduction

This chapter describes the materials and methods that were used to carry out the study. The study design, variables, study location, study population and sampling technique are described in details. Sample size determination, research instruments, pre-testing, reliability and validity are also covered. The section also addresses data collection techniques, data analysis and ethics considerations.

3.2. Research Design

This was a cross-sectional descriptive study that utilized both quantitative and qualitative approaches of data collection.

3.3 Variables

3.3.1 Independent variable

The independent variables were knowledge, perceptions, challenges and practice characteristics

3.3.2 Dependent variables

Dependent variable was compliance to Positive health, dignity and prevention intervention

3.4 Location of the Study

The study was conducted in Nairobi City County in comprehensive care clinics that had active sero-discordant cohorts. Three comprehensive centers provided study
participants, and were Baba dogo Kasarani sub-county clinic, Majengo Starehe sub-county clinic and Pumwani Hospital University of Nairobi/Manitoba comprehensive care centre located in Kamkunji sub-county.

Fig 2: Map of Kenya. Source: Google, 2014
Kenya is an East African country that lies between latitude of $5^\circ$N and $5^\circ$S, longitudinal of $34^\circ$ and $42^\circ$E and covers 581,309 kilometers square and had an estimated population of 44 million people in 2012. Nairobi Kenya's capital city is situated at latitude of $1^\circ17$ Sand longitude of $30^\circ49$ E and covers 696 kilometers square area with a population of 3.375 million people.

3.5 Study Population

All index partners who had actively participated in PHDP activities in the previous three months as per the clinic registry, 18 years and above and agreed to participate in the study when contacted by the clinic team were eligible for the interviews.

3.5.1 Inclusion criteria

HIV positive client, in confirmed sero-discordant relationship, attending HIV care and treatment within the three selected study health facilities in Nairobi County. All eligible participants gave informed consent to participate.
3.5.2 Exclusion criteria

Those who were challenged mentally and not able to make an informed decision

Index partners in sero discordant relationships but not active in HIV care

Index partners in sero discordant relationship that did not consent

3.6 Sampling Techniques

Simple random sampling was carried out for selecting study sites from the NASCOP CCC registers for sites with discordant couples. Three clinics were picked and a register of all eligible index partners made. Systematic sampling was used to get study participants from the clinic registries. After calculating the Kth every 2nd index partner was enrolled into the study in Pumwani clinic, Majengo and Baba Dogo clinics. Purposive sampling was used to select focus group discussions participants where each group comprised of ten participants. Those who participated in the face to face interviews were not invited to participate in the focus group discussions. A focus group discussion guide was used to elicit the required group dynamics and responses

3.7 Sample Size Determination

(Fisher’s et, al, 1998) formula was used to determine sample size.

\[ n = \frac{z^2p(1-p)}{d^2} \]

\( n \) = sample size
z=critical value

d=margin of era

p=prevalence of discordant couples in all HIV positive couples in Kenya (KAIS, 2012)

P value was set at 0.05

n=\frac{1.96^2 \cdot 0.61(1-0.61)}{0.05^2}

n=365

The sample size was 370

3.8 Construction and Research Instruments

Questionnaire and focus group discussion guide were used

3.8.1 Questionnaires

Were used to capture the socio-demographic information and data on the index clients' level of knowledge, attitude and challenges of PHDP interventions.

3.8.2. Focused group discussion

A focused group discussion guide was used to gather qualitative data from the index client. The study mainly collected data on their cultural/traditional and religious belief about HIV transmission and prevention methods. This was tailored towards the PHDP intervention among index client sêro-discordant relationship.

3.9 Pre-Testing
The study tools were pretested among ten HIV clients in confirmed sero discordant relationship in Pumwani clinic. Those who participated in the pre testing were not included in the study. Appropriate corrections were then made on the questionnaires.

3.10 Validity

The validity was ensured by correct large sample size selection through systematic sampling. Careful planning, random selection of participants and the use of both qualitative and quantitative methods also enhanced the validity of the study.

3.11 Reliability

Reliability of the study tool was ensured through pre testing and appropriate corrections made to the items in the questionnaire.

3.12 Data Collection Techniques

Semi structured questionnaires were administered by trained research assistants. Focused group discussions were audio-recorded and fully transcribed. After completion of the data collection, the data was cleaned before being exported to SPSS for analysis.

3.13 Data Analysis

Data analysis was done using SPSS version 22.0. The alpha level was set at 0.05. Qualitative content analysis was used to analyze open ended variables. Thematic analysis was used to analyze the information generated from the focus group discussions. Chi square was used to test for significant association between categorical variables. Fisher exact test was used to test for significance between categorical variables with cell less than five.
3.14. Ethical Considerations

Approval to undertake the study was given from the graduate school and ethical clearance from Kenyatta University Ethical Review Committee. A permit from NACOSTI was also obtained and eligible study participants signed an informed consent. The clinic management team gave approval of the studies to be conducted within the clinics.

No one was coerced nor induced in any way to participate in the study. The questionnaires were serialized and the respondents were not required to write their names or any other identification numbers. Information provided was treated with utmost confidentiality and this was communicated to the respondents.

Assurance was given to the respondents that the information given was to be used only for the intended purpose of evaluating adherence to PHDP intervention among people living with HIV/AIDS in sero-discordant relationships in Kenya and no one was to be stigmatized and/or victimized.

Before each interview and focus group discussion, the participants were informed about the purpose of the study, how it would be carried out, and that their participation was voluntary. Participants were also advised that they could leave the interviews at any time.

Confidentiality was provided. To ensure confidentiality no names were used. All data remained stored in cabinets that were locked and handled by only one person. The participants were reimbursed Ksh. 100 to cater for their bus fare.
CHAPTER FOUR: RESULTS

4.1 Introduction
This chapter gives in details the results of the data analyzed on the four independent variables. It gives results on index study participants’ socio-demographic factors, knowledge, perceptions and challenges in relation to compliance to PHDP.

4.2 Socio-demographic factors
A total of 370 HIV positive index partners in a sero-discordance relationship participated in the study. Demographic data shows 80.3% of the study participants were female while 19.7% were male, with a mean age of 36.6 years. Fifty seven percent of the study participants were married and 52.4% were living with their sex partners. 46.5% had secondary education while 38.1% had primary level education. Thirty nine point five percent of the total study participants earned a monthly salary above Ksh 10001 (Table 1)
Table 1: Social-demographic data of index partners

| Characteristics          | Frequency (f) | Percentage (%) |
|-------------------------|---------------|----------------|
| Gender (n=370)          |               |                |
| Male                    | 73            | 19.7%          |
| Female                  | 297           | 80.3%          |
| Age (n=370)             | Mean=36.6     | SD 8.5         |
| Living with partner     |               |                |
| No                      | 176           | 47.6%          |
| Yes                     | 194           | 52.4%          |
| Education level (n=370) |               |                |
| None                    | 10            | 2.7%           |
| Primary                 | 141           | 38.1%          |
| Secondary               | 172           | 46.5%          |
| Tertiary                | 47            | 12.7%          |
| Source of income (n=370)|               |                |
| Employed                | 116           | 31.4%          |
| Business                | 190           | 51.4%          |
| Other                   | 58            | 15.7%          |
| None                    | 6             | 1.6%           |
| Salary in Kenyan shillings (n=370) | |                |
| 0-5000                  | 138           | 37.3%          |
| 5001-10000              | 86            | 23.2%          |
| 10001 and above         | 146           | 39.5%          |

n =number, F=frequency and %= percentage

4.3 PHDP practice and compliance among the index partners

4.3.1 PHDP Compliance among the index partners

PHDP compliance is measured by a minimum package which is defined as a client accessing adherence, treatment and any other three PHDP interventions. The PHDP interventions include adherence to clinic service, status disclosure, partner testing, STI screening and treatment, Condom demonstration and supply, family planning counseling and risk reduction. The above scores were interpreted as follows; Score 0; The number that accessed adherence only 0.8%, score 1; the number that accessed adherence and any other one intervention 11.4%; score 2; the number that accessed adherence and any other three intervention who met the minimum package of compliance 66.5%, score 4; the number that received three interventions but did not access adherence 3.8%, score 5; the number that accessed four interventions but did not
access adherence 2.2%, score 6; the number that accessed five interventions but did not access adherence 0.3%. (Table 2)

Table 2: PHDP compliance among index partners

| PHDP services offered               | Scores | Frequency (f) | Percentage (%) |
|-------------------------------------|--------|---------------|----------------|
| Adherence Only                      | 0      | 3             | 0.7%           |
| Adherence with one service          | 1      | 42            | 11.4%          |
| Adherence with two services         | 2      | 56            | 15.1%          |
| Adherence with three services       | 3      | 246           | 66.5%          |
| Three services only without adherence| 4      | 14            | 3.8%           |
| Four services only without adherence| 5      | 8             | 2.2%           |
| Five services only without adherence| 6      | 1             | 0.3%           |

4.3.2 PHDP practice among Index Partners

About 45.7% of the respondents do not desire children while 16.2% were not on any family planning method. 14.6% did not use condom on their last sexual encounter and only 53.4% used condom consistently with their regular partners. Twenty eight point two percent had other sexual partners of which 86.3% did not know the other partners HIV status, 89.2% of those with other sex partners disclosed their HIV status after intimacy or have never disclosed. At least 27.3% of the study participants take alcohol whereby, 91.2% had sex while drunk. Forty one percent of respondents missed out on
STI screening in the last 6 months, while those who were screened for STI, 4.9% tested positive and accessed treatment (Table 3).

