

**FACTORS ASSOCIATED WITH THE UPTAKE OF ASSISTED PARTNER
NOTIFICATION SERVICES AMONG NEWLY DIAGNOSED HIV-POSITIVE
ADULTS ON CARE IN NDHIWA SUB-COUNTY; HOMA BAY COUNTY,
KENYA**

BY

HELLEN MULALYA MASILA

**MASTERS OF SCIENCE
FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM
(FELTP)**

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DECLARATION

I declare that this research is my original work and has not been submitted to other universities for degree awards. I have thanked contributions and correctly listed all of my sources. The required approvals have been received, and the research conforms with ethical principles.

Author: Hellen Mulalya Masila

Signature: _____

Date: Date: [_____]

FELTP/5853/22

The following university supervisors have given their approval for this thesis to be submitted:

Dr. Samson Ndege

Moi University, School of Public Health

Department of Medical Statistics and Epidemiology

Signature: _____

Date: [_____]

Dr. Fredrick Odhiambo

Moi University, School of Public Health

Department of Epidemiology and Medical Statistics

Signature: _____

Date: [_____]

ABSTRACT

Background: With over 38 million people living with HIV worldwide, the virus continues to be a serious public health challenge. Kenya and other countries continue to carry the greatest burden of HIV, with almost 67% of incidences. Homa Bay County has an HIV prevalence of 19.6% and recorded 5,643 new HIV infections in 2022. Ndhiwa sub-County reported 892 new cases, the highest among all sub-counties in the county.

Objectives: To determine what percentage of newly diagnosed HIV-positive people receiving treatment informed their sexual partners through assisted partner notification services (aPNS), determine the preferred method of referral and describe the factors that influence the uptake of aPNS.

Methods: A cross-sectional study was conducted among newly diagnosed HIV clients enrolled in HIV care and treatment services in Ndhiwa Sub-County. Using systematic sampling, a total of 254 participants were selected from the sampled health facilities. Data was collected through semi-structured questionnaires. The analysis of continuous variables was done using measures of central tendency and dispersion, whereas categorical variables were presented using frequencies and percentages. Associations between independent variables and the uptake of aPNS were assessed using crude odds ratios (cOR) with 95% confidence intervals (CI). Variables with a p -value <0.05 were considered statistically significant.

Results: Of the 254 participants in the study, 63.4% were female. The proportion of index clients who disclosed their HIV status to their sexual partners was 78.7%. The provider referral method was preferred by the majority of the study participants, accounting for 43.7%. Uptake of aPNS was independently associated with the testing location of the index client (aOR=3.8; 95% CI: 1.46-9.83, p -value=0.006), knowledge of the HIV status of their sexual partner(s) (aOR =5.2; 95% CI: 2.09–11.43; p -value=0.002) and absence of intimate partner violence (aOR=15.0; 95% CI: 4.92-45.80, p -value <0.001).

Conclusion: There was a high uptake of aPNS among newly diagnosed HIV-positive clients. The provider referral was the most preferred method. Testing location, knowledge of partner's HIV status, and absence of intimate partner violence increased the uptake of aPNS.

Recommendation: Provider referral should be promoted as the preferred option among index clients. The HIV care settings should incorporate routine IPV screening, counseling, and support services to ensure client safety and facilitate safe disclosure. Longitudinal studies should be recommended to monitor trends in aPNS uptake and associated factors over time.

TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	vii
LIST OF FIGURES	viii
ACRONYMS/ABBREVIATIONS.....	ix
DEFINITION OF TERMS	x
DEDICATION.....	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	7
1.3 Study justifications.....	8
1.4 Research questions	9
1.5 Objectives	10
1.5.1 Broad Objective.....	10
1.5.2 Specific objectives.....	10
CHAPTER TWO	11
LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Approaches of assisted partner notification services	13
2.2.1 Assisted partner notification services.....	13
2.2.2 Contract referral.....	13
2.2.3 Provider referral.....	13
2.2.4 Dual referral.....	13
2.2.5 Passive referral	14
2.3 Key Populations (KPs).....	14
2.4 Implementation of aPNS	14
2.5 Preferred methods of assisted partner notification services	16
2.6 Socio-demographic factors influencing the uptake of assisted partner notification services.....	17
2.7 Barriers to assisted HIV partner notification.....	18
2.8 Connection to HIV care and therapy.....	20
2.9 Benefits of HIV disclosure	21

2.10 Conceptual framework	22
2.10.1 Independent variables	23
2.10.1.1 Socio-demographic characteristics	23
2.10.1.2 HIV related characteristics	23
2.10.2 Intervening variables	23
2.10.2.1 Barriers to aPNS	23
2.10.2.2 Preferred methods aPNS	23
2.10.3 Dependent variable (Outcome Variable)	24
CHAPTER THREE	25
METHODOLOGY	25
3.1 Study site	25
3.2 Study population	26
3.3 Exclusion criteria.....	26
3.4 Study design	27
3.5 Sample size determination	27
3.6 Sampling technique	28
3.7 Study variables	30
3.7.1 Independent variables	30
3.7.2 Dependent variable	31
3.8 Data management.....	31
3.8.1 Data collection.....	31
3.8.2 Pilot study	33
3.9 Data analysis and processing.....	33
3.10 Ethical considerations.	34
3.11 Dissemination of findings	35
CHAPTER FOUR.....	36
RESULTS	36
4.1 Socio-demographic characteristics of the study participants.....	36
4.2 Proportion of newly diagnosed HIV-positive adults who notified their sexual partners through assisted partner notification services	38
4.3 The preferred method(s) of assisted partner notification services among newly diagnosed HIV-positive adult patients on care in Ndhiwa sub-County.....	41
4.4 Factors associated with the uptake of assisted partner notification services among newly diagnosed HIV-positive adults on care HIV in Ndhiwa sub-County.....	45
4.4.1 Bivariate analysis	45
4.4.2 Multivariate logistic regression analysis	49

CHAPTER FIVE	51
5.0 DISCUSSION	51
5.1 Introduction	51
5.2 Socio-demographic characteristics of the study participants	52
5.3 Proportion of index clients on care who notified their sexual partners through assisted partner notification services	53
5.4 Preferred methods of referral for assisted partner notification services among the study participants	58
5.5 Factors associated with the uptake of aPNS among newly diagnosed HIV-positive adults on Care HIV in Ndhiwa sub-County	59
5.6 Obstacles that discourage index clients from participating in aPNS	65
5.7 Benefits of HIV disclosure	68
5.8 Study limitations	69
CHAPTER SIX	71
6.0 Conclusions and Recommendations	71
6.1 Conclusions	71
6.2 Recommendations	71
REFERENCES	73
APPENDICES	83
Appendix I: Consent form (English version)	83
Appendix II: Fomu ya idhini (Swahili version)	85
Appendix III: Questionnaire (English version)	87
Appendix IV: Questionnaire (Swahili version)	92
Appendix V: MOH 362 (HTS lab & Linkage Register)	98
Appendix VI: IREC Formal Approval Letter	99
Appendix VII: NACOSTI Research permit	100
Appendix VIII: Authorization letter from Homa Bay County	101
Appendix IX: Letter of Acceptance from Ndhiwa Sub-County	102

LIST OF TABLES

Table 1 Socio-demographic characteristics of the study participants	36
Table 2: Proportion of index clients who notified their sexual partners through aPNS ...	39
Table 3 Preferred methods of among the index clients per socio-demographic characteristics.....	42
Table 4 Bivariate analysis of the socio-demographic factors associated with the uptake of assisted partner notification services	45
Table 5 Multivariate analysis of the factors associated the uptake of assisted partner notification services	49

LIST OF FIGURES

Figure 1 conceptual framework	22
Figure 2 A Map of Kenya showing Homa Bay County and its respective sub-counties as at 31 st December 2022	26
Figure 3 showing sampling methodology at Ndhiwa sub-County, 2023.....	30
Figure 4 Proportion of Index Clients who notified their sexual partners through aPNS..	38
Figure 5: Preferred methods of referral for assisted partner notification services among the index clients (n=200)	41

ACRONYMS/ABBREVIATIONS

AIDS	Acquired Immuno-Deficiency Syndrome
aPNS	Assisted Partner Notification Services
ART	Antiretroviral Therapy/Treatment
CASCO	County AIDS & STI Coordinator
CCC	Comprehensive Care Centre
CI	Confidence Interval
EMR	Electronic medical records
FELTP	Field Epidemiology and Laboratory Training Program
FSW	Female Sex Workers
HCWs	Health Care Workers
HIV	Human Immunodeficiency Virus
HTS	HIV Testing Services
IPV	Intimate Partner Violence
KASF	Kenya Aids Strategic Framework
KENPHIA	Kenya Population-based HIV Impact Assessment
KNBS	Kenya National Bureau of Statistic
KP	Key Population
MOH	Ministry of Health
MSM	Men Who Have Sex with Men
NASCOP	National AIDS and STIs Control Programme
PEP	Post-Exposure Prophylaxis
PLHIV	People Living with HIV
PrEP	Pre-Exposure Prophylaxis
PWIDS	People who inject drugs
STIs	Sexually Transmitted Infections
TG	Transgender
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

DEFINITION OF TERMS

Assisted Partner Notification Services:- Trained HTS providers counsel HIV-positive index (newly diagnosed) individuals and encourage them to notify their sexual contacts that they could have been exposed to HIV infection.

Causal sexual relationship: - Relationships that are not committed to one another yet involve sexual encounters. These interactions frequently involve individuals with no thought of a romantic engagement in the future.

Confidentiality: - Not disclosing someone's information to anyone outside the research team unless otherwise agreed upon

Consent: - Giving permission for something to happen

Contract referral:- Contract referral involves individuals newly diagnosed with HIV signing an agreement with a skilled HTS provider. They consent to independently reveal diagnoses to their intimate contacts. If the partner(s) fails to access HTS within the specified timeframe, he/she will get in touch with them directly to offer voluntary HIV testing services.

Counselling: - Counselling is an interaction between the HTS provider and the client intended to help the client make informed decisions about HIV/AIDS and get the most benefit from the HIV testing service package.

Dual referral:- In this method, an HIV-positive person is accompanied and supported by a trained HTS provider when they tell their partners about their status and possible exposure, while also offering voluntary testing to the partners

Incidences: - The occurrence of new cases of an illness, accident, or other medical condition during a predetermined time period.

HIV disclosure: -It is when a person who is HIV-positive reveals his/her status to another individual.

HIV testing services (HTS):

HIV testing services (HTS) encompasses a comprehensive package of services that people get in addition to HIV testing, including testing itself and linkage to care and treatment. It also involves working with laboratory services to ensure accurate results and quality assurance.

Index client: - New or previously diagnosed HIV infected/positive client.

Key Populations: - Groups of individuals with a higher risk of getting HIV because of certain risky behaviors.

Newly diagnosed- In the context of this research study, it means individuals recently confirmed to have acquired new HIV infections within the period from January 2022 to December 2022.

Partner Notification: - Involves informing sexual or needle-sharing partners about one's positive HIV status.

Passive partner notification services:- These are services that encourage clients who are HIV-positive to inform their sexual partner(s) about their HIV status and request that they also get tested for HIV.

Patient: - A patient is someone who is ill or receiving medical treatment for an illness

Prevalence: - Population with a medical disease at a particular moment. In the context of this research study, “prevalence” refers to the proportion of HIV-positive individuals who had successfully used or taken up aPNS services at the time of the study.

Provider referral:- An approach in which with the index client's permission, a skilled HTS provider discreetly contacts the index clients' sexual partner(s) and offer them HIV testing services.

Sexual Partners: - People who engage in any form of sex with the index client, including oral, anal, or vaginal sex. These range from casual to steady committed sexual relationships.

Spousal sexual relationship: - Means sexual relationship in a marriage.

DEDICATION

I dedicate this dissertation to my family and friends, whose constant support has been my pillar of strength during this journey. Furthermore, to FELTP colleagues and faculty for their invaluable knowledge and experience, which significantly contributed to the success of this research study.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Human immunodeficiency virus (HIV) affects millions of people across the globe. Even though HIV testing services have expanded and also that antiretroviral treatment (ART) has been introduced, 38% of HIV-infected people (PLHIV) globally do not know their HIV status hence not receiving treatment (Branson et al., 2013; Trickey et al., 2017). Majority of PLHIV receive their first HIV medication at advanced stages of the illness (Kigozi et al., 2019; Siedner et al., 2015). Nearly 770,000 people lose their lives to AIDS-related illnesses each year (UNAIDS, 2019). Human Immunodeficiency Virus (HIV) remains a major global burden. Globally, an estimated 38.4 million people were living with HIV, with approximately 6 million unaware of their status. Sub-Saharan Africa remained the most affected region, accounting for about 670,000 new HIV infections (UNAIDS, 2022b). Despite significant progress in HIV testing and expanded antiretroviral therapy (ART) coverage globally, an estimated 38% of people living with HIV (PLHIV) remain undiagnosed, and approximately 630,000 AIDS-related deaths continue to occur each year (UNAIDS, 2022a). To address these gaps, the UNAIDS 95–95–95 strategy was launched in 2014, aiming to end the HIV epidemic by 2030. The goal is to ensure that people living with HIV (PLHIV) are diagnosed early, receive sustained treatment, and achieve viral suppression. The targets are as follows: First 95 means:- 95% of all PLHIV to know their HIV status, second 95 means: 95% of those diagnosed are on antiretroviral therapy (ART) and the third 95 means: 95% of those on ART are virally suppressed (UNAIDS, 2022b). Those who do not know their HIV status continue to be a significant factor in delaying the start of treatment and increase in HIV transmission (UNAIDS, 2019). Fulfilling the 95-95-95 targets of the Joint United

Nations Program on HIV/AIDS (UNAIDS) by 2030 remains one of the world's most significant challenges (Frescura et al., 2022). Globally, 38.4 million people were living with HIV in 2021, with 1.5 million new cases of the infection and approximately 6 million persons uninformed of their HIV status (UNAIDS, 2022a). According to UNAIDS estimates, around 5.9 million people were unaware of their HIV-positive status in 2020, and an estimated 26 million PLHIV worldwide were receiving ART (UNAIDS, 2021). The goal of UNAIDS for 2030 is to surpass 90-90-90 and reach 95-95-95 as part of ongoing efforts to "fast track" the end of the disease (Declaration, 2014).