Table 3: PHDP Practice among index partners

| Practices | Frequency (f) | Percentage (%) |
|-----------|---------------|----------------|
| Do you desire more children (n=368) | | |
| No | 181 | 49.2% |
| Yes | 168 | 45.7% |
| Not sure | 19 | 5.2% |
| Do you use FP (n=297) | | |
| No | 48 | 16.2% |
| Yes | 249 | 83.8% |
| Did you Use condom last sex (n=370) | | |
| No | 60 | 14.6% |
| Yes | 310 | 85.4% |
| Was your regular partner (n=370) | | |
| No | 107 | 28.9% |
| Yes | 263 | 71.1% |
| How often is condom used with regular partner (n=328) | | |
| Always | 175 | 53.4% |
| Sometimes | 141 | 43.0% |
| Never | 12 | 3.7% |
| N/A | | |
| Do you have other sexual partner (n=366) | | |
| No | 262 | 71.8% |
| Yes | 104 | 28.2% |
| Number of sexual partner (n=366) | | |
| 1 | 262 | 71.6% |
| 2–5 | 104 | 28.4% |
| Know partners HIV status (n=102) | | |
| No | 88 | 86.3% |
| Yes | 14 | 13.7% |
| Character | Frequency(f) | Percentage (%) |
|-----------|--------------|----------------|
| **Take alcohol (n=366)** | | |
| No | 266 | 72.7% |
| Yes | 100 | 27.3% |
| **Frequency of taking alcohol (n=100)** | | |
| Every day | 4 | 4.0% |
| 2-6 times a week | 73 | 73.0% |
| Once a week | 13 | 13.0% |
| Other | 10 | 10.0% |
| **Had sex when drunk (n=102)** | | |
| No | 7 | 6.9% |
| Yes | 93 | 91.2% |
| Can't remember | 2 | 1.9% |
| **Honor last appointment (n=370)** | | |
| No | 23 | 6.3% |
| Yes | 347 | 93.7% |
| **Screened STI last 6 months (n=368)** | | |
| No | 151 | 41.0% |
| Yes | 213 | 57.9% |
| Can’t remember | 4 | 1.1% |
| **Ever had STD past 6 months (n=367)** | | |
| No | 345 | 94.0% |
| Yes | 18 | 4.9% |
| Can't remember | 4 | 1.1% |
| **Access treatment (n=18)** | | |
| Private hospital | 5 | 27.8% |
| Government hospital | 12 | 66.7% |
| Other | 1 | 5.6% |
4.4 Knowledge of PHDP indicators among index partners in sero-discordant relationships

Table 4 below shows information on index partner’s knowledge on PHDP indicators. One person (0.3%) had never heard of HIV despite being HIV positive on care and treatment for at least 3 months, while 399.7% had heard of HIV. Ninety eight point nine percent knew the importance of HIV disclosure to sex partner. Ninety nine point two percent had knowledge on condom use among HIV discordant couples. Fifteen point four percent did not know that presence of STI increases the chance of acquiring HIV, while 77.2% could relate presence of STI to increased chance of transmitting HIV. Ninety point eight percent knew that alcohol consumption interferes with HIV care and treatment. At least above 90% of the study participants had knowledge on all the PHDP indicators (Table 4)

Table 4: Knowledge of PHDP indicators

| Characteristics                                      | Responses   | Frequency (f) | Percentage (%) |
|------------------------------------------------------|-------------|---------------|----------------|
| Ever heard of HIV                                    | No          | 1             | 0.3%           |
|                                                       | Yes         | 365           | 99.7%          |
| Have you disclosed your HIV status                   | No          | 22            | 5.9%           |
|                                                       | Yes         | 348           | 94.1%          |
| Is it important for your sex partner to take a HIV test| No          | 5             | 1.1%           |
|                                                       | Yes         | 365           | 98.9%          |
| Is it Important to use condom                        | No          | 3             | 0.8%           |
|                                                       | Yes         | 367           | 99.2%          |
| Does STI increase HIV transmission                   | No          | 27            | 7.3%           |
|                                                       | Yes         | 285           | 77.2%          |
|                                                       | Don’t know  | 57            | 15.4%          |
| Do alcohol consumption have effects on HIV positive  | No          | 34            | 9.2%           |
|                                                       | Yes         | 336           | 90.8%          |
More knowledge results showed that 76.5% of respondents learnt about HIV from the hospital. Ninety eight point four percent knew that HIV can be transmitted through sex, while only 41.3% named HIV as one of the STIs. Most of the respondents knew that syphilis and gonorrhea are among STIs. The study participants had good knowledge on contraceptive methods however 3.5% did not know any type of contraceptive methods. The focus group discussion showed that there was adequate knowledge among the respondents on the importance of each of the PHDP interventions. These included the importance of discordant couple support groups, importance of condom use and family planning. Pertaining family planning, one respondent said that “if one gives birth frequently without using family planning for spacing the body immunity will be compromised, exposing her to opportunistic infection”. When asked about the benefit of attending HIV discordant couple support groups, one respondent reported that support groups help the discordant partner remain HIV negative through acquiring prevention knowledge.
Table 5: PHDP knowledge among index partners

| Characteristics | Responses     | Frequency(n) | Percentage (%) |
|-----------------|---------------|--------------|----------------|
| Where do you get the source of HIV/AIDS Information | hospital | 280 | 60.5% |
| | media | 67 | 14.5% |
| | community | 40 | 8.6% |
| | friends | 76 | 16.4% |
| How is HIV transmitted | sex | 365 | 35.8% |
| | injections | 242 | 23.7% |
| | Mother to child | 188 | 18.4% |
| | sharing | 34 | 3.3% |
| | transfusion | 190 | 18.6% |
| Which STIs do you know | HIV | 149 | 17.5% |
| | syphilis | 299 | 35.1% |
| | gonorrhea | 321 | 37.6% |
| | chlamydia | 50 | 5.9% |
| | Don’t know STI | 15 | 1.8% |
| | Other STI | 19 | 2.2% |
| Which FP methods do you know | pills | 306 | 28.7% |
| | injectables | 291 | 27.3% |
| | implants | 192 | 18.0% |
| | iuds | 145 | 13.6% |
| | Other contra | 119 | 11.2% |
| | Don’t know contra | 13 | 1.2% |
| Total | 4.4.1 PHDP knowledge and Compliance among the index partners |

The data showed that 66% respondents who had knowledge on importance of partner’s testing complied to PHDP practice while 80% of those without knowledge also complied to PHDP practices as well. As per fisher exact test and p value of knowledge and compliance there is a significant relationship between knowledge on contraceptive
use and compliance to PHDP practice among the index partners in sero-discordant relationship with p value of 0.017. (Table 6)

Table 6: The significance of PHDP knowledge and compliance among the index partners

| Knowledge Characteristics                  | Complied to PHDP | Did not comply to PHDP | Significance test |
|-------------------------------------------|------------------|------------------------|-------------------|
| Knowledge of HIV disclosure               |                  |                        |                   |
| No                                        | 14(63.6%)        | 8(36.4%)               | $\chi^2=0.7$; df=1; p=0.792 |
| Yes                                       | 231(66.4%)       | 117(33.6%)             |                   |
| Knowledge on Sex partner testing          |                  |                        |                   |
| No                                        | 4(80.0%)         | 1(20.0%)               | $\chi^2=0.43$; df=1; p=0.666 |
| Yes                                       | 241(66.0%)       | 124(34.0%)             |                   |
| Knowledge on condom use                   |                  |                        |                   |
| No                                        | 3(100%)          | 0(0%)                  | $\chi^2=1.54$; df=1; p=0.554 |
| Yes                                       | 242(65.9%)       | 125(34.1%)             |                   |
| Knowledge of STIs                         |                  |                        |                   |
| No                                        | 19(82.6%)        | 4(17.4%)               | $\chi^2=2.95$; df=1; p=0.086 |
| Yes                                       | 226(65.1%)       | 121(34.9%)             |                   |
| Knowledge on STI increasing HIV transmission |                |                       |                   |
| No                                        | 54(63.5%)        | 31(36.5%)              | $\chi^2=0.36$; df=1; p=0.551 |
| Yes                                       | 191(67.0%)       | 94(33.0%)              |                   |
| Knowledge of contraceptives               |                  |                        |                   |
| No                                        | 15(93.8%)        | 1(6.3%)                | $\chi^2=5.67$; df=1; p=0.017 |
| Yes                                       | 230(65.0%)       | 124(35.0%)             |                   |
| Knowledge of alcohol effects in HIV positive individuals |            |                       |                   |
| No                                        | 20(58.8%)        | 14(41.2%)              | $\chi^2=0.92$; df=1; p=0.339 |
| Yes                                       | 225(67.0%)       | 111(33.0%)             |                   |

The figure 4 below shows the distribution of contraceptive knowledge verses PHDP practice compliance. Of the 370 respondents, 6.2% did not have contraceptive
knowledge neither did they comply with PHDP practice, while 193.8% did not have contraceptive knowledge but they complied with PHDP practice. Of those who had knowledge on contraceptive 35.0% did not comply while 65.0% complied with PHDP practice.

Fig 4: Contraceptive knowledge verses PHDP practice compliance

In bivariate analysis involving contraceptive knowledge and compliance to PHDP practice the odds ratio was 0.12 with a P value of 0.017. This shows that the respondents without contraceptive knowledge complied more to PHDP practice than those with contraceptive knowledge.

Table 7: Bivariate analysis of contraceptive knowledge and PHDP compliance

| Characteristics                  | Compliance | 95% CI for OR |
|----------------------------------|------------|---------------|
|                                  | Yes (245(66.2%)) | No (125(33.8%)) | P-Value | Odds Ratio (OR) | Lower | Upper |
| Contraceptive knowledge          |            |               |          |                 |       |       |
4.5 PHDP perceptions among the index partners

HIV was perceived as a threat to the family by 27.3% of the study participants. Twenty eight point one percent perceived status disclosures to their partner as a problem and they cited abandonment, stigma and violence as reasons hindering disclosure. Three point eight percent did not perceive condom use as a method of HIV prevention, while 83.2% of the respondents understood that STI increases the risk of HIV transmission and 16.8% did not associate STI with increase in HIV transmission (Table 8).

Table 8: Perceptions of PHDP practice among index partners

| Characteristics                                      | Frequency (f) | Percentage % |
|------------------------------------------------------|---------------|--------------|
| HIV a threat to the family (n=370)                   |               |              |
| No                                                   | 269           | 72.7%        |
| Yes                                                  | 101           | 27.3%        |
| HIV status disclosure a problem (n=370)              |               |              |
| No                                                   | 266           | 71.9%        |
| Yes                                                  | 104           | 28.1%        |
| Condom is used to prevent HIV transmission (n=370)   |               |              |
| No                                                   | 14            | 3.8%         |
| Yes                                                  | 356           | 96.2%        |
| HIV women should use contraceptive (n=368)           |               |              |
| No                                                   | 40            | 10.9%        |
| Yes                                                  | 328           | 89.1%        |
| Contraceptive reduces HIV transmission                |               |              |
Most of the respondents perceived partner testing as very important, 92.4% said they would bring partner for HIV testing to find out status and enroll into care and treatment in case they turn positive. Forty percent of the respondents wanted their partners tested to prevent them from acquiring HIV. On alcohol consumption three index partners said, “Alcohol consumption might make one forget to take their treatment completely or on scheduled time leading to ART resistance and poor immunity”. Four said “they might forget to adhere to the clinic appointments hence miss care and treatment” while 7 said “alcohol consumption will interfere with ART uptake and result into ART failure leading to low immunity with high chances of opportunistic infections”.

Table 9: Perception of PHDP

| Perceptions on partner testing                              | Frequency (n) | % of responses |
|-------------------------------------------------------------|---------------|----------------|
| To find out if is also infected to start treatment           | 340           | 60.80%         |
| To find out if is not infected to prevent infecting him/her | 158           | 28.3%          |
| For assisted disclosure                                     | 53            | 9.5%           |
| Not important                                               | 1             | 0.2%           |
| Other                                                       | 7             | 1.3%           |
| **Total**                                                   | **559**       | **100.0%**     |

| Perceptions on alcohol consumption                          | Frequency (n) | % of responses |
|-------------------------------------------------------------|---------------|----------------|
| Forget to take drugs                                        | 232           | 35.3%          |
| Forget to honor treatment date                              | 97            | 14.8%          |
| Interferes with ARVs uptake in the body                     | 269           | 40.9%          |
| Perception of PHDP and compliance to PHDP practice |
|--------------------------------------------------|

There was no significant relationship between study participants' perceptions and compliance to PHDP practices. Thirty three point seven percent of those who perceived condom use as a method of HIV prevention did not comply with PHDP practice, while 66.3% complied. In Focus group discussion most of the study participants had a positive perception of positive health, dignity and prevention interventions. Interventions reported by the respondents included proper use of condoms, STI testing, ARV adherence, regular visits to the health facility, couple HIV testing and counseling and HIV testing for the discordant partner. One study respondent said "regular visits to the health facility will help the HIV discordant partner learn the proper use of condoms".

Another respondent said "seeking health services in a facility will help the discordant couple get to know each other, trust each other and maintain the discordant relationship”.

Couple HIV testing and counseling was reported to be an effective intervention to reach discordant couples as it will allow all the issues that involve the couple addressed at once. In addition it will give a discordant couple advice on how to live in their state.
Table 10: Perception and compliance to PHDP practice among index partners

| Perception Characteristics                      | Compliance to PHDP | Significance test |
|------------------------------------------------|--------------------|-------------------|
| HIV a threat to family                         | Yes                | No                |
| No                                             | 180 (66.9%)        | 89 (33.1%)        | $\chi^2=0.22; \, df=1; \, p=0.643$ |
| Yes                                            | 65 (64.4%)         | 36 (35.6%)        |
| HIV disclosure a problem                       | Yes                | No                |
| No                                             | 180 (67.7%)        | 86 (32.3%)        | $\chi^2=0.89; \, df=1; \, p=0.345$ |
| Yes                                            | 65 (62.5%)         | 39 (37.5%)        |
| Condom prevents HIV                            | Yes                | No                |
| No                                             | 9 (64.3%)          | 5 (35.7%)         | $\chi^2=0.02; \, df=1; \, p=0.876$ |
| Yes                                            | 236 (66.3%)        | 120 (33.7%)       |
| HIV+ women should use contraceptive if necessary| Yes                | No                |
| No                                             | 27 (67.5%)         | 13 (32.5%)        | $\chi^2=0.03; \, df=1; \, p=0.865$ |
| Yes                                            | 217 (66.2%)        | 111 (33.8%)       |
| Contraceptive reduces HIV                      | Yes                | No                |
| No                                             | 217 (67.2)         | 106 (32.8%)       | $\chi^2=1.06; \, df=1; \, p=0.303$ |
| Yes                                            | 28 (59.6%)         | 19 (40.4%)        |
| STI increases HIV risk                         | Yes                | No                |
| No                                             | 38 (61.3%)         | 24 (38.7%)        | $\chi^2=0.81; \, df=1; \, p=0.369$ |
| Yes                                            | 207 (67.2%)        | 101 (32.8%)       |

Out of the 370 respondents, 35.7% did not comply with PHDP and believed that condom use does not prevent HIV transmission, while 33.7% believed condom use prevents HIV but still did not comply with PHDP. Those respondents who complied with PHDP practice 64.3% believed that condom use does not prevent HIV, while 66.3 believed that condom use prevents HIV transmission (Figure 5).
4.7. PHDP challenges encountered by index partners

Data collected on challenges on PHDP service included issues around affordability, availability, appropriateness and acceptance. Ninety percent of the index partners found it affordable to honor their care and treatment clinic appointments; the 10% had a challenge in honoring their appointments due to long distance, lack of bus fare or lack of time off from work or other commitments. Above 97% of the respondents found all PHDP services acceptable to HIV positive individuals. 91.9% of index partners reported to have accessed the services while all study participants found PHDP practice either important or very important (Table 10).
Table 11: PHDP Challenges encountered by index partners

| Challenges                                    | Frequency (n) | Percentage (%) |
|-----------------------------------------------|---------------|----------------|
| Easy to honor appointments (n=370)            |               |                |
| No                                            | 37            | 10%            |
| Yes                                           | 333           | 90%            |
| Services important to HIV Positive person     |               |                |
| Very important                                | 257           | 69.6%          |
| important                                     | 112           | 30.4%          |

The focused group discussions show that male partner influence was reported by the study respondents to influence the adoption of some of the PHDP interventions including condom use and family planning. Thirty three percent of respondents reported that male partners may have a problem with contraceptive uptake because of the perception that it affects libido. Religion and side effects associated with some of the FP methods were also noted to influence FP; 53% of the study respondents reported that uptake of condom use among discordant couples is affected by many challenges; these include perception of lack of trust. In addition condom use may be affected by cultural norms that give men more power and a lack of understanding on the importance of condom. Seventy two percent of respondents reported that lack of education among men affects condom use as those at risk have low perceived risk. In addition, 67 % of index partners reported that HIV discordant men may find it more difficult to use condoms because of the perception that condom use indicates unfaithfulness. Four percent of respondents reported that men do not use condoms as they find them uncomfortable. Polygamy was also cited by 72% of index partners as a challenge affecting adoption of PHDP interventions. This is especially a challenge when one of
the partners is HIV infected and the others are not infected. Long distance between the
partners that necessitates one to sleep away for longer periods was noted to influence
the relationship status of a discordant couple by increasing the risk of multiple partner
relationships or casual sex. This was noted to influence both men and women

4.7.1 Challenges faced with index partners in compliance to PHDP

Bivariate analysis of challenges showed that there significance relationship between
condom demonstration and PHDP compliance with P value of 0.018. There is also a
significant relationship between condom supply and compliance to PHDP practice with
P value of 0.034