Sub-Saharan Africa was responsible for 670,000 new HIV infections worldwide (Wang et al., 2016). Most HIV patients living in the world are from South Africa (Closson et al., 2018). Furthermore, South Africa has the greatest prevalence of new HIV cases (33%) (UNAIDS, 2018), a place where the global HIV pandemic burden is highest (Govender et al., 2018). The incidence rate of HIV infection were higher in South Africa among females aged 15 years and above than in males of the same age group (Simbayi et al., 2019). South Africa achieved some progress toward the 95-95-95 targets, with the third 95 showing the most improvement (Grobler et al., 2017; Huerga et al., 2018). With a prevalence of 13.5%, the HIV epidemic is widespread in Mozambique (Closson et al., 2018). Results from Nigeria's 2019 National HIV Survey, 1.9 million people were living with HIV in 2018 (Adeyinka et al., 2019). According to the population-based household survey, the detected PLHIV in relation to the UNAIDS 90-90-90 objectives were 47-96-81. The first 90 for Nigeria was one of the lowest in Africa (Marsh et al., 2019). The bulk of new PLHIV cases in Nigeria were found through HIV testing at the health facilities. This plan stood inadequate due

to poor utilization of healthcare facilities by the people of Nigeria especially those who resided in rural areas (Onyeonoro et al., 2016).

Kenya carries a high HIV burden with a prevalence rate of 3.7%. Approximately 1.4 million people were living with HIV in 2022, with an estimated 22,154 new HIV infections and 18,473 AIDS related deaths. ("Kenya HIV estimates," 2023). Despite the HIV program's gains (HIV therapy and viral suppression), the estimated number of new HIV infections grew from 32,027 in 2020 to 34,540 in 2021 (WAD, 2022). Kenya was rated third among the countries in sub-Saharan Africa in terms of increased cases of HIV infections (UNAIDS, 2017). Homa Bay County is among the thirteen priority counties with a high HIV prevalence of 19.6% (KASF-II, 2020/21-2024/25; KENPHIA, 2018). Some bodily fluids from infected people that can be shared to transfer HIV include blood, breast milk, semen, and vaginal secretions. Additionally, a mother's pregnancy and delivery could cause her unborn child to contract HIV.

While HIV infection remains incurable, advancements in medical treatments, particularly antiretroviral therapy (ART), have significantly improved the prognosis for people living with HIV. With access to ART and proper medical care, individuals living with HIV can now effectively manage the virus and maintain long and healthy lives.

The most crucial step in the HIV care continuum is HIV testing (Kapadia, 2020), and the initial UNAIDS objectives, which state that 95% of people living with HIV will know their HIV status by 2030 (UNAIDS, 2021). According to ("Kenya HIV estimates," 2023), 90.5% of PLHIV were aware of their HIV status, highlighting the need to reach the undiagnosed people. The high number of undiagnosed PLHIV

continues to be a significant factor delaying the start of treatment and increasing HIV transmission (UNAIDS, 2019).

New strategies are essential to close the HIV testing gap and accelerate progress toward the first 95 target. Key interventions include same-day ART initiation, HIV recent infection surveillance, and enhanced partner notification through index client testing (NASCOP, 2022; WHO, 2022).

Assisted Partner Notification Services (aPNS) is a targeted strategy to identify sexual partners/drug injecting partners of HIV-positive individuals. It involves voluntary disclosure and support by health providers to reach exposed partners. It aims to identify and test sexual partners of people diagnosed with HIV. World Health Organization (WHO) recommends aPNS as a high-yield case-finding approach.

Kenya adopted aPNS in its HIV testing strategy to enhance early diagnosis and linkage to care. Assisted Partner Notification services contributes directly to the first 95 by improving HIV case identification (WHO, 2016c). Many people who were knowledgeable about their positive HIV status choose not to disclose to their intimate partners (Kegeles et al., 2015; Levy & Fox, 2014; Perry et al., 2016; Perry et al., 2015).

As part of a focused public health strategy known as aPNS, trained HTS providers help the index clients to disclose their HIV-positive status to their sexual contacts, so that they may get tested and get connected to care (Dalal et al., 2017a; WHO, 2016c). WHO recommended aPNS as a regular component in the HIV care package (WHO, 2016a). Since then, aPNS remained applied in several backgrounds (Kamanga et al., 2015; Nichols et al., 2015; Rutstein et al., 2014; Sharma et al., 2018) and has shown to boost HIV testing demand and results (Brown et al., 2017; Buhikire et al., 2018;

Cherutich et al., 2017; Dalal et al., 2017a; Henley et al., 2013; Myers et al., 2016; Plotkin et al., 2018; Rutstein et al., 2014).

An aspect of aPNS includes case finding and voluntary HIV testing of the partners of HIV-positive people. The strategy will be effective when given to the newly diagnosed HIV infected individuals (Rachel, 2016). Aided partner notification services, which also encourage spouses of HIV-positive clients to get tested for the infection, are responsible for a high percentage of new incidences being identified and connected to HIV care and treatment (Brown et al., 2017). Voluntary aPNSs have now been suggested by WHO for HIV prevention and treatment (WHO, 2016c). However, compared to people who have just been diagnosed, and adults who have an established HIV infection and are receiving care, uptake of assisted partner notification services is much lower (Rachel, 2016).

Accurate and accessible HIV testing is essential for people with HIV to receive treatment and to halt new infections (Cohen et al., 2016). Additionally, it has been demonstrated that knowledge of HIV status contributes to a decrease in risky behaviours like sharing needles and in consistent condom use (Cohen et al., 2016). Investigations and funding for public health measures to stop HIV transmission are still crucial in Homa Bay County, given its persistently high prevalence and new infection rates. HIV prevalence is at hyper-epidemic levels in Homa Bay, Kisumu, Siaya, and Migori counties, making them Kenya's top 4 priority counties (KASF-II, 2020/21-2024/25).

According to the National Syndemic Diseases Control Council (NSDCC), almost half of all HIV-positive people reside in Nairobi and just four counties in western Kenya: Kisumu, Siaya, Homa Bay, and Migori (NACC, 2018). Finding HIV cases and

connecting them with care are essential for the prevention of HIV transmissions (Wamuti et al., 2015). The advantages to one's own health of an earlier HIV diagnosis are considerable. A patient can begin receiving HIV care and anti-retroviral therapy as soon as they are diagnosed (Dalal et al., 2017a). Individuals' future health gains significantly from being diagnosed earlier than they otherwise would have been. The timing of a person's diagnosis is still obviously correlated with their life expectancy, with late and extremely late diagnoses being substantially associated with greater rates of morbidity and mortality (Davis et al., 2013). In addition to saving lives, early detection also reduces costs. Additionally, the public health advantages of earlier diagnosis show that most individuals significantly reduce risky sexual behaviours after being diagnosed (Cohen et al., 2016).

Effective HIV therapy that results in a viral load that cannot be detected can greatly lower the risk of transmission, according to a recent study on treatment as prevention. Therefore, HIV partner notification is crucial as a preventative measure and in efforts to lower transmissions. HIV partner notification can thus significantly lower the rate of undiagnosed HIV and subsequent transmission by disrupting the intricate sexual networks through which HIV is frequently transmitted (Huerga et al., 2017). An evaluation of the epidemic's typology in Kenya classified it as Concentrated, Generalizing, and Mixed. Homa Bay County's high HIV prevalence of over 15.8% led to it being classified as generalizing (WAD, 2022). It is estimated that by the end of 2021, 6.04% of PLHIV did not know their HIV status ((UNAIDS, 2021). New strategies that increase the effectiveness and coverage of HIV testing are required to fill this knowledge gap regarding HIV status and to meet UNAIDS testing and treatment targets by 2030.

1.2 Problem Statement

Over the past decade, Kenya has made significant strides in expanding HIV treatment services. The number of people diagnosed with HIV and receiving life-saving antiretroviral therapy increased from 490,437 in 2012 to 1,122,334 by the end of 2021. Despite these and other successes in the HIV program, the estimated number of new HIV infections increased by more than 2000 cases from 32,027 in 2020 to 34,540 in 2021 (WAD, 2022). Homa Bay County recorded 5643 new HIV infections with 108,313 PLHIV on HIV care, with Ndhiwa sub-County recording a high at 892 new HIV infections (KHIS, 2022). With a prevalence of 19.6%, Homa Bay County has been identified as having Kenya's highest rate of HIV/AIDS (KENPHIA, 2018). To strengthen HIV case identification and early linkage to care, Kenya adopted Assisted Partner Notification Services (aPNS) as part of its index testing approach. Assisted Partner Notification services (aPNS) involves offering support to individuals newly diagnosed with HIV to notify their sexual partners, who are then encouraged to get tested. It is a proven, high-yield case-finding strategy and a critical component of achieving the first 95 in the UNAIDS 95-95-95 targets. Despite Kenya's introduction of assisted partner notification services for index testing services, (Cherutich et al., 2017), the majority of HIV incidences occurred in Homa Bay County (KENPHIA, 2018; KHIS, 2022). When implemented effectively, aPNS has the potential to identify undiagnosed individuals living with HIV, facilitate early initiation of ART, and reduce onward HIV transmission. Studies have shown that partner notification increases the likelihood of HIV testing among partners and significantly contributes to identifying new cases (WHO, 2016c). However, when uptake is low, opportunities to break transmission chains are missed, and undiagnosed individuals may continue to unknowingly transmit the virus, perpetuating the epidemic. Despite its proven benefits

and national rollout, the uptake of aPNS in high-burden settings like Homa Bay remains sub-optimal. This raises concerns about the barriers that may be preventing effective implementation and utilization. There is limited understanding of the context-specific socio-cultural, economic, and structural factors that influence aPNS uptake in such areas. There is a gap regarding the factors that influence the uptake of aPNS in rural, high-prevalence settings like Ndhiwa. By exploring these dimensions, this study seeks to generate evidence that can guide context-sensitive strategies to improve aPNS uptake, inform policy, and ultimately reduce new infections in areas hardest hit by the epidemic. However, the specific barriers and facilitators affecting aPNS uptake remain largely unexplored, hindering the development of targeted interventions to enhance utilization. The uptake of aPNS remains sub-optimal, yet it is a high-yield case-finding strategy and limited data exist on factors influencing its uptake.

1.3 Study justifications

Research on factors influencing the uptake of aPNS in Ndhiwa sub-County, Homa Bay County, is paramount for several compelling reasons. Ndhiwa sub-County was found to have a high burden of HIV incidences compared to other sub-counties within Homa Bay County. Given aPNS's potential to mitigate HIV transmission, investigating its uptake in Ndhiwa is crucial for developing tailored approaches to reduce HIV transmission and strengthen public health outcomes in the region. By delving into aPNS uptake within this context, the study elucidates potential. Addressing these barriers is pivotal for crafting interventions that overcome hurdles in service delivery and effectively reach under served populations. Additionally, conducting research in Ndhiwa sub-County fosters community engagement and participation. This ensures that interventions align with community values and

priorities, enhancing their acceptance and sustainability. The findings from the study hold significant policy and programmatic implications. By identifying factors influencing aPNS uptake and recommending evidence-based interventions, the research contributes to the development of comprehensive HIV control strategies. These strategies can inform policymaking and programming at the local, county, and national levels, prioritizing the needs of communities in Ndhiwa sub-County and beyond. Lastly, other researchers and academics interested in this topic would use the aforementioned findings as a point of reference (assisted partner notification services).

1.4 Research questions

1. What proportion of newly diagnosed HIV-positive adults on care notified their sexual partners through assisted partner notification services in Ndhiwa sub-County?
2. What are the preferred methods of assisted partner notification services among newly diagnosed HIV-positive adults on care in Ndhiwa sub-County?
3. What factors are associated with the uptake of assisted partner notification services among newly diagnosed HIV-positive adults on care in Ndhiwa sub-County?

1.5 Objectives

1.5.1 Broad Objective

To determine the factors associated with the uptake of assisted Partner Notification Services and the preferred methods of referral among newly diagnosed HIV-positive adults on care in Ndhiwa sub-County.

1.5.2 Specific objectives

1. To determine the proportion of newly diagnosed HIV-positive adults on care in Ndhiwa sub-County who notified their sexual partners through assisted partner notification services
2. To determine the preferred method(s) of assisted partner notification services among newly diagnosed HIV-positive adult patients on care in Ndhiwa sub-County.
3. To determine factors associated with the uptake of assisted partner notification services among newly diagnosed HIV-positive adults on care HIV in Ndhiwa sub-County.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The most crucial step in the HIV care continuum is HIV testing (Kapadia, 2020) and the initial UNAIDS targets, which state that 95% of people living with HIV will know their HIV status by 2030 (UNAIDS, 2021). According to current estimates, 5.9 million HIV-positive individuals worldwide remain undiagnosed. Since the beginning of the epidemic, there has been about 40.1 million mortality due to AIDS (UNAIDS, 2021).

Africa contributed to over two-thirds of all newly diagnosed HIV infections (Wang et al., 2016). Kenya carries a high HIV burden with approximately 1.4 million people living with HIV. According to estimates, 33,000 people contracted HIV for the first time in 2021, and 19,000 people died from AIDS in the same year (UNAIDS, 2021).

Homa Bay County is one of the thirteen priority counties with a high HIV prevalence rate of 19.6% ("Kenya HIV estimates," 2023). It is estimated that at the end of 2021, 6.04% of PLHIV were not aware of their HIV-positive status (UNAIDS, 2021). To close this knowledge gap regarding HIV status and to identify 95% of those who are HIV infected by 2030, new methods that improve the effectiveness of testing were required.

The HIV partner notification is one such tactic that could help more persons with undiagnosed HIV get identified (Dalal et al., 2017b). By giving PLHIV a safe and effective means of informing their sexual partner(s) of their HIV status, aPNS aims to reduce transmission (Sharma et al., 2018). Studies have shown that assisted partner notification services are successful because they improve HIV testing and care

connections (Masyuko et al., 2020). Understanding the factors associated with the uptake of assisted partner notification services will therefore offer information on an effective approach. Healthcare professionals inquire about clients' sexual partners, and with the client's permission, offer these partners HIV testing services (WHO, 2016c).