Table 12: PHDP challenges verses compliance

| Challenges Characteristics | Compliance to PHDP | Significance test |
|---------------------------|--------------------|------------------|
| Adherence to care         |                    |                  |
| No                        | Yes 9(56.3%)       | X2=0.74; df=1; p=0.389 |
|                           | No 7(43.8%)        |                  |
| Yes                       | 236(66.7%)         |                  |
|                           | 118(33.3%)         |                  |
| STI screening done        |                    |                  |
| No                        | Yes 3(75.0%)       | X2=0.14; df=1; p=0.709 |
|                           | No 1(25.0%)        |                  |
| Yes                       | 242(66.1%)         |                  |
|                           | 124(33.9%)         |                  |
| Partner testing done      |                    |                  |
| No                        | Yes 4(66.7%)       | X2=0.001; df=1; p=0.981 |
|                           | No 2(33.3%)        |                  |
| Yes                       | 241(66.2%)         |                  |
|                           | 123(33.8%)         |                  |
| Condom use demonstrated   |                    |                  |
| No                        | Yes 14(46.7%)      | X2=5.58; df=1; p=0.018 |
|                           | No 16(53.3%)       |                  |
| Yes                       | 231(67.9%)         |                  |
|                           | 109(32.1%)         |                  |
| Condom supplied           |                    |                  |
| No                        | Yes 2(28.6%)       | X2=4.52; df=1; p=0.034 |
|                           | No 5(71.4%)        |                  |
| Yes                       | 243(66.9%)         |                  |
|                           | 120(33.1%)         |                  |
Out of 370 respondents of those who complied with PHDP practice 66.9% had accessed condoms, while 28.6% had not accessed condom. Those who did not comply with PHDP practice 33.1% had accessed condoms, while 71.4% had not accessed condoms.

The results of condom supply and demonstration that showed significant association between them and compliance to PHDP practice were further analyzed through bivariate analysis for odds ratio as illustrated below.

**Fig 6: Graph showing condom supply challenges and PHDP compliance among respondents**

A cross tabulation table showed significant relationship between challenges faced by respondents and compliance to PHDP practice. Those respondents who accessed condom demonstration complied with PHDP practice two times more than those who did not access condom demonstration. Also those respondents who accessed condom supply complied with PHDP practice five times more than those who did not access condom supply.
Table 13: Bivariate analysis of condom demonstration, condom supply and compliance to PHDP practice

| Characteristics       | Compliance to PHDP | Odds Ratio (OR) | 95% CI for OR |
|-----------------------|--------------------|-----------------|---------------|
|                       | Yes                | No              | P-Value       | Lower | Upper   |
| **Condom use demo**   |                    |                 |               |       |         |
| No (Ref)              | 14 (46.7%)         | 16 (53.3%)      | 0.018         | 1     |         |
| Yes                   | 231 (67.9%)        | 109 (32.1%)     | 2.42          | 1.14  | 5.14    |
| **Condom supplied**   |                    |                 |               |       |         |
| No (Ref)              | 2 (28.6%)          | 5 (71.4%)       | 0.034         | 1     |         |
| Yes                   | 243 (66.9%)        | 120 (33.1%)     | 5.06          | 0.97  | 26.48   |
CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0. Introduction

This chapter discusses these study findings linking the results to other studies done prior to this study. It also gives study conclusions and recommendations as per the study objectives.

5.1 Discussions

5.1.1 Socio demographic factors of index partners in HIV sero-discardant relationship and how they affect PHDP compliance

Demographic information of this study shows that there are many index women who are HIV positive compared to men. This agrees with (CDC, 2012) that stated male to female HIV penile-vaginal transmission appears to be more efficient than female to male transmission, and (CDC, 2012) also reported some evidence that the first sexual intercourse for females may be associated with particularly high transmission probabilities. This shows the importance of reaching out to HIV positive individuals especially men to disclose their HIV status as early as possible to their sex partners and get them tested. Literacy levels was average in this study group at 40.9% having primary and lower level of education while 59.1% had attained secondary or tertiary level of education. This differs with (Ruzangira et al. 2011) who showed that above 70% of the index partners had only primary school education. There is high percentage of sexually active cohabiting sero discordant couples at 43% compared to those who are
married to their HIV negative partners, this could increase the rate of HIV incidence as outlined in (KAIS, 2012) that high rate of HIV transmission occur between HIV sero discordant couples who are in unstable relationships.

5.1.2 PHDP Practice among index partners in HIV sero-discordant relationship

This study showed that only 16.2% of the study participants were not on any family planning method, this showed good uptake of family planning among discordant couples. This differs with a study done by (Heffron, 2010) that showed only 30% of women in HIV sero-discordant relationships utilized contraception. This study also shows that there is inconsistent condom use among the index partners in sero-discordant relationship which is consistent with a study done by (Slymaker, 2003) that found inconsistent condom use among the HIV positive individuals. This illustrates that discordant couples are not adhering to condom use despite being knowledgeable on importance of condom use. Twenty eight percent of the respondents had other sexual partners of which 86.3% did not know the other partners HIV status. This is likely to contribute to spread of HIV as reported by (Mackenzie C, 2007, UNAIDS, 2012) that showed concurrent relationships contributed to spread of HIV. Most of those study participants in multiple relationships had not disclosed their HIV status or disclosed after intimacy, this shows poor disclosure status among discordant couples with multiple sex partners. This will result in HIV transmission to other sexual contacts. Close to a third of the study participants consume alcohol and over 90% reported to have had sex while drunk. This finding agrees with a study done by (Allen S, 2002) that showed almost a third of the study participants reported alcohol use which was being
associated with increased risk of HIV infection among discordant couples reported. 41% of the respondents missed out on STI screening in the last 6 months, while those who were screened for STI, 4.9% tested positive and accessed treatment. STI screening is mandatory on all visits for all index partners or any HIV positive individuals. If only 59% individuals were screened and 4.9% had STI, then there was missed opportunity for the other 41% where probably some of them are suffering from STI which contributes to easy HIV transmission/acquisition among discordant couples as outlined in the study done by (Steel, 2011) who states that major HIV epidemics emerge and spread rapidly under conditions of poor STI control, and further weakening of STI control may well undermine other HIV prevention efforts.

5.1.3 Index partners in HIV sero-discordant relationship knowledge on PHDP and how it affects PHDP compliance

Above 90% of the study participants exhibited knowledge of all PHDP indicators, most of them 76% got the knowledge from the health care facilities. This shows that PHDP knowledge is well disseminated at health care facilities. The respondents showed having knowledge on importance of HIV status disclosure at 94.1% as well as the importance of testing sex partner 98.9%. Out of the 370 respondents 99.2% understood the importance of using condom. Despite high number of respondents accessing PHDP knowledge only 66.5% complied with PHDP practice, this is supported by a study done by (De Walque, 2008) that lack of condom use among HIV negative partner in HIV discordant relationship is high even when the couples are aware of their HIV discordant state. There was a significance relationship between knowledge on contraceptive use in
HIV positive individual and compliance with PHDP practice at P value 0.017. Further data analysis showed that the respondents without contraceptive knowledge complied to PHDP intervention slightly more than those with the knowledge at an odds ratio of 0.12. However, compliance to PHDP practice in both groups that had or had no knowledge on contraception use in HIV positive individuals was high. This finding also agrees with findings in (KHDS, 2009) that states the practice of family planning in Kenya has increased steadily since the early 1980s. The focus group discussion showed that there was adequate knowledge among the respondents on the importance of each of the PHDP interventions. The respondents also understood that pregnancy lowers one’s immunity level to opportunistic infection and as a result they knew why family planning is important in HIV positive individuals. This is also confirmed by the low rate of pregnancies in all the three HIV sero-discordant cohorts that participated in the study.

5.1.4 PHDP Perceptions of index partners in HIV sero-discordant relationship and how they affect PHDP compliance

Study participants perception of PHDP practice was positive overall. Most of the study participants stated that STI increases the risk of one acquiring HIV this is also supported by two different studies done by (Mc Clellan, 2007) that states the presence of STI is an important correlates of HIV-1 transmission within discordant heterosexual relationships, another study done by (Fleming, 1999) also states that sexual transmission of HIV is enhanced by presence of another sexually transmitted infection. Seventy two percent perceived disclosure of one’s status as necessary and doable, this is supported by study done by (UNAIDS, 2012) that states most new HIV infection occur
in HIV sero-discordant couples where disclosure remains low, some participants found it impossible to disclose their HIV status to their sex partners and they expressed abandonment, stigma and violence as a hindrance to disclosure. This is also outlined in HIV sero-discordant couples study that was done by (Benard, 2009), it showed sero-discordant couples desire intimate contacts and children born to them despite one of the partners being HIV sero-positive, and this led to fear of disclosure citing abandonment or violence by the HIV positive partner.