HIV testing has to be accurate and accessible to guide the PLHIV toward treatment and prevent further transmissions (Cohen et al., 2016). Studies have demonstrated awareness of one's HIV status leads to a reduction in risky behaviours like sharing syringes and inconsistent condom use (Cohen et al., 2016; Ortblad et al., 2020; Pavlopoulou, 2020; Rosenberg, 2017). Early detection is essential for effective HIV treatment (May, 2017). It enables early ART commencement and reduces the transmission of HIV (Cohen et al., 2016), the development of AIDS, and its associated mortality (Anglemyer et al., 2014).

Being unaware of one's HIV status has remained connected to risky sexual practices (Huerga et al., 2017). Sharma's research on the findings of an ongoing implementation study revealed that females accepted assisted partner notification services (Sharma et al., 2021).

Furthermore, few researchers in the Kenyan studies looked at the qualitative aspect of assessing cost-effectiveness in reducing HIV prevalence and expanding partner notification assistance services in western Kenya (Sharma et al., 2018).

2.2 Approaches of assisted partner notification services

2.2.1 Assisted partner notification services

Refers to the method that a qualified HTS provider uses to help index clients in informing their intimate partners about their potential exposure to HIV (WHO, 2016c)

2.2.2 Contract referral

Contract referral involves individuals newly diagnosed with HIV coming into an agreement with a skilled HTS provider. They consent to independently reveal their HIV status to intimate contacts. Should the partner(s) fail to contact the HTS provider within the specified timeframe, he/she will get in touch with them directly to offer HIV testing services (WHO, 2016c).

The names and location information of each exposed partner is obtained by the HTS provider, who allows the index patient to notify partners first. Should the partners not appear for examination within a reasonable period (eg 7–10 days), the HTS provider reserves the right (contracts) to notify the named partner(s) anonymously without revealing the index client.

2.2.3 Provider referral

A strategy in which, with the index client's permission, a trained HTS provider discreetly contacts their sexual contacts and offers them HIV testing services (WHO, 2016c). By using provider referral, the HTS provider (and not the index patient) is able to alert the partner(s) as quickly as feasible in an anonymous manner.

2.2.4 Dual referral

In this method, an HIV-positive person is accompanied and supported by a trained HTS provider when they inform their partners about their HIV status and possible exposure, while also offering testing services to the partner (WHO, 2016c).

2.2.5 Passive referral

Involves providing information about available HIV testing services to index clients and encouraging them to tell their sexual partner(s) about their positive HIV status (WHO, 2016c).

Passive referral has been shown to be an inefficient way to ensure partner notification (Brewer, 2015).

2.3 Key Populations (KPs)

A group with a higher risk of contracting HIV because of certain risky behaviours. Men who have sex with men (MSM), female sex workers (FSW), people who inject drugs (PWIDS) and transgender (TG) are among these groups in Kenya (HTS, 2022).

According to a study on aPNS implementation among the KPs, guaranteeing confidentiality and anonymity for clients who are HIV positive could be necessary to make more intense efforts to find partners (Dalal et al., 2017a).

Studies on the general public and key populations' supported partner notification services led to increased acceptance of HTS among the MSM and injecting drug users (Sharma et al., 2018). Another study indicated that MSM and TG preferred utilization of aPNS as it was a crucial strategy (Segura et al., 2013).

2.4 Implementation of aPNS

Execution of aPNS revealed that they may be integrated into PLHIV and drug users (Little et al., 2019), with few reports of harm, (Dalal et al., 2017a). In sub-Saharan Africa, a study found that partner notification among STI clinic patients was possible, acceptable, and efficient (Brown et al., 2017).

Regardless of age or past testing history, a study in Kenya found that females highly approved assisted partner notification services (Sharma et al., 2021). Another study on aPNS implementation in a few Kenyan health facilities found that it was a viable and successful method for identifying more HIV infected cases and educating people about exposed sexual partners in low-resource nations (Kariuki et al., 2020).

In Vietnam, a study on the viability and efficacy of using assisted partner notification services revealed that HIV testing services were practical and efficient (Nguyen et al., 2019). In Central Asia, assisted partner notification services were palatable to high-risk populations and could be easily incorporated into an HIV program that was centred on PLHIV and drug injectors (Little et al., 2019).

A study in the US and Europe demonstrated that providing partner services was both gainful and safe for identifying HIV cases and connecting them to HIV care (Hogben et al., 2017; Varghese et al., 2016). Although remaining voluntarily, assisted partner notification services have been incorporated into Kenya's regular HTS program. Services for assisted partner notification are secure and boost HIV case-finding and testing. Population-level initiatives might improve accessibility and the start of antiretroviral treatment, which would significantly reduce HIV transmission (Kariuki et al., 2020). In Mozambique, assisted partner notification services was effectively applied to newly diagnosed PLHIV patients. Through aPNS, a significant amount of serodiscordant relationships and HIV-positive individuals were discovered (Myers et al., 2016). According to a Tanzanian study on acceptability, practicality, and effectiveness, aPNS could considerably raise the percentage of PLHIV who were previously undiagnosed and were connected to care (Kahabuka et al., 2017). In

Kenya, aPNS programs were found to be a high-yield strategy that was effective in allocating resources to the vulnerable population (Cherutich et al., 2017).

2.5 Preferred methods of assisted partner notification services

There are four major ways to implement aPNS: Provider referral, contract referral, dual referral, and passive approach techniques (WHO, 2016c). According to existing research, no single partner notification method is generally desired, and preferences may vary. In Indonesia, there were some discrepancies between the public, providers and PLHIV. People with HIV were most concerned about the procedure's anonymity and favoured using communications and avoided the use of HIV text messages that would mention exposure. Everyone agreed with dual referral models.

Conversations and text messages via the phone were picked because they were thought to reduce stigma and uphold confidentiality and adverse reactions (Wirawan et al., 2021). In Côte d'Ivoire, a research study concluded that passive referral was recommended for minors (Kingbo et al., 2020). A study in Malawi established that the majority preferred the passive approach (Kamanga et al., 2015). Furthermore, results from other studies indicated that the most popular strategy was passive (Kahabuka et al., 2017).

Another study on the preferred assisted partner notification services methods in Kenya found that a significant portion favoured the provider referral option. Additionally, client referrals were also among the most popular techniques. The least popular referral strategy was contract referral. However, those who had taken part in the assisted partner notification services preferred the client referral technique the most, while those who had not taken part in the assisted partner notification services favored the dual referral method (Samson et al., 2019). In Nigeria, there was very

little acceptance of assisted partner notification services among the Key Population (KPs) (Ugbena et al., 2017).

Another study in Kenya established that the most favoured method was the provider (Samson et al., 2019). Another research study on HIV case finding showed that a significant portion of partners were found via the provider method of referral (Dalal et al., 2017a). According to a Kenyan retrospective analysis, provider referral was the most favored (Kariuki et al., 2020). A study on partner elicitation (Gitige et al., 2021), indicated client referral was the most favored method.

2.6 Socio-demographic factors influencing the uptake of assisted partner notification services

An investigation into the variables affecting the uptake of aPNS in Kenya found no association between age, sex, education level, occupation, and marital status; but these factors were not statistically significant (Anangwe, 2022). This suggested that younger HIV-positive individuals had a lower likelihood of enrolling in the assisted partner notification services than older individuals.

Another study in Kenya found that participants in rural areas had a higher probability to notify about the possibility of exposure than those in urban settings (Chelogoi et al., 2021). In Ghana, a study concluded that the relationship type affected how many people used assisted partner notification services. Compared to those in other relationships, married couples who were in reasonably stable relationship had a lower partner reporting rate. In comparison to their female counterparts, married men were less likely to report. Cohabiting partners had a higher partner reporting rate (Agyarko-Poku et al., 2015).

2.7 Barriers to assisted HIV partner notification

HIV testing has to be accurate and accessible to guide the PLHIV toward treatment and prevent further transmissions (Cohen et al., 2016). Additionally, studies have demonstrated awareness of one's HIV status leads to a reduction in risky behaviours like sharing syringes and inconsistent condom use ((Ortblad et al., 2020; Pavlopoulou, 2020).

Accurate and accessible HIV testing is essential for people living with HIV to receive treatment and to halt new infections (Rosenberg, 2017). An Indonesian study found that recently diagnosed patients were more willing to disclose their HIV status (Rahmalia et al., 2022).

The instability of the sexual partnership was one of the key obstacles to the disclosure. Furthermore, partner testing or continuous condom use was not guaranteed by status disclosure. After a divorce or husband's passing, some women with HIV decided to be single out of fear of being rejected, worry about HIV transmission, or painful former relationships. These mothers concluded that looking after their children was enough to make them happy (Rahmalia et al., 2022).

In other contexts, partner notification was shown to be hindered by worries about maintaining confidentiality and mistrust of medical personnel. Many clients voiced concern about interpersonal strife and public humiliation if confidentiality was breached. Each client's comfort level with taking part in an assisted partner notification services could vary depending on the type of relationship they had, and some clients may choose other ways to tell partners (Goyette M, 2016).

Another study revealed that shame, fear of stigma, reluctance to inform partners, hostile services, lack of secrecy, and unfriendly services were the main obstacles to

assisted partner notification services participation (Chelogoi et al., 2021). The adoption of assisted partner notification services was found to be hindered by those who experienced violence from their intimate partners (IPV) (Sharma et al., 2021).

In a study on the challenges and chances for expanding assisted aPNS in Kenya; stigma, prejudice, ignorance, perceptions of risk, relationship traits, healthcare system traits, testing location, and cultural and communication challenges were only a few of the many obstacles to assisted partner notification services. Similar to this, even though assisted partner notification services uptake among newly diagnosed clients was generally strong, those who rejected did so because they required time to digest the diagnosis, had low regard for healthcare professionals (HCWs), or misunderstood how services work (Monroe-Wise et al., 2019).

In a different study in Mexico on the creation of HIV-assisted partner notification programs adapted to the Mexican key population, the greatest obstacle to partner notification and serostatus disclosure was concern over HIV-related stigma's detrimental effects (Vermandere et al., 2021).

A qualitative study in Australia concluded that most men could not disclose due to stigma surrounding HIV, and a desire to avoid causing distress because of ideologies based on out-of-date information about HIV (Bilardi et al., 2019). Fear of desertion, fear of discrimination or rejection, were the most frequent obstacles to disclosure. Time since diagnosis and illness severity were positively related to disclosure. People were driven to reveal to partners, family, and friends due to deteriorating health status, the need for social support, lowering the stress of not doing so, and the ability to enhance HIV prevention behaviour through disclosure (WHO, 2016b).

Another study in Kenya on assisted partner notification services found that the primary obstacles to assisted partner notification services could be divided into four categories: Fear of disclosure to partners which would affect their relationship, the healthcare industry, the church, and general society were all identified as having stigma and discrimination. Participants talked about communication challenges, such as cultural ones and educational inequalities (Monroe-Wise et al., 2019). Among MSMs, the major obstruction to notification or disclosure was fear of HIV stigma, violence, rejection, fear of being blamed and people's unfavorable reactions. Several MSM participants were also concerned about their HIV-positive status being made known to the public. The MSM pointed to having casual companions as a barrier to notification at the same time. Due to the large number of partners and the hazy timing of the exposure, they would not be able to identify which partners to alert (Vermandere et al., 2021). They were also worried about coming out and informing their family about their HIV status (Malik et al., 2019).

2.8 Connection to HIV care and therapy

Finding HIV cases and connecting them to care are essential for preventing HIV transmission (Ahmed et al., 2017). A public health policy called assisted partner notification offers HIV testing to people who have had sexual contact with HIV infected individual and are at risk of getting sick (Rachel, 2016). Partner notification should be voluntary and the index client must provide consent, and it should only go to their partner(s), not anyone else (Rachel, 2016).

According to a study conducted in London assisted partner notification services were now more effective, with few reports of harm. (Dalal et al., 2017a). A study in Zimbabwe showed success in identifying targeted HIV cases as the nation worked to

reduce the HIV epidemic (Mahachi et al., 2019). The identification of young people and their prompt connection to care was made possible through a family-centred, index case discovery strategy, home-based testing, and recorded follow-up (Ahmed et al., 2017).

In Cameroon, another study concluded that aPNS was practical, and scaleable besides a high degree of case detection (Tih et al., 2019). It is feasible and efficient to incorporate assisted partner notification services in hospital settings, especially for obtaining undiagnosed HIV patients and first-time tests (Nguyen et al., 2019). Empathetic counselling and rapport-building with clients frequently helped clients accept the results and find partners. Rapport building with clients was considered to be easier when the same HTS provider assessed them (Chelogoi et al., 2021). Some patients were unwilling because they lacked faith in the HTS provider

2.9 Benefits of HIV disclosure

According to the study on improving HIV testing through case findings by (Dalal et al., 2017a), aPNS led to enhanced partner testing rates and increased identification. The HIV testing and status awareness were among the advantages of aPNS (Anangwe, 2022). Additionally, studies have demonstrated awareness of one's HIV status leads to a reduction in risky behaviours like sharing syringes and inconsistent condom use (Pavlopoulou, 2020). Prevention of HIV transmission was a benefit to aPNS, which was made easier by linkage to ART. Those who use HIV prevention techniques have a lower risk of getting the virus and transmitting it to their partners, which also helps them stay healthier overall and steer clear of opportunistic infections and illnesses linked to compromised immune systems (Dalal et al., 2017a).

Linkage to HIV care was a benefit to HIV status disclosure from a study conducted by (Dalal et al., 2017a). Another study found that higher HIV testing and its correlation with ART therapy were among the advantages of aPNS. Antiretroviral treatment (ART) is effective and lowers the viral load to undetectable levels, enhancing the immune system and general health of HIV-positive clients. Further limiting the spread of HIV in the community is the concept of Undetectable = Untransmittable (U=U), which states that people with an undetectable viral load are unable to pass HIV to sexual contacts (Kamanga et al., 2015).

2.10 Conceptual framework

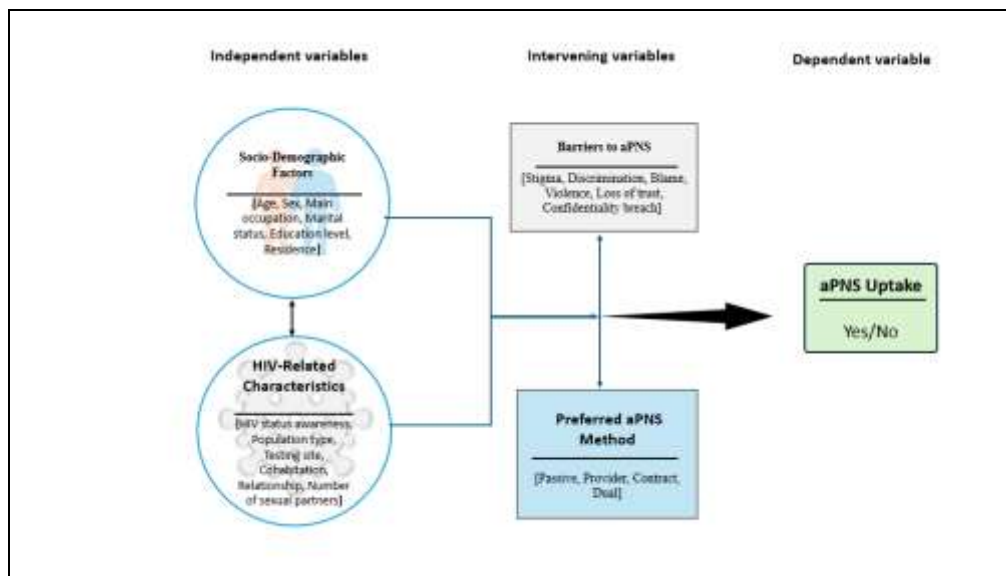


Figure 1 :Conceptual framework

Figure 1 above illustrates the conceptual framework guiding this study, outlining how multiple domains of factors are associated with the uptake of Assisted Partner Notification Services (aPNS) among HIV-positive index clients. It is structured with a logical flow from independent variables (exogenous factors) through mediators/moderators to the main outcome (aPNS uptake).

2.10.1 Independent variables

These are grouped into two main categories:

2.10.1.1 Socio-demographic characteristics

- Age
- Sex
- Main occupation
- Marital status
- Education level
- Residence

2.10.1.2 HIV related characteristics

- Awareness of partner's HIV status
- Number of sexual partners
- Relationship status with the sexual partner
- Type of population (key population, general population or priority population)
- Cohabitation status with the partner (Living together or not)

2.10.2 Intervening variables

These are grouped into two main categories:

2.10.2.1 Barriers to aPNS

- Stigma and discrimination
- Level of trust in the healthcare system,
- Fear of Intimate Partner Violence (IPV)
- Perceived confidentiality and supportiveness of health workers.

2.10.2.2 Preferred methods aPNS

- Provider referral
- Client Referral
- Contract Referral

- Dual Referral

2.10.3 Dependent variable (Outcome Variable)

- The outcome variable was uptake of Assisted Partner Notification Services (aPNS).
- This is defined as whether or not the index client consented and participated in partner notification using any of the available methods.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study site

The study was conducted in the Ndhiwa sub-County, Homa Bay County. With a population of 218,136, the Ndhiwa sub-County covers a 713.5 sq km area (KNBS, 2019). It borders Suba to the West, Mbita to the North and Homa Bay Town to the East.

Ndhiwa sub-County's economy is largely anchored in agriculture and fisheries. High rates of teenage pregnancies and HIV are fueled by gender inequity, poverty, and barriers to accessing health care services. The practice of trading fish for sex has been identified among the factors leading to high HIV cases in the Ndhiwa sub-County.

The prevalence of HIV in Homa Bay County is 19.6%, which is four times the national average of 4.9% (KENPHIA, 2018). Ndhiwa sub-County contributed high cases of new HIV infection of 892 in 2022 (KHIS, 2022).

Ndhiwa sub-County has a total of 71 health facilities, of which 37 were offering HIV services at the time of study. For this study, five facilities were purposively selected based on their high HIV client load to ensure sufficient representation of the sub-county's HIV burden.

The selection also aimed to reflect different facility levels and included one sub-county hospital, two health centres and two dispensaries, namely Ndhiwa sub-County Hospital, Got Kojowi Health Centre, Mirogi Health Centre, Otange Dispensary and Amoyo Dispensary.

These selected facilities were actively implementing assisted Partner Notification Services (aPNS). All the five facilities utilized the Kenya EMR system for HIV data reporting. Each of the facilities providing HIV services is staffed with trained HTS

providers, certified by NASCOP, and stationed at the HIV service delivery points within these facilities to ensure the provision of quality HIV testing services.

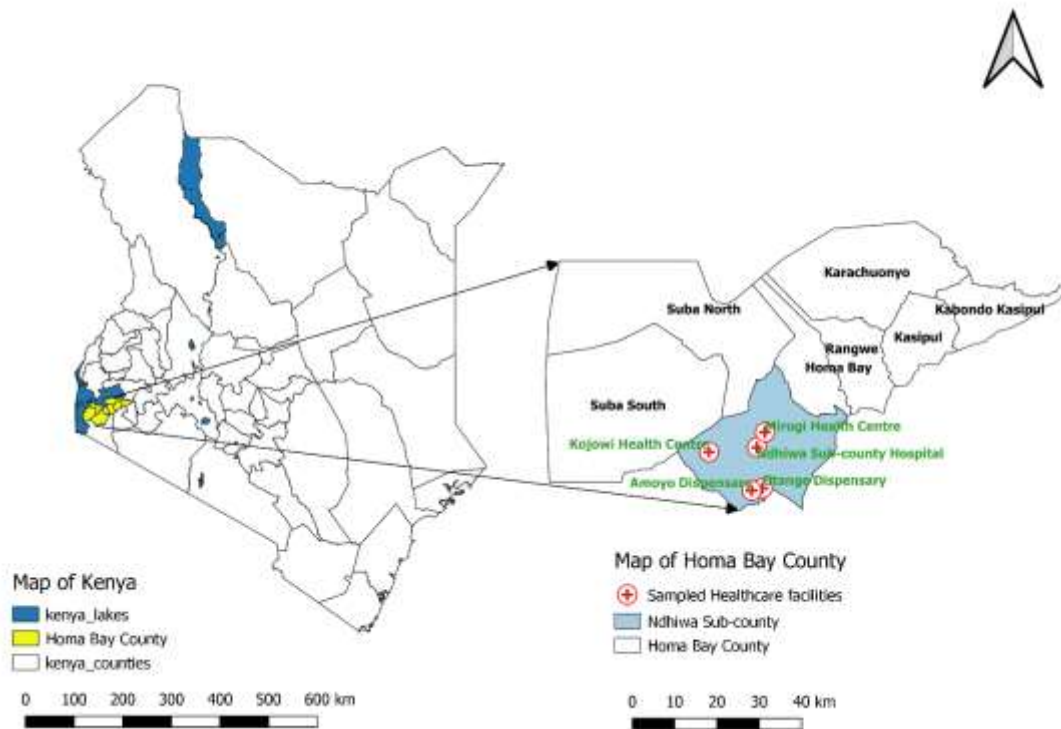


Figure 2: A Map of Kenya showing Homa Bay County and its respective sub-counties as at 31st December 2022

3.2 Study population

HIV-positive adults, at least 18 years or older, seeking care and treatment in the sampled health facilities in Ndhiwa sub-County, and whose HIV diagnoses was made any time from 1st January through December 2022.

Inclusion criteria

Any newly diagnosed (any time from 1st January through December 2022) adults, at least 18 years old and receiving HIV therapy in Ndhiwa sub-county.

3.3 Exclusion criteria

Those with missing variables (age, sex, date of HIV diagnoses among others), as well as non-residents of Ndhiwa sub-County during the study period were excluded.

3.4 Study design

This study used a cross-sectional design to assess the uptake of assisted partner notification services (aPNS) and associated factors among newly diagnosed HIV-positive adults. This design was appropriate because it enabled the assessment of both outcome and predictor variables simultaneously.

3.5 Sample size determination

The anticipated sample size was calculated using Cochran's formula as indicated below;

$$N_0 = \frac{Z^2 \cdot p(1-p)}{e^2}$$

The calculation was based on the following assumptions;

N= Sample size

e =Desired level of precision (0.05)

z =The standard deviation value (1.96), with a 95% CI

p = Estimated percentage of PLHIV who have revealed their HIV status (70%) (MUREI, 2018)

The sample size was determined using the following formula;

$$= \frac{1.96^2 \times 0.7(1-0.7)}{0.05^2}$$

$$= \frac{1.96^2 \times 0.7 \times 0.3}{0.05^2} = 323$$

Sample size was 323 respondents. A 10% adjustment was applied to take care of the non-respondents.

$$= 10\% \text{ of } 323 = 32$$

$$= 323 + 32$$

$$= 355 \text{ Study participants}$$

Because it was known how many people in Ndhiwa sub-County tested positive for HIV between January 2022 and December 2022, a modified version of Cochran's formula was applied to generate a representative sample size from the known population. There were 892 newly diagnosed HIV clients in Ndhiwa sub-County between January 2022 and December 2022. The following formula was used for the calculation.

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

The calculation was based on the following assumptions;

N=size of the population (892 Newly diagnosed HIV adults in Ndhiwa sub-County.

n= Sample size

$$n = \frac{355}{1 + \frac{355 - 1}{892}} = 254$$

Therefore, 254 study participants were drawn from the population of 892 in Ndhiwa sub-County.

3.6 Sampling technique

Step 1: Ndhiwa Sub-County was purposively sampled due to its high burden in terms of HIC cases.

Step 2: The total number of newly diagnosed HIV adults between January 2022 and December 2022 was obtained from Kenya Health Information System (KHIS).

Step 3: Health facilities within the sampled Ndhiwa sub-County were then clustered based on their level; i.e. sub-County, health centre and dispensary.

Step 4: Then, based on probability proportional to size (PPS) distributed proportionately, the highest number of new HIV infections was selected.

Step 5: Systematic random sampling was utilized to select participants in the sampled facilities during the data collection.

Step 6: There was a review of the records at the sampled facilities to establish the date of the next appointment. A list of the adults diagnosed with HIV in the year 2022 were obtained from MOH 362 register, (Linkage and referral register) and Kenya Electronic Medical Records (EMR). For adults whose appointment dates fell outside the study period, HTS providers contacted them by phone and requested that they come to the hospital for the interview.

Step 7: The first respondent was chosen at random, and the following sampled respondents were chosen at a predetermined period (Etikan & Bala, 2017). For instance, if total number of newly diagnosed HIV-positive adults between January 2022 to December 2022 at the sampled health facilities was R, and the respondents to selected were r (254), then the k^{th} which was the sampling interval was R/r i.e. $k^{th} = R/r$.

The sample size of 254 was determined using the formula below;

Frequency of newly diagnosed HIV adults accessing HIV care at a facility × 254

Frequency of new HIV infections in the 5 sampled facilities (326)

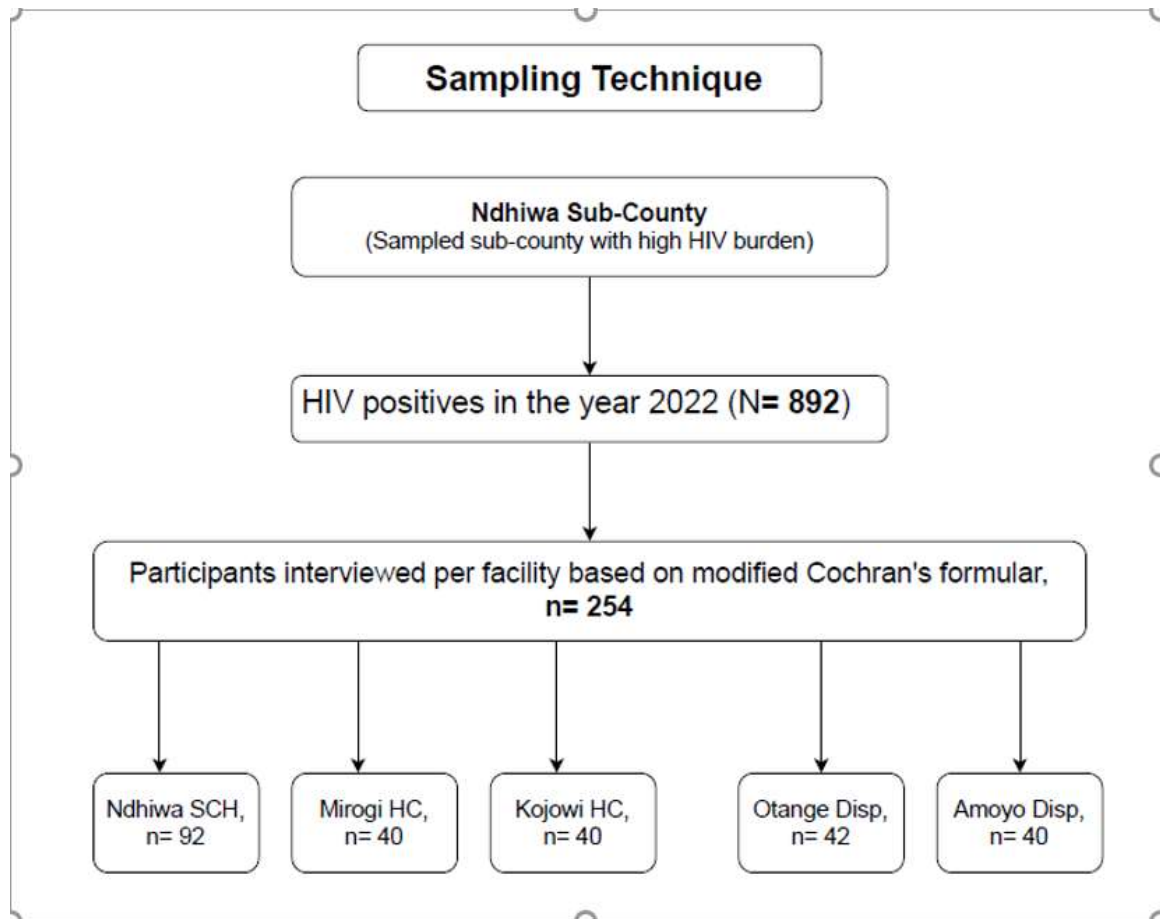


Figure 3 showing sampling technique at Ndhiwa sub-County, 2023

3.7 Study variables

3.7.1 Independent variables

Socio-demographic factors were the age, sex, relationship, main occupation, education level and residence.