On alcohol consumption the respondents illustrated a good understanding between alcohol consumption and HIV/ ART, issues that were reported include said: alcohol consumption might make one forget to take their treatment completely or on scheduled time leading to ART resistance and poor immunity, less than a quarter of the study participants said they might forget to adhere to the clinic appointments hence miss care and treatment, while some said alcohol consumption will interfere with ART uptake and result into ART failure leading to low immunity with high chances of opportunistic infections. This results agrees with the study done by National Institute of on Alcohol Abuse and Alcoholism (NIAAA, 2011) that alcohol consumption affects one’s judgment hence diming perception risk of behavior that may lead to HIV transmission. In focus group discussion most of the study participants had a positive perception of positive health, dignity and prevention interventions. Interventions reported by the respondents included proper use of condoms, STI testing, ARV adherence, regular visits to the health facility, couple HIV testing and counseling and HIV testing for the discordant partner. Couple HIV testing and counseling was reported to be an effective intervention to reach discordant couples as it will allow all the issues that involve the
couple addressed at once. In addition it gives discordant couples advice on how to live in their state.

5.1.5. Challenges faced by index partners in HIV sero-discordant relationship and how they affect PHDP compliance

Most of the study participants found PHDP intervention, affordable, available, appropriate and acceptable and very important for their well being. Bivariate analysis of challenges showed that there was significance relationship between condom demonstration and PHDP compliance as well as significant relationship between condom supply and compliance to PHDP. The odds ratio the respondents who accessed both condom demonstration and supply complied more to PHDP practices compared to those who did not access either supply or condom demonstration. This agrees with (Slaymaker, 2011) study that showed the importance of consistence condom use and HIV infection among discordant couples. The information from focused group discussions showed that male partners have a big influence on the adoption of most of the PHDP interventions including condom use and family planning, this finding agrees with three different studies (Sarkar N, 2008; Ngure G, 2012; and Faton A, 2009) who showed that male gender was reported to control the decision to use condom in sero-discordant relationships. Some respondents emphasized on this point from their report that some male partners may have a problem with contraceptive uptake because of the perception that it affects libido.

Condom Use was also a challenge due to perception of lack of trust between the couple using condom, lack of knowledge on condom use among men and the loss of the real
feeling of sex as well as discomfort in using condom, this is supported by a study done by (Steen, 2011) that states sero-discordant couples have low rates of condom use and may continue to have unprotected intercourse despite knowledge of their sero-status. Multiple Partnerships were also cited as a challenge affecting adoption of PHDP interventions, this agrees with findings of (MacKenzie C, 2007) that show than concurrent relationships contribute to spread of HIV. This is especially a challenge when one of the partners is HIV infected and the others are not, this is supported by a study done by (Allen, 2003) that illustrates that HIV negative individuals living in stable HIV discordant partners are twice as likely to get infected with HIV than those living in HIV negative concordant relationship. Distance between the partners was also noted to influence the relationship status of a discordant couple by increasing the risk of multiple partner relationships or casual sex resulting into acquiring HIV, this is supported by a study done by (Curie, 2005) that stated the direction of the spread of HIV was not only from returning migrants to their partners but also from women who stayed at home to their migrant partners.

5.2 Conclusion

1. Only 66.5% index partners complied to PHDP

2. The index clients have high knowledge of PHDP services and there is significance relationship between importance of using contraceptive in HIV positive and PHDP compliance
3. There is no significant relationship between perceptions of PHDP practice and compliance to PHDP practice by the index partners in sero discordant relationship, however stigma, violence and abandonment was reported to hinder status disclosure.

4. There is significant relationship between challenges in condom supply, condom demonstration and compliance to PHDP practice. The respondents who had no challenge tend to comply more to PHDP than those with a challenge.

5. Dignity aspect of PHDP has not been incorporated into PHDP indicators.

5.3. Recommendations

1. PHDP compliance should be emphasized on by health care workers to ensure complete adoption.

2. Index partners have high PHDP knowledge hence, dissemination should continue.
3. Health care givers should address stigma, violence and abandonment in relation to status disclosure among the index partners to enhance PHDP compliance.

4. Condom demonstration and supply is important in promoting PHDP compliance among the index partners in sero discordance relationship.

5. Dignity aspect of PHDP should be evaluated by policy makers for its inclusion into the PHDP indicators.
REFERENCE

Kenya Ministry of Health. (2013) *Kenya AIDS indicator survey 2012*. Nairobi, Kenya.

NEPHAK, GNP+. (2012) Positive Health, Dignity and Prevention in Kenya. Findings and Recommendations from Studies led by People Living with HIV. NEPHAK, Nairobi, Kenya

Ruzangira E, Wandiebe S, Abaasa A, Bwanika AN, Bahemuka U, Amornkul P, Pria MA, Grosskurth H, Kamali A. (2011) HIV incidence and risk factor for HIV acquisition in HIV discordant couples in Masaka Uganda: an HIV vaccine preparedness study. *PLOS one;* 6(8):e24037

Bernard, E.J. (2009) Positive Health, Dignity and Prevention. Technical Consultation Report, 27–28 April 2009, Hammamet, Tunisia.

Matovu, J. K. (2010). “Preventing HIV transmission in married and cohabiting HIV-discordant couples in sub-Saharan Africa through combination prevention.” *Current HIV research* 8(6): 430-440

De Walque (2006) discordant couples: HIV infection among couples in Burkina Faso, Cameroon, Ghana, Kenya, and Tanzania. *Policy Research Working Paper 3956*. World Bank: Washington, D.C.;
National Institute on Alcohol Abuse and Alcoholism (2002) Alcohol alert, No 57

UNAIDS, (2012) Joint United Nations Program on HIV/AIDS report on the global AIDS epidemic. Geneva

Lingappa JR, Lambdin B, Bukusi EA, Ngure K, Kavuma L, Inambao M, Kanweka W, Allen S, Kiarie JN, Makhema J, Were E, Manongi R, Coetzee D, de Bruyn G, Delany-Morelwe S, Magaret A, Mugo N, Mujugira A, Ndase P and Celum C; Partners in Prevention HSV-2/HIV Transmission Study Group (2008) Regional differences in prevalence of HIV-1 discordance in Africa and enrollment of HIV-1 discordant couples into an HIV-1 prevention trial Jan 9; 3(1):e1411

Allen, S., J. Meinzen-Derr, (2003). Sexual behavior of HIV discordant couples after HIV counseling and testing. AIDS 17(5): 733

Mackenzie C, Kiragu, K. (2007) Should voluntary counseling and testing counselors address alcohol use with clients? Finding from an operation research study in Kenya, Horizon research update. Nairobi ; population council

Lurie, et al. (2003) Who infects whom? HIV-1 concordance and discordance among migrant and non-migrant couples in South Africa. AIDS, 17(15), pp. 2245-52.
Sakar NN. (2008) Barriers to condom use. *The European journal of Contraceptive and Reproductive healthcare*. Pg 13; 114-122

Gelmon L, Kenya P, Oguya F, Cheluget B, Haile G. (2009) Kenya HIV prevention response and modes of transmission analysis. Kenya National AIDS Control Council

Central Statistical Office, Macro International. (2008) *Swaziland demographic and health survey 2006–2007*. Mbabane, Central Statistical Office, Macro International.

Ngure K, Mugo N, Baeten J, Olungan O, Olenya J, Tamooh H and Shell Duncan B. (2012) A qualitative study of barriers to consistent condom use among HIV sero-discordant couples in Kenya, *Aids care psychological and socio-mechanical aspect of HIV*. Pg 24; 509-516

WHO, UNAIDS and UNICEF. (2011). Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access. Progress Report. Geneva: WHO.

WHO (2012). About antiretroviral therapy for prevention. Retrieved 19/5/2014 at: http://www.who.int/hiv/topics/artforprevention/about_art/en/index.html.
Faton A. and A Van Der Straten (2009) Concurrent sexual partners among individual in HIV sero-discordant heterosexual couples *international journal of STD and AIDS* 2009 pg 10; 679-682

Granich, R.M., Gilks, C.F., Dye, C., DeCock, K.M., & Williams, B.G. (2009) Universal voluntary HIV testing with immediate antiretroviral therapy as a strategy for elimination of HIV transmission: a mathematical model. Lancet, 373(9657), pp. 48-57

Garnett, G. (2008) XVII International AIDS Conference plenary: panel discussion on the state of the epidemic, August 4, 2008. New England Journal of Medicine, 365, pp. 493-505.

NIH (2011) Treating HIV-infected people with anti-retrovirals protects partners from infection: findings result from NIH-funded international study. Retrieved 19/5/2014 at: http://www.niaid.nih.gov/news/newsreleases/2011/Pages/HPTN052.aspx.

Richard Steen,a Teodora Elvira Wi,b Anatoli Kamali c & Francis Ndowa (2011). Sexual transmission of HIV according to viral load and antiretroviral therapy: systematic review and meta-analysis.
Fleming DT and Wasserheit JN. (1999) From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sexually Transmitted Infections 75: 3–17

McClelland RS, Sangare L, Hassan WM, Lavreys L, Mandaliya K, Kiarie J, Ndinya-Achola J, Jaoko W and Baeten JM. (2007) Infection with Trichomonas vaginalis increases the risk of HIV-1 acquisition. Journal of Infectious Diseases 195: 698–702.