HIV related characteristics were: Awareness of partner's HIV status, number of sexual partners, relationship status with the sexual partner, type of population (key population, general population or priority population) and cohabitation status with the partner (Living together or not)

Barriers to aPNS were: stigma and discrimination, level of trust in the healthcare system, fear of Intimate Partner Violence (IPV) and perceived confidentiality and supportiveness of health workers.

Preferred methods aPNS were: Provider referral, client Referral, contract Referral and dual Referral

3.7.2 Dependent variable

Dependent variables were assisted partner notification services uptake (Yes/No)

3.8 Data management

3.8.1 Data collection

To determine the percentage of newly diagnosed HIV-positive adults in Ndhiwa sub-County who had registered in HIV care through facilitated partner notification services, data collection involved a retrospective review of registers to establish new HIV incidences in the year 2022; MOH 362 (Linkage and referral register) and Kenya EMR.

The review of the register and Kenya EMR provided a guide to confirm if the next date of appointment of the client was within the study period. The same HTS provider that provides medical care at the facility occasionally calls the clients from time to time to check on their progress, reminding them of the due dates or missed appointments.

For the adults with the date of appointment not within the study period, HTS providers contacted them and requested them to come to the hospital. The HTS only contacted the adults whose appointment dates fell outside the study period to prevent leaving out eligible clients.

According to the time limitation specified by the guidelines for follow-up, PLHIV only makes a limited number of hospital visits. The clients were reimbursed for the exact amount that was utilized to get to the hospital.

Questionnaire administration was done through an in-person interview (*Appendix A*). Pre-testing of the questionnaire was done at Ndhiwa sub-County Hospital to see if respondents would execute the tasks or had the data that the questions required.

Data was collected using mobile devices and tablets by use of KoboCollect application. The questionnaire data was uploaded on the server and mobile phones on daily basis. Before using the data collection tool in the study, research assistants received training.

The HTS providers were selected from the sampled health facilities at Ndhiwa sub-County. The research assistants (HTS providers) were responsible for selecting study participants using systematic random sampling. This involved randomly selecting the first eligible participant from the list of newly diagnosed HIV-positive clients, and thereafter selecting every *k*th participant based on a predetermined sampling interval, obtaining consent and administering the study questionnaire to individuals.

The questionnaire intended to collect the socio-demographic characteristics of the participant and HIV status awareness of intimate contact. The research assistants' responsibility was to build a rapport and create a positive first impression with the study participants. The research assistants used nametags or unique identification during the study period.

A safe space, away from foot traffic and walk-in patients, was chosen for interviews to protect client information's privacy and confidentiality. This also made it possible for the interviewees to feel at ease throughout the entire procedure

3.8.2 Pilot study

To improve the validity of data collection equipment, a pilot study was conducted at Ndhiwa sub-County Hospital. A total of 25 participants were recruited for the pilot, representing approximately 10% of the intended study sample.

The piloting assessed adequacy of the interviewer in mastering data entry on the mobile KoboCollect application. This enabled the research assistants to understand the questionnaire, explore sensitive issues and eliminate unnecessary questions.

In addition, it also ensured that the interviewers interpreted the question in the same way as expected and know how to deal with all possible responses. Feedback from the pilot was used to refine the questionnaire and improve data collection procedures.

3.9 Data analysis and processing

Data were analyzed using Stata software *version 15*. Descriptive statistics were computed for all variables. Categorical variables were initially analyzed in their original form and summarized using frequencies and proportions.

For subsequent analyses addressing objectives one through three, selected categorical variables were coded into fewer meaningful categories to reduce sparsity and enhance the robustness of the bivariate and multivariate analyses. For example, education level was recoded into two groups: ‘lower’ (none and primary) and ‘higher’ (secondary and tertiary).

Associations between independent variables and the uptake of aPNS were assessed using crude odds ratios (cOR) with 95% confidence intervals (CI). Variables with a p-value <0.2 at bivariate analysis underwent multivariate logistic regression analysis. In the multivariate model, variables with a p-value ≤ 0.05 were considered statistically significant.

3.10 Ethical considerations.

Ethical approval was sought from the Moi University Institutional Research and Ethics Committee (IREC), reference number: IREC-FAN 0004421 and permission from NACOSTI; reference number: NACOSTI/P/23/27026.

The study was conducted upon administrative approval from the County Government of Homa Bay Ref: MOH/HB/CTY/RA/VOL.VI/006.

Informed consent was sought before enlisting the participant in the study. Throughout the study period, the study participants were made to understand their right to withdraw from the study and declining to participate was not to affect in any way their access to current or subsequent medical care.

The study participants were informed of the potential sources of harm associated with participation, such as psychological harm and social harm. Due to the sensitivity of the research, certain questions could cause uncomfortable feelings like shame, fear, embarrassment and stigma. However, if the study participant felt uncomfortable at some point with questions being asked, he or she had a right to withdraw or decline to answer questions or request for more time.

Possible benefits included an increased understanding of assisted partner notification services and giving information that may lead to the development of new guidelines and policies. Study participants were assured of confidentiality and privacy throughout the study period and thereafter.

No personal identification information was collected in this study. The consent forms and questionnaires were coded with unique codes to preserve the study participants' privacy. Data confidentiality was adhered to. Data was collected using KoboCollect, an application available on mobile devices. Data was collected by use of password-protected mobile phones to safeguard confidentiality and privacy.

3.11 Dissemination of findings

The study findings of this investigation were communicated to the Ndhiwa sub-County Health Management Teams (SCHMTs), NPHLS, Moi University and FELTP. The researcher will submit the findings to peer-reviewed journals targeting both local and international journals for publications.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic characteristics of the study participants

Table 1 Socio-demographic characteristics of the study participants

Variable	Frequency (N=254)	Percentage (%)
Mean age: 34 years		
Age in years		
18-20	6	2.4
21-30	93	36.6
31-40	91	35.8
41-50	52	20.5
>51	12	4.7
Sex		
Male	93	36.6
Female	161	63.4
Main Occupation		
Business	75	29.5
Casual laborer	28	11.0
Crop Farming	101	39.8
Employed	23	9.1
Students	10	3.9
Unemployed	17	6.7
Marital status		
Cohabiting	2	0.8
Divorced	9	3.5
Married mono	134	52.8
Married poly	46	18.1
Separated	13	5.1
Single	23	9.1
Widow	27	10.6
Education level		
None	7	2.8
Primary	157	61.8
Secondary	83	32.6
Tertiary	7	2.8
Residence		
Rural	230	90.6
Urban	24	9.4
Population type		
Boda Boda rider	14	5.5
Female sex workers	12	4.7
Fish Folks	2	0.8
General Population	224	88.2
Truck Drivers	2	0.8
Tested from		
Inpatient department	3	1.2
MCH/Maternity	26	10.2
Outpatient Department	87	34.3
Outreach	14	5.5
PNS	124	48.8
Number of sexual partners		
1	65	25.6
2	124	48.8
3	51	20.1
4	10	3.9
5	4	1.6

Partner relationship		
Casual	55	21.7
Regular	33	13.0
Spouse	166	65.3
Live together		
No	86	33.9
Yes	168	66.1
HIV status awareness		
No	79	31.1
Yes	175	68.9

***Note:** Variables in this table are presented as originally collected during data collection, without recoding. Recoding was applied in subsequent analyses (from Table 2 onward) to enhance clarity and enable statistical comparisons*

Table I above presents the socio-demographic characteristics of the index clients who participated in the study (N=254). The mean age of the study participants was 34 years with the majority aged between 21–30 years (36.6%). Females accounted for the majority of the study participants (63.4%)

Regarding occupation, a large proportion were crop farmers (39.8%). Over half of the participants were married in a monogamous relationship (54.8%), while cohabiting individuals accounted for the smallest proportion (0.8%).

In relation to education level more than half of the index clients had attained primary level of education (61.8%), and majority largely resided in the rural areas (90.6%).

With respect to population type, most participants belonged to the general population (88.2%), while a smaller fraction represented key or priority populations.

In terms of HIV testing location, nearly half of the index clients were tested during assisted partner notification services (aPNS) (48.8%), while testing in hospital inpatient settings was least common (1.2%).

With regard to the number of sexual partners, nearly half of the index clients (48%) reported having two sexual partners and over half (65.3%) were in a spousal relationship.

Most index clients (66.1%) were living with their sexual partners, and a large proportion (68.9%) were aware of their partners' HIV status.

4.2 Proportion of newly diagnosed HIV-positive adults who notified their sexual partners through assisted partner notification services

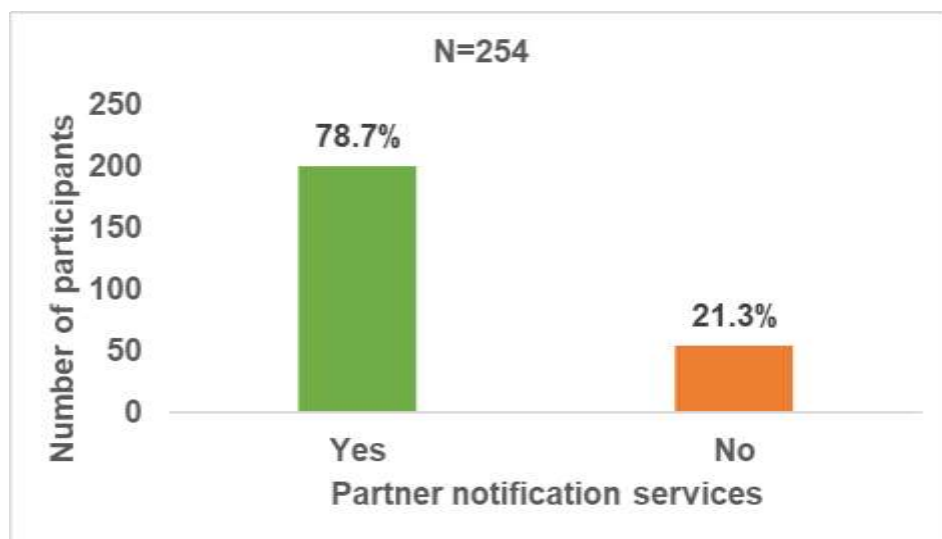


Figure 4 :Proportion of Index Clients who notified their sexual partners through aPNS

Among the 254 index clients, 200 (78.7%) reported having notified their sexual partners of their HIV status, as depicted in the bar graph above. The remaining 21.3% did not notify their partners through aPNS. The variations in frequencies and proportions were summarized as illustrated in Table 2 below.

Table 2: Proportion of index clients who notified their sexual partners through aPNS

Variables	Partner notification (N=254)	
	Yes (%)	No (%)
Age (years)		
18-20	3 (50.0)	3 (50.0)
21-30	59 (63.4)	34 (35.6)
31-40	79 (86.8)	12 (13.2)
41-50	49 (94.2)	3 (5.8)
>51 years	10 (83.3)	2 (16.7)
Sex		
Male	82 (88.2)	11 (11.8)
Female	118 (73.3)	43 (26.7)
Main Occupation		
Employed	186 (81.9)	41 (18.1)
Unemployed	14 (51.8)	13 (48.2)
Marital status		
Married	156 (85.7)	26 (14.3)
Unmarried	44 (61.1)	28 (38.9)
Education level		
Lower	131 (79.9)	33 (20.1)
Higher	69 (76.7)	21 (23.3)
Residence		
Rural	183 (79.6)	47 (20.4)
Urban	17 (70.8)	7 (29.2)
Population type		
Key population	4 (33.3)	8 (66.7)
General pop	196 (81.0)	46 (19.0)
Tested from		
Hospital	101 (87.1)	15 (12.9)
PNS/Outreach	99 (71.7)	39 (28.3)
Number of sexual partners		
<3	158 (83.6)	31 (16.4)
≥3	42 (64.6)	23 (38.4)
Partner relationship		
Casual	33 (60.0)	22 (40.0)
Regular	25 (75.8)	8 (24.2)
Spouse	142 (85.5)	24 (14.5)
Live together		
No	50 (50.1)	36 (41.9)
Yes	150 (89.3)	18 (10.7)
HIV status awareness		
No	46 (58.2)	33 (41.8)
Yes	154 (88.0)	21 (12.0)

A total of 254 index clients were included in the analysis. Overall, 200 (78.7%) index clients notified at least one sexual partner through assisted partner notification services (aPNS), while 54 (21.3%) did not notify any partner as indicated in figure 4.

On age category, age group 41-50 had the highest proportion of partner notification (94.2%) compared to age group 18-20 where only 50% of index clients notified their partners through aPNS.

When disaggregated by sex, a higher proportion of male index clients notified their partners compared to females. Specifically, 88.2% of males notified at least one partner, compared to 73.3% of females.

With regard to main occupation, 81.9% of employed index clients notified their partners. However, the proportion of unemployed clients who did not notify partners (48.2%) was nearly equal to those who did, indicating relatively low engagement among this group.

Marital status also showed differences in partner notification. Among married index clients, 81.9% notified at least one partner.

Regarding the level of education, those HIV-positive adults who had attained lower level of education had the highest proportion of 79.9% of partner notification compared to those who had the higher level of education.

Index clients who resided in the rural areas had a higher proportion of partner notification at 79.6%, while the index clients who belonged to the general population had a higher proportion of partner notification at 81.0%.

With regard to the location of HIV testing, a higher proportion of index clients who were offered HIV testing within the hospital setting had a higher proportion of partner notification at 87.1% compared to those who were offered HIV testing services during community outreaches.

Index clients who had less than three sexual partners had a higher proportion to notify their partners (83.6%) when compared to those who had more than three sexual partners.

Concerning the type of relationship, Index clients in spousal relationships had a higher uptake of assisted partner notification services (85.0%) compared to those in casual or regular relationships.

With regard to HIV status awareness, index clients who were aware of their partners' HIV status had a higher proportion of partner notification (88.0%) compared to those who were unaware. Additionally, those who lived with their partners had a higher proportion of partner notification (89.3%) compared to those who did not cohabit.

4.3 The preferred method(s) of assisted partner notification services among newly diagnosed HIV-positive adult patients on care in Ndhiwa sub-County.

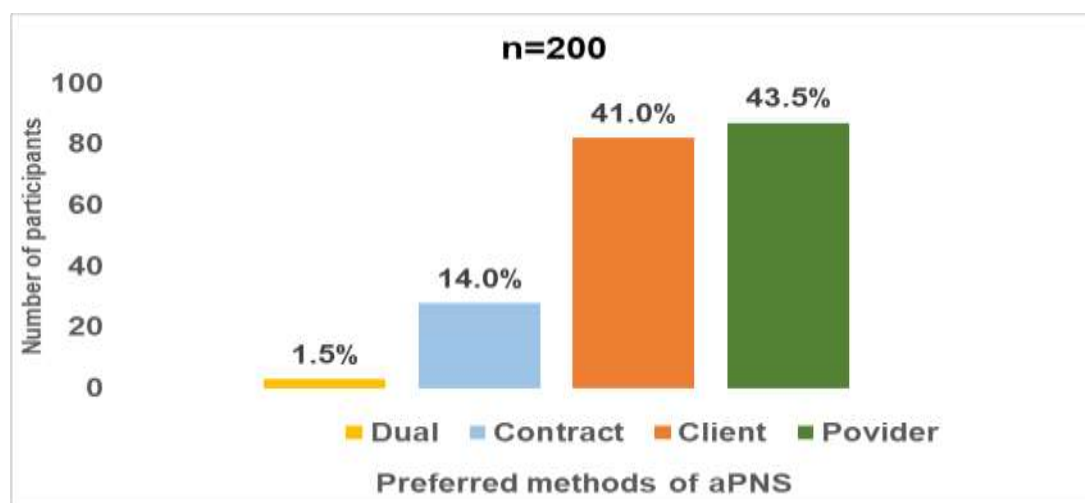


Figure 5: Preferred methods of referral for assisted partner notification services among the index clients (n=200)

The figure above describes the methods of client referral. Majority of the index clients preferred provider referral method to notify their sexual partners about the possibility of HIV exposure (43.5%) followed by client referral (41.0%). Dual referral was the least preferred method among the respondents (1.5%).

The distribution of the preferred methods of assisted Partner Notification Services (aPNS) and participant characteristics are illustrated in *Table 3* below.

Table 3 Preferred methods of among the index clients per socio-demographic characteristics (n=200)

Variable	Frequency (%)	Client	Contract	Dual	Provider
Age in years					
18-20	6(2.4)	3(50.0)	1(16.7)	0	2(33.3)
21-30	93(36.6)	33(35.5)	17(18.3)	8(8.6)	35(37.6)
31-40	91(35.8)	34(37.4)	13(14.3)	1(1.1)	43(47.2)
41-50	52(20.5)	23(44.2)	6(11.6)	0	23(44.2)
>51	12(4.7)	4(33.3)	0	0	8(66.7)
Sex					
Male	93(36.6)	36(38.7)	15(16.1)	2(2.2)	40(43.0)
Female	161(63.4)	61(37.9)	22(13.7)	7(4.3)	71(44.1)
Employment					
Employed	227(89.4)	88(38.8)	32(14.1)	8(3.5)	99(43.6)
Unemployed	27(10.6)	9(33.3)	5(18.5)	1(3.7)	12(44.5)
Marital status					
Married	182(71.7)	66(36.3)	28(15.4)	4(2.2)	84(46.1)
Single	72(28.3)	31(43.1)	9(12.5)	5(6.9)	27(37.5)
Education level					
Lower	164(64.6)	64(39.0)	21(12.8)	8(4.9)	71(43.3)
Higher	90(35.4)	33(36.7)	16(17.8)	1(1.1)	40(44.4)
Residence					
Rural	230(90.6)	90(39.1)	36(15.7)	8(3.5)	96(41.7)
Urban	24(9.4)	7(29.2)	1(4.2)	3(12.5)	13(54.1)
Population type					
Key pop	12(4.7)	3(25.0)	3(25.0)	2(16.7)	4(33.3)
General	242(95.3)	97(38.8)	34(14.1)	7(2.9)	107(44.2)
Tested from					
Hospital	116(45.7)	53(45.7)	8(6.9)	5(4.3)	50(43.1)
PNS/Outreach	138(54.3)	44(31.9)	29(21.0)	4(2.9)	61(44.2)
Number of sexual partners					
<3	189(74.4)	71(37.6)	25(13.2)	7(3.7)	86(45.5)
≥3	65(25.6)	26(40.0)	12(18.5)	2(3.1)	25(38.5)
Partner relationship					
Casual	55(21.7)	23(41.8)	8(14.6)	2(3.6)	22(40.0)
Regular	33(13.0)	11(33.3)	1(3.0)	3(9.1)	18(54.6)
Spouse	166(65.4)	63(37.9)	28(16.9)	4(2.4)	71(42.8)
Live together					
No	86(33.9)	34(39.5)	9(10.5)	5(5.8)	38(44.2)
Yes	168(66.1)	63(37.5)	28(16.6)	4(2.4)	73(43.5)
HIV status awareness					
No	79(31.1)	24(30.4)	8(10.1)	5(6.3)	42(53.2)
Yes	175(68.9)	73(41.7)	29(16.6)	4(2.3)	69(39.4)
Partner violence					
No	144(56.7)	49(34.0)	23(16.0)	2(1.4)	70(48.6)
Yes	110(43.3)	48(43.6)	14(12.7)	7(6.4)	41(37.3)

With regard to age, the provider referral method remained the most preferred approach across most age groups. Among index clients above 51 years, provider referral was the dominant method (66.7%), followed by those aged 31 to 40 years (47.2%), and 41 to 50 years (44.2%). The client referral method was relatively common in the 18 to 20 years group (50.0%). Notably, the dual referral method was rarely preferred, with minimal uptake across all age categories, and was completely absent among those aged 41 years and above. The contract referral method showed moderate uptake among the 21 to 40 years age group but remained unpopular in both the youngest (18–20 years) and oldest (>51 years) groups.

When disaggregated by sex, the provider referral method was the most preferred approach among both females (44.4%) and males (43.0%). This was followed by the client referral method, with a slightly higher preference among males (38.7%) compared to females (37.9%). The contract referral method ranked third, while the dual referral method was the least preferred in both sexes.

When categorized by employment status, provider referral emerged as the most preferred method of partner notification among index clients regardless of employment status, with 44.5% of unemployed and 43.6% of employed index clients choosing it.

Regarding marital status, provider referral was the most preferred method among the married index clients (46.1%), whereas among single index, the client referral method was more commonly preferred method of partner notification (43.1%).

On the education, those with lower (43.3%) and higher (44.4%) education levels predominantly preferred the provider referral method for aPNS, followed by client referral (39.0%) among those with lower education. Similarly, residence location

influenced preference, with provider referral being the most preferred among both rural (41.7%) and urban (54.1%) residents.

With regard to population type, provider referral was the most preferred method in both groups, with a higher proportion among the general population (44.2%) compared to key or priority populations (33.3%). Client referral was the second most preferred method across both categories, with 38.8% of the general population and approximately one-third of the key populations opting for it.

In relation to HIV testing location, the majority who were tested at outreaches preferred provider method of partner notification at 44.2%, while the majority of the index clients who were tested within the hospital preferred the client method of referral at 45.7%.

Provider referral was the most preferred method of partner notification among index clients, regardless of the number of intimate partners as selected by 45.5% of those with fewer than three partners and 38.5% of those with three or more intimate partners. Client referral was the next most favored option, with 37.6% of clients with fewer than three partners choosing

The majority of index clients in regular (54.6%) and spousal (42.8%) relationships preferred the provider referral method of notification, whereas those in casual relationships were more inclined toward client referral, with 41.8% favoring it.

Index clients who cohabited with their sexual partners showed a preference for the provider referral method (43.5%), while those who were aware of their partners' HIV status more often opted for client referral (41.7%). Similarly, index clients with no history of violence largely preferred the provider method (48.6%), whereas those who

had ever experienced any form of violence favored the client referral approach (43.6%).

4.4 Factors associated with the uptake of assisted partner notification services among newly diagnosed HIV-positive adults on care HIV in Ndhiwa sub-County.

This section presents the factors associated with the uptake of assisted partner notification services (aPNS) among newly diagnosed HIV-positive adults enrolled in HIV care in Ndhiwa sub-County.

4.4.1 Bivariate analysis

Bivariate analysis was performed to determine the relationship between the independent variables and aPNS uptake as summarized in table 4 below

Table 4 :Bivariate analysis of the socio-demographic factors associated with the uptake of assisted partner notification services

Variable	Partner notification		cOR (95% CI)	P-value
	Yes (%)	No(%)		
Age in years				
18-20	3 (50.0)	3 (50.0)	0.2(0.03-0.84)	0.031
21-30	59 (63.4)	34 (35.6)	0.3 (0.13-0.55)	0.000
41-50	79 (86.8)	12 (13.2)	2.5(0.67-9.24)	0.175
>51 years	49 (94.2)	3 (5.8)	0.8 (0.15-3.89)	0.742
31-40	10 (83.3)	2 (16.7)	Ref	Ref
Sex				
Male	82 (88.2)	11 (11.8)	2.7 (1.32-5.58)	0.006
Female	118(73.3)	43 (26.7)	Ref	Ref
Marital status				
Single	44(61.1)	28(38.9)	Ref	Ref
Married	156(85.7)	26(14.3)	3.8 (2.03-7.17)	0.000
Education level				
Lower	131(79.9)	33(20.1)	1.2(0.65-2.25)	0.55
Higher	69 (76.7)	21(23.3)	Ref	Ref
Occupation				
Employed	186(81.9)	41(18.1)	4.2 (1.84-9.63)	0.001
Unemployed	14 (51.9)	13(48.1)	Ref	Ref
Residence				
Rural	183(79.6)	47(20.4)	1.6 (0.63-4.09)	0.323
Urban	17 (70.8)	7 (29.2)	Ref	Ref
Type of population				
General	196(81.0)	46(19.0)	8.5 (2.46-29.52)	0.001
Key pop/priority	4 (33.3)	8 (66.7)	Ref	Ref

Tested from				
Hospital	101 (87.1)	15 (12.9)	2.7 (1.38-5.11)	0.004
PNS/Outreach	99 (71.7)	39 (28.3)	Ref	Ref
Sexual partners				
<3	158 (83.6)	31(16.4)	5.5 (1.90-15.86)	0.002
≥3	42 (64.6)	23(38.4)	Ref	Ref
Partner Relationship				
Regular	25 (75.8)	8 (24.2)	2.1 (0.79-5.45)	0.135
Spouse	142(85.5)	24(14.5)	3.9 (1.97-7.87)	0.000
Casual	33 (60.0)	22(40.0)	Ref	Ref
Live together				
Yes	150(89.3)	18(10.7)	6 (3.13-11.49)	0.000
No	50 (50.1)	36(41.9)	Ref	Ref
HIV status awareness				
Yes	154(88.0)	21(12.0)	5.3(2.78-9.96)	0.000
No	46 (58.2)	33(41.8)	Ref	Ref
Partner violence				
No	131(91.0)	13(9.0)	5.9(3.00-11.92)	0.000
Yes	69 (62.7)	41(32.3)	Ref	Ref
Approach of aPNS				
Client referral	82 (41.0)	15(27.8)	10.9(2.46-48.57)	0.002
Contract referral	28 (14.0)	9 (16.7)	6.2 (1.28-30.09)	0.023
Provider referral	87 (43.5)	24(44.4)	7.2(1.69-31.14)	0.008
Dual referral	3 (1.5)	6 (11.1)	Ref	Ref
Barriers to aPNS				
Confidentiality	50 (84.8)	9 (15.2)	2.5 (0.86-7.21)	0.090
Embarrassment	64 (79.0)	17(21.0)	1.7 (0.65-4.38)	0.277
Stigma	66 (77.6)	19(22.4)	1.6 (0.61-3.39)	0.350
Fear of separation	20 (69.0)	9 (31.0)	Ref	Ref
Benefits of aPNS				
Prevents HIV transmission	46 (83.6)	9 (16.4)	1.6 (0.71-3.62)	0.254
Linkage to HIV care	49 (80.3)	12(19.7)	1.2(0.61-2.69)	0.510
Knowledge of HIV status	105(76.1)	33(23.1)	Ref	Ref

***cOR-Crude Odd Ratio**
p-value- Probability value

We calculated the strength of association on factors influencing the uptake of aPNS. Index clients aged 41 to 50 years had a 2.5 times greater likelihood of accepting aPNS compared to those aged 31 to 40 years (OR=2.5, 95% CI 0.67-9.24, *p*-value=0.175). The age group 21 to 30 years was 0.3 times less likely to utilize aPNS, however statistically significant (OR=0.3, 95% CI: 0.13-0.55, *p*-value<0.001). Likewise, index

clients under 20 years old had a 0.2-fold lower probability of accepting aPNS (OR=0.2, 95% CI 0.03-0.84, p -value=0.031).

Regarding sex, males had 2.7 higher odds of accepting aPNS compared to the females (OR=2.7, 95% CI 1.32-5.58, p -value=0.006).

Concerning marital status, married clients had significantly a higher likelihood of accepting partner notification services compared to single index clientele (OR=3.8; 95% CI: 2.03-7.17, p -value<0.001).

On education level, the index clients with lower education were 1.2 times more likely accept aPNS compared to those with higher education, however not statistically significant (OR=1.2; 95% CI: 0.65-2.25, p -value=0.55).

Being employed was statistically associated with aPNS and increased the likelihood of acceptance by 4.2 times when compared to the unemployed, (OR=4.2; 95% CI: 1.84-9.63, p -value=0.001). Index clients who resided in the rural areas were 1.6 times more likely to utilize aPNS compared to those in urban areas, however not statistically significant (OR=1.6; 95% CI: 0.63-4.09, p -value=0.323).

Regarding the type of population, the index clients who belonged to the general population had a significantly a higher likelihood of aPNS acceptance compared to the index clients who belonged to the key population, (OR=8.5; 95% CI: 2.46-29.52, p -value=0.001).