Abu-Raddad LJ, Magaret AS, Celum C, Wald A, Longini IM, Jr., Self SG and Corey L (2008). Genital herpes has played a more important role than any other sexually transmitted infection in driving HIV prevalence in Africa. PLoS ONE May 21; 3(5):e2230.

Cohen MS, Hoffman IF, Royce RA, Kazembe P, Dyer JR, Daly CC, et al.(1997).Reduction of concentration of HIV-1 in semen after treatment of urethritis: implications for prevention of sexual transmission of HIV-1. Lancet 1997.

CDC, (2008) Family planning Methods and Practice, Africa.; Centers for Disease Control and Prevention, Washington, DC

Kenya Ministry of Health (2009) Kenya demographic health survey, Nairobi, Kenya.

Stephenson R. bascheri A. Clements S, et al, (2007) Contextual influences on modern contraception use in sub Saharan Africa. Am J.Public health. ;97:1233-1240.
Heffron R et al, (2010). A prospective study of contraceptive use among women in HIV-1 sero-discordant partnership in sub-Saharan Africa. *Sexual Transmitted Disease*, 37(10) 621-628

Baeten JM, McClelland RS, Corey L, Overbaugh J, Lavreys L, Richardson BA, Wald A, Mandaliya K, Bwayo JJ and Kreiss JK (2004). Vitamin A supplementation and genital shedding of herpes simplex virus among HIV-1-infected women: a randomized clinical trial. *Journal of Infectious Diseases*; 189:1466–71

UNAIDS, GNP+. 2013. Positive Health, Dignity and Prevention: Operational Guidelines. Geneva and Amsterdam

PEPFAR Fiscal Year 2012 Country Operational Plan (COP) Guidance (August 2011). Retrieved 19/5/2014 at: http://www.pepfar.gov/guidance/cop2012/index.htm

NEPWHAN, GNP+ (2012). Positive Health, Dignity and Prevention: Findings and Recommendations from studies led by People Living with HIV. NEPWHAN. Abuja, Nigeria.

BONEPWA, GNP+ (2012). Positive Health, Dignity and Prevention: Findings and Recommendations from studies led by People Living with HIV. BONEPWA. Gaborone, Botswana
UAC (2011) National HIV Prevention Strategy 2011-2015. Uganda AIDS Commission, Kampala

GNP+ (2009) Living 2008, The Positive Leadership Summit Report.

GNP+, UNAIDS (2009) Moving Forward on Positive Health, Dignity and Prevention.

GNP+ (2009) Information Note on Positive Health, Dignity and Prevention. Auerbach, J. (2004). Principles of positive prevention. *J Acquir Immune Defic Syndr*, 37(1), S122-S125.

Granich RM, Gilks CF, Dye C, et al. Universal voluntary HIV testing with immediate antiretroviral therapy as a strategy for elimination of HIV transmission: a mathematical model. Lancet 373 (9657); 48 – 57, 2009.

NEPHAK, GNP+ (2012). Positive Health, Dignity and Prevention in Kenya. Findings and Recommendations from Studies led by People Living with HIV. NEPHAK, Nairobi, Kenya.

Janssen, R.S., & Valdiserri, R.O. (2004). HIV prevention in the United States: Increasing emphasis on working with those living with HIV. *J Acquir Immune Defic Syndr*, 37(Suppl. 2), S119-121.
Centers for Disease Control and Prevention (2003). Advancing HIV prevention: New strategies for a changing epidemic—United States, 2003. Morbidity and Mortality Weekly Report, 2, 329–332.

Remien R.H, Berkman A., Myer L., et al. AIDS (2008), Integrating HIV Care and HIV Prevention: Legal, Policy and Programmatic Recommendations Vol. 22 Supplement 2, pp. S1-S132.
APPENDICES

Appendix 1: Questionnaire

Compliance to Positive Health, Dignity and Prevention services among index client in HIV sero-discordant relationship in Nairobi County, Kenya

Questionnaire Number.......................... Clinic name..........................

Date.................................................

A. SOCIO-DEMOGRAPHIC FACTORS

1. What is your age (Umri)............. (Yrs) (Miaka)

2. What is your sex (Jinsia) 1 [Male][Mke] 2 [Female][Mume]

3. Do you live with your partner 1[Yes] 2[No]
   Je unaishi na mpenzi wako 1[Ndio] 2[La]

4. What is your marital status 1)Married 2) Single
   Je umeoa/ umeolewa 1[Ndio] 2[La]

5. If married, duration of relationship..............................
   Kama umeoa/ olewa, muda wa uhusiano..............................

6. What is your level of education 1) None 2) Primary 3) Secondary 4) College
   Kiwango cha elimu 1[Hakuna] 2 [Darasa la nane] 3[ Upili] 4[ Chuo kikuu]
7. What is your source of income 1) Employment 2) Business 3) Other
(specify)...............................................................................................................

Mapato yako yanatoka kwa kazi ya aina gani 1) Ajira 2) Biashara 3) Ingine
(taja)......................................................................................................................

8. On average how much do you earn per month (Kshs)

1) 0-5000  2)5001-10,000  3)10001 and above

Kwa jumla, unapata mapato ya pesa ngapi kwa mwezi

1) 0-5000  2)5001-10,000  3)10001 na zaidi

9. On average, how much does your partner earn per month (Kshs)

1)0-5000  2)5001-10,000  3)10001 and above

Kwa jumla, mpenzi wako anapata pesa ngapi kwa mwezi

1) 0-5000  2)5001-10,000  3)10001 na zaidi

B. LEVEL OF PHDA KNOWLEDGE

1. Have you ever heard of HIV/AIDS

1[Yes]  2[No]

Je, umewahi kusikia ju ya UKIMWI?
2. What was your source of information about HIV/AIDS?

1 [Hospital]  2 [Media]  3 [Community leaders]  4 [Friends]

Nini kilikuwa chanzo chako cha habari kuhusu UKIMWI?

1 [Hospitali]  2 [Vifaa vya habari]  3 [Viongozi wa jamii]  4 [Marafiki]

3. How is the disease transmitted?

1. [Sexual interaction]
2. [Sharing injection needles]
3. [Mother to child transmission]
4. [Sharing utensils]
5. [Blood transfusion]

Je, unaweza tambuajinsi tofauti ambazo ugonjwa huu unaambukizwa?

1 [Ngono mwingiliano]
2 [Kushirikiana sindano kwa sindano]
3 [Mama kwenda kwa mtoto]
4 [Kugawana vyombo]
5 [Kuongezewa damu]
4. Is it important to disclose your HIV status to your sex partner?

1) Yes 2) No

Je ni vyema kumuelezea mwenzako juu ya hali yako ya virusi vya ukimwi

1. Ndio 2) La

4a. If yes why...

Kama jibu ni ndio eleza kwa urefu...

4b. If no why...

Kama jibu ni la eleza kwa urefu...

5. Is it important for your sex partner to be tested for HIV?

1) Yes 2) No

Je kuna umuhimu wa kumpima mwenzako virusi vya ukimwi?

5a. If yes why...

Kama jibu ni ndio eleza kwa urefu...

5b. If no why...

Kama jibu ni la eleza kwa urefu...

6. Is condom use important for someone who is HIV positive?
1) Yes 2) No

Je kuna umuhimu kutumia mpira kwa yule mtu ambaye ana virusi vya ukimwi

I. Ndio 2) La

6a. Explain.................................................................

Fafanua.................................................................

7. Name any sexually transmitted infections that you know

Taja ugonjwa wa zinaa

1) HIV-Ukimwi

2) Syphilis-Kaswende

3) Gonorrhea-Kisonono

4) Chlamydia-Klamidia

5) Don’t know

6) Others.........................

8. Does the presence of sexually transmitted diseases increase the risk of HIV/AIDS transmission?

1[Yes] 2[No] 3[Don’t Know]

Je ugonjwa wa zinaa unoengeza uwezekano wa kuambukizwa virusi vya ukimwi?
8. Which contraceptives do you know?

1) Pills

2) Injectables

3) Implants

4) IUDS

5) Others

6) Don’t know

9. Is alcohol consumption good for someone who is HIV positive?

1) Yes

2) No

9a. Explain

C. PERCEPTIONS OF PHDP

1. Do you think HIV/AIDS infection is a threat to your family’s well being?

1[Yes] 2[No]

Unafikiri UKIMWI ni tishio kwa uhusiano wa familia yako?

1[Ndio] 2[La]
2. Is/Was disclosing your HIV status to your partner a problem?

1[Yes] 2[No]

2a. If Yes why?

1.) Fear of abandonment
2.) Fear of Stigma
3.) Fear of Violence
4.) Other

3. Why is it important to bring your sex partner for HIV testing?

1) To find out if he/she is also infected so as to start treatment
2) To find out if he is not infected to prevent infecting him/her
3) For assisted disclosure
4) Not important
5) Other

4. Do condoms prevent the spread of HIV/STI? 1[Yes] 2[No]

Je mpira wa kondomu unazuia ugonjwa wa zinaa? 1[Ndio] 2[La]

6. Is it important for a HIV positive woman to take contraceptives?

1[Yes] 2[No]
6A. Explain.................................................................

7. Do contraceptives reduce the spread of HIV/STI? 1[Yes] 2[No]

Je upangaji uzazi unapunguza ueeneaji wa ugonjwa wa zinaa 1[Ndio] 2[La]

1[Ndio] 2[La]

7. How does alcohol consumption affect HIV treatment?

1) One might forget to take his/her drugs on time

2) One might forget to honor treatment date

3) Alcohol interferes with ARV uptake in the body

4) Alcohol consumption does not affect HIV treatment

5.) Don't Know

6.) Others.............................................................

8. Does the presence of sexually transmitted diseases increase the risk of HIV/AIDS transmission?

1[Yes] 2[No] 3[Don’t Know]

Je ugonjwa wa zinaa unoengeza uwezekano wa kuambukizwa virusi vya ukimwi?

1[Ndio] 2[La] 3[Siwezi kumbuka]

9. Why is it important to take your ARVS as prescribed?
1) To reduce viral load

2) 2 To increase cd4 count

3) To reduce opportunistic infections

4) Its not important

5) Don’t know

6) Others..............................

D.PHDA CHALLENGES

Affordability

1  Do you find it easy to honor all your clinic appointments?

1) Yes 2) No 3) Not sure

1a. If no or not sure why?

1) Lack of bus fare

2) Long distance

3) Poor communication of return dates by staff

4) Expensive services offered

5) Other.................................................
2. Are the following services available at your point of care?

1) Adherence? yes no don’t know

2) STI screening and treatment? Yes No don’t know

3) HIV status disclosure? counseling yes no don’t know

4) Partner testing? yes no don’t know

5) Condom demonstration? yes no don’t know

6) Condom supply? yes no don’t know

7) Family planning services? yes no don’t know

8) Alcohol consumption counseling?

3. Are the above services important to HIV positive individuals?

1) Very Important

2) Important

3) Less important

4) Not Important

4. Do you find the following services necessary to you?

1) Adherence? yes no don’t know

2) STI screening and treatment? Yes No don’t know
3) HIV status disclosure? counseling  yes no don’t know

4) Partner testing?  yes no don’t know

5) Condom demonstration?  yes no don’t know

6) Condom supply?  yes no don’t know

7) Family planning services?  yes no don’t know

8) Alcohol consumption counseling?

E. PHDA PRACTICES

1. How many children do you have ...........................

   Idadi ya watoto..............................

2. Do you desire more children in future?  1 [Yes] 2 [No] 3[Not sure]

   Je, unataka watoto zaidi katika siku za baadaye 1 [Ndio] 2 [La] 3 [Sina uhakika

3a. Do you (or your partner) use any family planning method  1[Yes] 2[No]

   Unatumia mbinu yeyote ya kupanga uzazi 1[Ndio] 2[La]

3 b. If Yes in 3a above, which method(s) do you use?

   1) Oral pill 2) Condom 3) Depo 4) Other (specify) .................

   Kama ni Ndio, unatumia mbinu ipi?
1) Simulizi kidonge 2) mpira 3) Depo 4) Ingine(taja)..............

3 c. If no in 3 a above, do you desire to be pregnant within the next six months?

1[Yes] 2[No]

Kama ni la, unatumai kushika mimba kwa miezi sita ijayo?

1[Ndio] 2[La]

3d. If no in 3 c above, please elaborate

______________________________________________________________

Kama jibu ni la. Tafadhali tuelezee zaidi

______________________________________________________________

4. Did you use any protection the last time you had sex

1[Yes] 2[No] 3[Can’t remember]

Je, ulitumia kinga yeyote mara ya mwisho ulipo fanya ngono

1[Ndio] 2[La] 3[Sikumbuki]

5. Was it your regular partner

1[Yes] 2[No]

Ililuwa ni mpenzi wako wa mara kwa mara

1[Ndio] 2[La]

3. On average how many sexual encounters do you have with your spouse partner per month.............................
4. Do you use protection 1 [Yes] 2[No]

   Je unatumia kinga yeyote 1[Ndio] 2[La]

5. If Yes in 19 above, which method do you use? 1) Condom 2) Other (specify).............

   Kama ni Ndio, unatumia mbinu ipi? 1) Mpira 2) Ingine(taja).......... 

6. On average, how often do you use protection with your regular partner 1)
Always 2) Sometimes 3) Never

   Kwa jumla , unatumia kinga mara ngapi na mpenzi wako wa mara kwa mara 1)
Kila wakati 2) Wakati mwingine 3) Hakuna kamwe

7. Do you have another sexual partner 1 [Yes] 2 [No]

   Je, una mpenzi mwingine 1[Ndio] 2[La]

8. If Yes in 7 above, how many....................

   Kama ni ndio, wangapi.....................

9. Do you know their HIV status 1 [Yes] 2 [No]

   Unajua hali yao ya ukimwi 1[Ndio] 2[La]

10. How long did it take you to disclose your HIV status to your other sex partners?
Wewe huchukua mda gani kuwaelezea wapenzi wako juu ya hali yako ya ukimwi?

1 [immediately] 2 [after intimacy] 3 [Never]

1 [mara tu nakutana nao] 2 [Baada ya ngono] 3 [Siwaambii]

13. Do you take alcohol? 1 [Yes] 2 [No]

Je, unakunywa pombe 1 [Ndio] 2 [La]

14. If Yes in 13 above, how many times per week......................

Kama Ndio, mara ngapi kwa wiki.................................

15. Have you ever had sex when drunk 1 [Yes] 2 [No] 3 [Can’t remember]

Umewahi kufanya mapenzi ukiwa mlevi 1 [Ndio] 2 [La] 3 [Siwezi kumbuka]

17. Did you honor the last clinic return date 1 [Yes] 2 [No]

Je anayehojiwa alitimiza tarehe yake ya kurejea kwemoje kiliniki kwa maendelezo ya matibabu?

1 [Ndio] 2 [La]

8. Have you been screened for Sexually transmitted disease in the past six months?

1 [Yes] 2 [No] 3 [Can’t remember]

7. Have you ever had a Sexually Transmitted Disease in the past 6 months?

Umewahi kutibiwa kwa ugonjwa wa zinaa katika uhusiano wako na mpenzi wako?
9. If Yes were where did you access treatment

1) Private hospital

2) Government hospital

3) Not treated

4) Other.................................
Appendix 2: Informed Consent Form

Compliance to PHDP among index client in HIV sero-discordant relationship in Nairobi County Kenya

Hello, my name is Maureen Akolo. I am a master student at Kenyatta University-Nairobi campus. I am conducting a study on compliance to PHDP among index client in HIV sero-discordant relationship in Nairobi County Kenya as part of my thesis. I would like to seek your permission to participate in this study, please read the consent form below.

Introduction and Purpose of the Study

This study seeks to assess the sexual behavior, knowledge, attitude and current practice of PHDP by the index client in HIV sero-discordant couples in order to help find ways that would empower them to promote HIV prevention hence, lower HIV incidences within sero-discordant couples and the entire population.

Procedures

If you agree to take part in this study, you will be asked to fill in a questionnaire with the help of a trained health care worker that will provide information on how you relate with your partner(s).

Risks,
There are no physical risks associated with this study but you may feel uncomfortable if asked some questions which you may consider sensitive and invasive. You don’t have to answer any question you are not comfortable with.

**Benefits**

The information you provide to the investigator will shed light on the factors that contribute to adherence to PHDP intervention among index clients in sero-discordant relationships, and this will assist us in informing other discordant couples and also help the government to develop suitable programs for HIV discordant couples in the country.

**Other Information**

Any information given to the study will be kept private. Your name will not be used in any report coming from this study. The questionnaires and the consent form will be safely kept where only the study staff may have access to the information.

In case you have any questions you can contact the investigator on 0721-677442 or the ERC chairman on: The Chairman Kenyatta University Ethical Review Committee

P.O. Box 43844- 00100, Nairobi.

Tel: 254-20-8710901-12 ext 3840

I have read the consent form. I have been informed that completion of this form is voluntary and I therefore make my decision.
Focus Group Discussion Guide

Subject Information Sheet/ Verbal Consent

For Focus Group Discussion Participants: To be read before starting the focus group discussion.

Hallo. My name is Maureen Akolo. I am a master student at the Kenyatta University, community health department. I am conducting a study to find out if index clients in HIV sero-discordant relationships have PHDP knowledge, their perception on this intervention, their current practices and challenges encountered. I would like to invite you to participate in this study. The study aims to gather this information and help address issues affecting PHDP. We are looking forward to hearing your experiences and learn from you and your peers. We are carrying out focus group discussions to gather this information. We are asking if you will be willing to participate in one of these group discussions and share your views. Focus discussion groups have about 8-12 people who get together and discuss their ideas and thoughts about important issues. The discussions are led by a member of our research staff and an independent facilitator. Your responses, opinions and ideas are very important to this project. You do
not have to talk about your personal experiences. You will be asked to speak generally about your and others' opinions and experiences. Please do not use any names when you share what others have told you. We will not use any names when writing our reports.

We would like to invite you to participate in one of the planned focus group discussion this week. This session will be tape-recorded and a transcript of the discussion will be made. By consenting to participate in the study, you are agreeing to the tape recording of the session. The session will take about 2 hours to complete.