In relation to the location of HIV testing, index clients who were offered HIV testing at the hospital setting were 2.7 times more likely to accept assisted partner notification services compared to those index clients who were tested for HIV at outreaches/PNS (OR=2.7; 95% CI: 1.38-5.11, p -value=0.004).

Regarding the number of sexual partners, index clients who had less than 3 sexual partners were 2.8 times more likely to utilize aPNS notify when contrasted with individuals who reported having more than 3 sexual partners, (OR=2.8; 95% CI: 1.48-5.28, p -value=0.002).

Being in a sexual relationship with a spouse increased the likelihood of acceptance of aPNS by 3.9 when compared to index clients who were in a casual sexual relationship, (OR=3.9; 95% CI: 1.97-7.87, p -value<0.001).

Index clients who lived together with their sexual partners were 6 times likelier to accept aPNS when compared with those who were not living together (OR=6.0; 95% CI: 3.13-11.49, p <0.001). Regarding HIV status awareness, the index clients who knew their partner(s) had HIV were 5.3 times likelier to accept aPNS than those who were unaware of the HIV status of their partner (OR=5.3; 95% CI: 2.78-9.96, p -value<0.001).

In relation to intimate partner violence, index clients who had never suffered violence of any kind were 5.9 times more likely to accept aPNS compared to those who had ever encountered any form of intimate partner violence (OR=5.9; 95% CI: 3.00-11.92, p -value<0.001).

Regarding the method of assisted partner notification referral, those who were comfortable with the client referral method were 10.9 more likely to uptake aPNS compared to those who preferred the dual method of referral, (OR=10.9; 95% CI: 2.46-48.57, p -value=0.002).

The index clients who cited that concerns of confidentiality as barrier to the uptake of assisted partner notification services had a greater probability of 2.5 to accept aPNS

times than those who cited fear of separation, (OR=2.5; 95% CI: 0.86-7.21, p -value=0.090), however not statistically significant.

Index clients who revealed that some benefits to assisted partner notification services were prevention of HIV transmission increased the likelihood of accepting assisted partner notification services by 1.6 times compared to those who mentioned HIV status awareness, (OR=1.6; 95% CI: 0.71-3.62, p -value=0.254).

4.4.2 Multivariate logistic regression analysis

All the factors influencing the uptake of assisted partner notification services with a p -value of <0.2 were subjected to multivariate logistic regression to determine their independence as shown in the table 5 below.

Table 5: Multivariate analysis of the factors associated the uptake of assisted partner notification services

Variable	<u>Partner notification</u>		aOR (95% CI)	P-value
	Yes (%)	No (%)		
Age in years				
<20	3 (50.0)	3 (50.0)	0.7(0.05-7.82)	0.738
21-30	59 (63.4)	34 (35.6)	0.3(0.12-0.83)	0.020
41-50	79 (86.8)	12 (13.2)	1.6(0.31-8.39)	0.565
>51 years	49 (94.2)	3 (5.8)	0.1(0.01-1.98)	0.146
31-40	10 (83.3)	2 (16.7)	Ref	Ref
Sex				
Male	82 (88.2)	11 (11.8)	2.6(0.84-7.84)	0.099
Female	118(73.3)	43 (26.7)	Ref	Ref
Marital status				
Married	156(85.7)	26(14.3)	0.6(0.12-2.96)	0.529
Single	44(61.1)	28(38.9)	Ref	Ref
Occupation				
Employed	186(81.9)	41(18.1)	2.2(0.61-8.06)	0.230
Unemployed	14 (51.9)	13(48.1)	Ref	Ref
Type of population				
General	196(81.0)	46(19.0)	0.5(0.14-1.54)	0.214
Key pop/priority	4 (33.3)	8 (66.7)	Ref	Ref
Tested from				
Hospital	101 (87.1)	15 (12.9)	3.8(1.46-9.83)	0.006
PNS/Outreach	99 (71.7)	39 (28.3)	Ref	Ref
Number of Sexual partners				

<3	158 (83.6)	31(16.4)	3.3(0.85-13.00)	0.085
≥3	42 (64.6)	23(38.4)	Ref	Ref
Partner Relationship				
Regular	25 (75.8)	8 (24.2)	0.7(0.15-3.03)	0.617
Spouse	142(85.5)	24(14.5)	0.9(0.13-6.33)	0.919
Casual	33 (60.0)	22(40.0)	Ref	Ref
Live together				
Yes	150(89.3)	18(10.7)	2.9(2.09-13.20)	0.177
No	50 (50.1)	36(41.9)	Ref	Ref
HIV status awareness				
Yes	154(88.0)	21(12.0)	5.2(2.09-11.43)	0.000
No	46 (58.2)	33(41.8)	Ref	Ref
Partner violence				
No	131(91.0)	13(9.0)	15.0(4.92-45.80)	0.000
Yes	69 (62.7)	41(32.3)	Ref	Ref

**aOR-Adjusted Odd Ratio*

**CI-Confidence interval*

During the multivariate logistic regression analysis; location of HIV testing, Partner HIV status awareness and absence of intimate partner violence were statistically associated with the uptake of assisted partner notification services.

Index clients who were tested from the hospitals were 3.9 times more likely to utilize aPNS than those who received HIV testing at outreaches, (OR=3.9; 95% CI: 1.43-10.78, p -value=0.008). Regarding HIV status awareness, the index clients who knew the intimate contacts HIV status were 4.5 times more likely to accept aPNS when compared to those who were not aware of their partners HIV status (OR= 4.5; 95% CI: 1.76-11.43, p -value=0.002).

Index clients who had never suffered violence of any kind were 14.4 times more likely to accept aPNS compared to those who had ever encountered any form of intimate partner violence (OR=14.4; 95% CI: 4.75-43.37, p -value<0.001).

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

Assisted partner notification services (aPNS) encourage index clients who are HIV-positive to tell their sexual contact(s) about the possibility of HIV infection. Being a voluntary service, the index clients must consent to disclose to their sexual partner(s). With the consent from the index clients, sexual partners are contacted and offered HIV testing services. The results of the study shed light on several factors influencing the likelihood of index clients informing their sexual contacts about the likelihood of HIV exposure. Firstly, age played a notable role, with clients aged 41 to 50 years were more likely to notify their partners compared to those aged 31 to 40 years. Similarly, younger clients below 20 years old were less likely to inform their partners, indicating potential differences in awareness or communication patterns across age groups. Gender also emerged as a significant factor, with males being more proactive in notifying their sexual partners compared to females. This finding underscores the importance of considering gender dynamics in HIV prevention and partner notification strategies. Marital status appeared to influence partner notification behaviour, with married clients showing a higher likelihood of accepting assisted partner notification services compared to those who were single clients. This suggests that relationship dynamics and support systems within marriage may facilitate communication about HIV status and exposure risks. Residence location also played a role, with clients in rural areas more likely. This points out the necessity for targeted interventions. Furthermore, factors such as cohabitation with partners, knowledge of partner(s) HIV status, the experience of partner violence, and preference for assisted partner notification referral method were associated with variations in notification behaviour. These findings underscored the complexity of interpersonal relationships

and individual circumstances in HIV disclosure and partner notification processes. Overall, these results emphasize the importance of comprehensive and tailored approaches to HIV prevention and partner notification, considering demographic, socio-economic, and relational factors to effectively reach and support individuals at risk of HIV exposure.

5.2 Socio-demographic characteristics of the study participants

The findings indicated females made up most of the study participants. These findings were consistent with other studies in Kenya which found out that females predominated the study participants (MUREI, 2018; Samson et al., 2019). Similarly, these study results were consistent with another study that established that out of 260 study participants, 184(71.1%) were females (Ebuenyi et al., 2014). The study findings were also consistent with another study where females constituted more than half of the participants (Chelogoi et al., 2021). This finding underscores the importance of considering gender dynamics in HIV prevention and partner notification strategies. It's important because men and women may face different challenges and opportunities when it comes to discussing HIV with their partners. By recognizing these differences, we can create better strategies that empower to reduce HIV transmission. Most of the respondents were aged between 21 to 30 years while the age group below 20 had the least. The findings were contrary with two studies that were carried out in Kenya which stated that majority were between 26 years to 35 years (30.5%) (Chelogoi et al., 2021; Samson et al., 2019). This finding indicated potential differences in awareness or communication patterns across age groups. Most of the study participants had attained a lower education level. These results were in agreement with another study in Kenya which found that a primary level of education

had been attained by most of the study participants (Goyette M, 2016). The findings were similar to another study which concluded that more than 50% of the respondents had attained a primary level or less (Samson et al., 2019) reported that 50.1%. The findings indicated that those who were married and were employed were the majority. These findings are in agreement with another study which concluded that the married dominated the respondents (Masyuko et al., 2019). Similarly, another study concluded that the majority of the study respondents were married (Anangwe, 2022). These research results, however, were at odds with those of another study that discovered a significant portion of individuals were unemployed (Cherutich et al., 2017). In our findings, the bulk of the respondents were residing in rural. These findings aligned with those of another study which found that most study participants lived in rural regions (Samson et al., 2019). In contrast, these study findings differed from another study which found that most of the participants lived in cities (Masyuko et al., 2019).

5.3 Proportion of index clients on care who notified their sexual partners through assisted partner notification services

The study findings showed that the age group 41 to 50 years had the uppermost proportion of partner notification. These study findings seem to differ a little by age category with two studies in Kenya which revealed that age category 36 to 45 years had a high proportion of partner notification (Anangwe, 2022; Chelogoi et al., 2021). The findings about age groups indicate potential differences in awareness or communication patterns across age groups. This means that there is a need for different ways to help people of different ages feel comfortable talking about HIV with their partners. Younger people might need more education or support from peers, while older people might need different ways to encourage open conversations about

HIV and telling partners about possible risks. Understanding these differences can help create better ways to prevent HIV and promote healthy relationships for everyone, no matter their age.

Our study findings indicated that HIV-positive adults who were males had the highest proportion of assisted partner notification services compared to females. These result findings were consistent with a cross-sectional facility-based study which established that male index clients exhibited a higher acceptance rate of aPNS compared to females (Kariuki et al., 2020). Another cross-sectional study in Tanzania on factors associated with partner elicitation was in agreement with the current study and concluded that assisted partner notification was more successful in males than in females (Gitige et al., 2021). In contrast, our findings differed from a study on determinants of assisted partner notification services which found that females had a higher percentage of notification (Anangwe, 2022). This finding underscores the importance of considering gender dynamics in HIV prevention and partner notification strategies. Understanding the gender balance may enhance tailoring partner notification approaches to men and women differently. It's important because men and women may face different challenges and opportunities when it comes to discussing HIV with their partners.

On the main occupation, our study findings found out that employed index clients carried the highest proportion of assisted partner notification. Similarly, another study in Kenya established that those who were employed were more likely to disclose their HIV status through aPNS compared to those who were unemployed (Anangwe, 2022).

Regarding marital status, our study found that those index clients who were married had the highest proportion of aPNS compared to those who were not married. The findings aligned with those of another study which documented that a high proportion of partner notification services was among married the index clients (Kariuki et al., 2020). Similarly, a study conducted by (Chelogoi et al., 2021) established married index had a high percentage of notifying their sexual partners about the possibility of HIV exposure through aPNS. Additionally, another study in Kenya highlighted that females who refused to notify their sexual partners were more likely not in any marital relationship, and a high acceptance was noted among the HIV index clients who were married (Sharma et al., 2021). However, our study findings contradicted those of (Gitige et al., 2021) on factors associated with partner elicitation which established that the HIV-positive adults who were not married had a high percentage of notifying their sexual partners. This result suggests that relationship dynamics and support systems within marriage may facilitate communication about HIV status and exposure risks.

Concerning the level of education, our study found that those HIV-positive adults who had attained a lower level of education had the highest proportion of partner notification compared to those who had higher education level. These study findings aligned with a study by (Kariuki et al., 2020), which concluded that high education was a failure to assisted partner notification services. Similarly, another cross-sectional study concluded that the index clients who had attained a primary education had a high proportion of partner notification (Plotkin et al., 2018). These results conflicted with another study which established that index clients with greater levels of education had a higher likelihood of using supported partner notification services than those with lower education (Anangwe, 2022). This suggests that education plays

a key role in promoting partner notification behaviours. This suggests that educational attainment may influence the likelihood of seeking and accepting support for notifying partners about potential HIV exposure.

Regarding the area of residence, the study findings found that HIV-positive adults who resided in the rural areas had the highest proportion of assisted partner notification services than in the cities. The findings contradicted a study conducted by (Anangwe, 2022) which established that those in urban settings had a high proportion of aPNS. The findings may be because people in rural areas may have fewer sexual partners due to low population density, which increases the effectiveness of aPNS. Furthermore, rural communities may have greater faith in healthcare workers whom they know well which makes it easier for contact tracing.

Concerning the type of population, our study findings established that the general population had the highest proportion of assisted partner notification services compared to the key and vulnerable population. The results aligned with another study which established that a high proportion was with the general population (Anangwe, 2022). Similarly, another study concluded that a high proportion of partner notifications was recorded among the general population (Chelogoi et al., 2021).

Regarding where the HIV-positive adult were tested from, the study findings indicated that those who were tested within hospital setting had the highest proportion of assisted partner notification compared to those who were offered HIV testing during community outreaches. These study findings were consistent with those of (Anangwe, 2022), which established that the uptake was high among those who were tested at TB clinics followed by those who were tested at outreaches. Regarding the number of sexual partners the index clients had, this study found out that those who

had less than three sexual partners had a higher proportion of partner notification as compared to those who had more than three. Similarly, (Anangwe, 2022) established that aPNS uptake was high among HIV-positive adults who had two sexual partners. Similarly, another study in Uganda established that the index clients with two sexual partners had a higher proportion of partner notification (Klabbers et al., 2021).

Regarding partner relationships, our findings established that index clients within a spousal relationship had the highest proportion of partner notification compared to those who were in casual and regular sexual relationships. Similarly, a study that was conducted in Tanzania revealed that the sexual partners who were in a casual relationship had a lower probability of being notified about possibility of HIV exposure (Plotkin et al., 2018). This can be explained by the lack of adequate contact information. The study findings were also consistent with a feasibility study which revealed that the majority of the HIV-positive adults who were in a spousal relationship with their sexual partner had a high proportion of partner notification compared to those in regular or casual relationships (Brown et al., 2017).