If you agree to take part in the study, you will be given a soda during the session and provided with 100 Shillings to help pay for your transportation fee to your Nairobi home.

You may not feel comfortable answering some questions in front of your peers. You have the right to refuse to answer any question that you do not wish to answer. Also, you can choose to leave the discussion at any time. You do not have to participate if you do not want to but this will not affect your chances of ever joining or using the services provided through the program.

The benefit to you is that you will be sharing your opinions and experiences that will help improve the service provided to you especially those related to uptake of the antiretroviral treatment.

By agreeing to participate you are agreeing not to share information provided by this group outside this focus group discussion. However, we cannot guarantee that information discussed in the group will not be shared, so please consider this before
discussing personal matters. We will protect information about you and your taking part in this research to the best of our ability. Your name will not appear on the interview records or transcripts. We will keep all sensitive files, notes, and interview tapes password protected or in locked cabinets and we will destroy all interview tapes at the end of the study. If the results of the research are published, neither your name nor personal identifying characteristics or those of anyone else in the study groups will be revealed.

- Do you have any questions?
- Do you agree to participate in the focus group discussion? If you do not want to participate, you may leave the room at this time.

**FOCUS GROUP FACILITATOR:** You must sign below before proceeding. Your signature certifies that the objectives and procedures of this study have been read to the focus group participants. It also certifies that you have answered all the questions that the respondents had about the study and that each participant remaining in the room has voluntarily agreed to take part in the research.

---

Date ___________________________ Signature of Focus Group Facilitator
Facilitator Instructions:

- The first step is to explain to participants that this focus group discussion will be recorded. Explain why you need to record the session and give them time to express questions or concerns.
- Once you have all people agree to the recording, start the tape recorder and begin with the informed consent process.
- As a warm up, you as the moderator need to introduce yourself (a bit of information about your job, your family, and what participants can call you) and give some information about the number of discordant couples and the PHDP services being offered as per the CDC outline.
- The discussion will assess the couples knowledge, awareness and attitudes to the HIV/AIDS disease and PHDP intervention. The facilitator will assess the general information about PHDP services, especially status disclosure and partner testing.
- Then find out what the participants want to be called during the tape recording.

Facilitator: “I am going to describe for you the situation faced by a discordant couple that have been married for about 10 years. As I read, think about whether you know any one like them and think about what their life must be like. Then I will ask you some questions on how they might act in a certain situation.”
(Fatiah and Musa:) have been married for about 12 years. They have five children who attend the nearby primary school. Musa works as a long distant truck driver and has to be away from home for extended periods of time. Fatiah is a housewife who stays at home and has been married thrice. During a recent visit to the medical facility, they had a HIV test done that showed Fatiah as HIV positive. Musa on the other hand is HIV negative. The couple joined the discordant couples support group and was counseled on PHDP; importance of status disclosure/ other partners testing, correct and consistence condom use, STI screening and treatment, care and treatment adherence among other prevention strategies. Fatiah was keen to follow the PHDP intervention; she even contacted her former husbands and convinced them to get tested. Musa on the hand refused to use condoms with all his wives including his fourth wife Fatiah. He says he is a “lion” which translates to being resistant to HIV. He has warned his wife against using contraceptive- she is now pregnant with their sixth child.

1. Do you think Fatiah and Musa should continue seeking medical care from the medical centre regularly?

2. Is it advisable for them to attend the support group together?

3. Do you think that they face social stigma due to their discordant state?

4. What is the main role of PHDP intervention?

5. The medical staff at the support facility advocates for various prevention methods (PHDP) to reduce the transmission rates. One of them is correct and consistent use of condoms known to reduce the transmission rates.
6. Do you think Musa should start using condoms as advised by the medical personnel?
7. What are some of the challenges you think hinders Musa from using condom?
8. What incentives or additives should be included in order to improve condom use?
9. How many times do you think they have sex? Was this the rate even before the positive HIV and AIDS diagnosis was made?
10. What other internal mechanisms do they have that reduce the transmission rates among them? (Discuss coitus interruptus, complete abstinence etc)
11. How often do you think they use condoms with casual partner/s?
12. If they don’t use condoms all the time, is it because they love them or that they trust them?
13. Fatiah is pregnant with their sixth child (discuss the effects brought about by the pregnancy)
14. Do you think Fatiah should use family planning method after delivering despite Musa refusal?
15. What could be the reasons of Musa refusing his wife from accessing family planning?
16. What can Fatiah do to convince her husband that she needs family planning method?
17. Musa works for long periods away from home. Do you think this affects the quality of their relationship? (Discuss the effects brought about by the separation).
18. Do you think that being discordant has affected the quality of their relationship?
19. Do you think that Fatiah trusts Musa? Is she more suspicious now that he works for extended periods away from the home?
20. Do you think Musa has casual sexual partners on the road?
21. Do you think that Musa knows his casual sex partners HIV status?
22. Musa has three other wives?

23. Do you think he needs to disclose Fatiah’s status to them?

24. Do they need to come for HIV/STI screening to the clinic and why?

25. **Musa finally accepts and stats using condoms correctly and consistently, he even takes Fatiah for tubal ligation after delivery. The other wives are brought for HIV/STI screening and treatment and he still remains HIV negative. Do you think that they should continue accessing PHDP interventions?**

26. The family now attends the discordant couple support group meeting every third Saturday of the month and they think the meetings are beneficial and have improved their quality of life. Do you think the medical personnel are helpful?

27. Do you think they get quality and professional services every time they visit the facility?

    **Thank you for participating**

    **THE END**
Appendix 3; Kenyatta university research clearance form
Internal Memo

FROM: Dean, Graduate School
DATE: 15th December, 2014

TO: Akolo Maureen Musimbi
C/o Community Health Dept.

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board, at its meeting of 10th December, 2014, approved your Research Proposal for the M.Ph Degree Entitled, “Compliance to Positive Health, Dignity and Prevention Services among HIV Infected Index Partners in HIV Sero-Discordant Relationships in Nairobi County, Kenya.”

You may now proceed with your Data Collection, subject to clearance with the Permanent Secretary, Ministry of Higher Education, Science and Technology.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

SILVERIA THION’O
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Department of Community Health

Supervisors:

1. Dr. Justus O.S. Osero
C/o Department of Community Health
Kenyatta University

2. Dr. Joshua Kimani
College of Health Sciences
Nairobi University
The Principal Secretary,
Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR AKOLO MAUREEN MUSIMBI—REG. NO. Q57/CTY/PT/26064/2013

I write to introduce Ms. Akolo Maureen Musimbi who is a Postgraduate Student of this University. She is registered for M.PH degree programme in the Department of Community Health.

Ms. Akolo intends to conduct research for a M.PH proposal entitled, “Compliance to Positive Health, Dignity and Prevention Services among HIV Infected Index Partners in HIV Sero-Discordant Relationships in Nairobi County, Kenya.”

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL
Appendix 4; NACOSTI research permit

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 310071, 2210420
Fax: +254-20-318249, 318249
Email: secretariat@nacosti.co.ke
Website: www.nacosti.go.ke
When replying please quote

Ref: No.

NACOSTI/P/15/4407/5518

Maureen Musimbi Akolo
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Compliance to positive health, dignity and prevention services among HIV infected index partners in HIV sero-discordant relationships in Nairobi County, Kenya” I am pleased to inform you that you have been authorized to undertake research in Nairobi County for a period ending 17th March, 2016.

You are advised to report to the County Commissioner, the County Director of Education and the County Coordinator of Health, Nairobi County before embarking on the research project.

On completion of the research, you are required to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

SAID HUSSEIN
FO: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix 5; Kenyatta University Ethics Review Committee form
Kenyatta University

Email: chairman.kuerc@kju.ac.ke
secretary.kuerc@kju.ac.ke
erc.ku.kuerc@gmail.com
Website: www.ku.ac.ke

Date: 18th March, 2015

Akolo Maureen Musimbi
Kenyatta University
P.O. Box 43844 -00100, Nairobi.

Dear Akolo,

APPLICATION NUMBER PKU/321/1297 - "COMPLIANCE TO POSITIVE HEALTH, DIGNITY AND PREVENTION SERVICES AMONG HIV INFECTED INDEX PARTNERS IN HIV SERO-DISCORDANT RELATIONSHIPS IN NAIROBI COUNTY, KENYA"

1. IDENTIFICATION OF PROTOCOL
The application before the committee is with a research topic, "Compliance to Positive Health, Dignity and Prevention Services among HIV Infected Index Partners in HIV Sero-Discordant Relationships in Nairobi County, Kenya." Received on 24th February 2015 discussed on 10th March 2015.

2. APPLICANT
Akolo Maureen Musimbi

3. SITE
Nairobi County, Kenya

4. DECISION
The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 18th March 2015.

5. ADVICE/CONDITIONS
   i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
   ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
   iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
   iv. Submit an electronic copy of the protocol to KU-ERC.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

PROF. NICHOLAS K. GIKONYO
CHAIRMAN ETHICS REVIEW COMMITTEE

[Signature]

Dated this day of 22/3/2015

cc: Vice- Chancellor