With regard to whether the index client lived together with the sexual partner or not, our findings revealed that index clients who lived together with their sexual partners had the highest proportion of assisted partner notification compared to those who did not live together. Similarly, a study on outcomes and experiences of partner notification revealed a high proportion of partner notification among the index clients who were living together with their sexual partners (Plotkin et al., 2018). Another study in Nigeria revealed that a high proportion of partner notification was among HIV-positive adults who lived with their partners (Ebuenyi et al., 2014). In contrast, another research study established that those who lived together with their partners had a low proportion of partner notification compared to those who did not live

together (Gitige et al., 2021). This could be attributed to fear of the partners' reaction to being notified about the possibility of HIV exposure. Regarding HIV status awareness, our study findings established that the index clients who knew the HIV status of their partners had a greater probability of assisted partner notification services than those who were not knowledgeable of the HIV-positive status of their partners. These findings were consistent with another study which revealed that the index clients who knew that their partners had HIV had a higher probability of partner notification than those who did not know (Gitige et al., 2021).

5.4 Preferred methods of referral for assisted partner notification services among the study participants

Overall, a high proportion of index clients preferred provider referral to notify their sexual partner(s), followed by client referral and dual referral was the least preferred method. These study findings were consistent with another study in Kenya which established that the most favored method was the provider (Samson et al., 2019). Similarly, another indicated that high percentage of partners located was high with the provider method of referral (Dalal et al., 2017a). Another retrospective study in Kenya established that Provider referral was the most preferred (Kariuki et al., 2020). In contrast, another study indicated client referral was the most favored method (Gitige et al., 2021). The study findings were also in contrast with another study in Malawi which established that the majority preferred the passive approach (Kamanga et al., 2015). In addition, the findings of this study conflicted with those of (Kahabuka et al., 2017), who found that passive was the most favored approach.

5.5 Factors associated with the uptake of aPNS among newly diagnosed HIV-positive adults on Care HIV in Ndhiwa sub-County

Our study findings established that the age group 21 to 30 years of the index client was statistically associated with the uptake of aPNS. However, these findings contrasted with a study by (Anangwe, 2022), which indicated that age was not a factor associated with aPNS. This age group may have participated in comprehensive sexual education programs that stress the value of HIV testing and partner notification in schools or community settings.

On sex of the index client, our study findings established that being a male was statistically associated with uptake of aPNS. These study findings agreed with another study on Factors associated with Partners Elicitation in Tanzania that stated that males had a high rate of uptake of assisted partner notification services compared to females (Gitige et al., 2021). Similarly, male index clients had a greater opportunity to get at least one sexual partner to be tested for HIV (Plotkin et al., 2018). The findings of this study align with those of (Kahabuka et al., 2017), which also reported males had a higher rate of aPNS than females. Similarly, a study by (Kariuki et al., 2020) found that males dominated the notification rate. In addition, our findings supported (Ebuenyi et al., 2014), who indicated that being a male was correlated with the HIV status disclosure through aPNS. The results might be attributable to gender dynamics and power disparities in many communities which make it difficult for women to disclose their HIV status or to participate in aPNS. This is because they may be afraid of violence, desertion, or other negative consequences from their partners. This finding underscores the importance of considering gender dynamics in HIV prevention and partner notification strategies.

Regarding marital status, our study findings established that being married was statistically associated with HIV status disclosure through aPNS. These results findings were consistent with another study which indicated that married index clients predominated in HIV status disclosure (Anangwe, 2022). Similarly, a study on outcomes in Tanzania established that married index clients had a higher probability than unmarried ones (Plotkin et al., 2018). The findings also aligned with another cross-sectional study that highlighted married index clients made up the majority (Kahabuka et al., 2017). The outcomes of this study resonate with those of (Ebuenyi et al., 2014), who found that being married was statistically associated with HIV disclosure through utilization of aPNS services. In contrast, the study findings showed some disagreement with another study in Tanzania on partner elicitation which concluded that singles were likely to elicit their partners through aPNS (Gitige et al., 2021). One possible explanation for the correlation between HIV disclosure and marriage is that marriages usually entail a greater degree of commitment and trust between partners, and people are more likely to reveal their HIV status. This also suggests that relationship dynamics and support systems within marriage may facilitate communication about HIV status and exposure risks

Concerning education, this study found that the level of education was not statistically associated with aPNS uptake. Similarly, another study in Kenya concluded that education was not statistically associated with the uptake of assisted partner notification (Anangwe, 2022). In contrast, our study findings differed from another research which established that high education level was statistically associated with the uptake of aPNS (Chelogoi et al., 2021).

Regarding the main occupation, our study findings revealed that the index clients who were employed were statistically associated with partner notification uptake. Being

employed increased the likelihood of HIV partner notification services compared to the unemployed. The findings agreed with another study in Kenya which established that HIV disclosure through aPNS was high among the employed HIV-positive index clients and lowest among the peasants (Anangwe, 2022). In contrast, another study by (Chelogoi et al., 2021) established that being employed was statistically associated with aPNS uptake. Perhaps, this may be because employment is frequently associated with a more stable lifestyle, which may increase an individual's likelihood of practicing healthy habits, such as notifying a spouse of health issues.

Our study findings established that the study participants who belonged to the general population were statistically with aPNS. The findings were consistent with other research in Kenya which concluded that those who belonged to the general population were more likely to disclose their HIV status through aPNS (Samson et al., 2019). Members of key populations might be more concerned about confidentiality breaches, making them less likely to participate in aPNS, whereas the general population is more likely to trust healthcare providers and the healthcare system, making them more receptive to aPNS services.

Having less than three sexual partners was statistically associated with aPNS and HIV status disclosure. Index clients who had less than three had a higher probability of reaching out and notifying them of the possibility of HIV exposure than those who had more than three. Similarly, (Anangwe, 2022) established that the uptake of aPNS was high among the index clients who had two sexual partners. The findings also echoed a study in Uganda that found that the index clients with two sexual partners had a high proportion of partner notification (Klabbers et al., 2021). However, the results contradicted those of another study that found no correlation between aPNS uptake and the number of sexual contacts (Samson et al., 2019). The correlation

between fewer sexual contacts and aPNS is that people are more likely to engage in aPNS when there are fewer partners to inform, as the procedure becomes simpler, easier to handle, and involves less time and effort.

Our results show that the type of sexual relationship the index client had was statistically associated with HIV status disclosure through aPNS. Index clients in spousal relationships had the highest proportion of partner notification compared to those who were in casual and regular sexual relationships. Similarly, a study that was conducted in Tanzania revealed that the sexual partners who were listed as casual sex partners were less likely to be notified about the possibility of HIV exposure (Plotkin et al., 2018). This can be explained by the fact that there aren't enough contact details because it's unclear who the causal partners are. The study findings were also consistent with the findings of (Brown et al., 2017), who reported that the majority of the HIV-positive adults who were in a spousal relationship with their sexual partner had a high proportion of partner notification compared to those in regular or casual relationships. Additionally, these findings contradicted a study in Tanzania which found that index partners were more reluctant to inform their spouses than those in casual relationships (Gitige et al., 2021). Some possible reasons for high disclosure among the spouses are that people in spousal relationships tend to be more intimate, and trustworthy and have more open channels of communication, which makes it easier to talk about delicate subjects like HIV status and may even lead to HIV status disclosure.

Index clients who lived together with their intimate partner were statistically associated with aPNS uptake when compared to index clients who did not live together with their sexual partner(s). Adults who lived together with their sexual partners had the highest proportion of assisted partner notification uptake compared to

those who did not live together. Similarly, a study on outcomes and experiences of partner notification revealed a high proportion of partner notification among the index clients who were living together with their sexual partners (Plotkin et al., 2018). The results agreed with another research study in Tanzania that established that Index clients cohabiting had a higher probability of disclosure than those not living together (Gitige et al., 2021). Another study in Nigeria revealed that a high uptake of partner notification was among HIV-positive adults who lived with their partners (Ebuenyi et al., 2014). In contrast, a study on factors associated with partner notification established that index clients who lived together with their partners had a low uptake of partner notification compared to those who did not live together (Govindasamy et al., 2016). This could be attributed to fear of the partners' reaction to being notified about the possibility of HIV exposure. Our findings may be attributed to the fact that cohabitation entails closer relationships between spouses, regular communication, and shared living areas, all of which increase the likelihood of talking about delicate subjects like HIV status disclosure and sexual health. On the other hand, this discrepancy might be a result of physical separation which leads to delays or problems when it comes to telling a partner about your HIV diagnosis and starting the notification process.

Awareness of partner HIV status was statistically associated with uptake of assisted partner notification services. The index clients who previously knew the HIV status of their partners remained more inclined to utilize assisted partner notification services than those who were unaware their sexual contacts HIV status. These findings were consistent with a study which revealed that index clients who knew that their partners had HIV had a higher probability of partner notification than those who did not know (Gitige et al., 2021). In line with another previous research, this study's outcomes

were also consistent with those of (Monroe-Wise et al., 2024), which found that most of the index clients knew their sexual contact's HIV status and recommended them for HIV testing through aPNS (Monroe-Wise et al., 2024). Similarly, the findings of this study align with those of (Kahabuka et al., 2017) who also reported that the index clients who were aware of their intimate partners confirmed HIV diagnoses had no trouble in notifying them through aPNS. In contrast, a study by (Netsanet & Dessie, 2018) found that the bulk of aPNS uptake was among the participants who were unaware of their partners' HIV status. This correlation may be because clients who are aware that their partner is HIV-positive are more conscious of the risk of HIV transmission and are therefore more proactive in taking preventative measures to safeguard their health and notify potential sexual partners.

The index client's testing location was statistically associated with aPNS uptake. Those who were tested for HIV within the hospital setting had a higher probability of disclosing to their sexual contacts through aPNS. These study findings were consistent with those of (Anangwe, 2022), which established that the uptake of aPNS was high among those who received HIV testing within the hospital departments. Kenya's HIV programs extend across all counties, aiming to achieve the first 95 target set by UNAIDS. Hospitals in Kenya usually provide comprehensive counselling services as part of their HIV programs. They also have resources and trained staff to support partner notification services. Index clients may find it simpler to notify their sexual partners as a result of this help. However, our findings differ from those reported by (Mosisa et al., 2022), who showed the majority of index clients were tested for HIV in outreach locations compared to those tested for HIV within hospital settings. This result could be attributed to the fact that HTS at outreaches is more

accessible, especially to individuals who may not visit the hospital regularly due to distance and cost.

Absence of intimate partner violence among the index clients was statistically associated with the uptake of aPNS. These findings were consistent with another study in Uganda on barriers to aPNS that concluded that violence served as an obstacle to aPNS (Klabbers et al., 2021). In contrast, a study by (Anangwe, 2022), showed that violence was not correlated to HIV disclosure. The correlation between the absence of partner violence and aPNS is that when there is no fear of violence, index clients are more likely to trust their partners with private information, including their HIV status, which increases the possibility that the partner may notify the other party through aPNS. On the other hand, the discrepancy in our findings might be because of fear of repercussions that may arise including partner violence.

5.6 Obstacles that discourage index clients from participating in aPNS

From our findings, stigma was not statistically associated with the uptake of aPNS. These findings were varied from a previous study on determinants of assisted partner notification (Anangwe, 2022), which highlighted stigma as an obstacle to aPNS. The results of our study also did not support the findings of other studies, which found that some of the obstacles to partner notification services plans were stigma (Oljira et al., 2024; Zhang et al., 2019). The study's findings also were in contrast with those of other studies, including (Meek et al., 2024), which highlighted stigma as an obstacle. Additionally, our results differed from those of (Kocur et al., 2024), who stressed the significance of fighting stigma to improve partner notification initiatives' efficacy and adoption. Our findings on why stigma was not a factor in the utilization of aPNS could be attributed to HIV program gains and initiatives including the community involvement in the planning, execution, and assessment of the program. By involving

community members as collaborators and champions, these initiatives have enabled people to confront stigma, stand up for their rights, and encourage constructive social transformation.

Confidentiality was not statistically associated with the uptake of aPNS. Our findings differ with a previous study on determinants of assisted partner notification (Anangwe, 2022), which highlighted confidentiality as one of the reasons index clients do not open up about their HIV status to their intimate partner. The results of our study also did not support the findings of other studies, which found that some of the obstacles to partner notification services plans were confidentiality (Oljira et al., 2024; Zhang et al., 2019). The study's findings also were in contrast with those of other studies, including (Meek et al., 2024), which highlighted confidentiality as an obstacle to aPNS. Additionally, our results differed from those of (Kocur et al., 2024), who stressed the significance of fighting discrimination to improve partner notification initiatives' efficacy and adoption. Our findings on why confidentiality was not a factor in the utilization of aPNS could be attributed to HIV program gains; Kenya's HIV programs have made tremendous achievements in lowering confidentiality concerns and boosting access to HIV care in a friendly and non-discriminatory way. Kenya has integrated HIV services into primary healthcare settings, making HIV testing and treatment more accessible and eliminating the prejudice associated with obtaining independent HIV services. By delivering complete treatment inside the current healthcare infrastructure, patients may get HIV services quietly and without fear of prejudice.

Embarrassment was not statistically associated with the uptake of assisted partner notification services. Our results differed with those of a prior study on the factors influencing supported partner notification which identified embarrassment as a factor

contributing to index clients' refusal to disclose their HIV status to a close companion through aPNS (Anangwe, 2022). Our study's results also contradicted those of earlier research, which indicated that embarrassment was one of the barriers to partner notification service plans (Oljira et al., 2024; Zhang et al., 2019). The results of the study also differed from those of previous studies, such as (Meek et al., 2024), which emphasized embarrassment as a barrier to aPNS. Furthermore, our findings were not the same as those of (Kocur et al., 2024), who stressed the need to combat prejudice to increase the effectiveness and use of partner notification programs. Our findings on why embarrassment was not a factor in the utilization of aPNS could be attributed to HIV program gains; HIV programs frequently help people living with HIV join peer support groups where they may exchange stories, offer encouragement to one another, and fight feelings of shame and loneliness. These organizations lessen the embarrassment attached to disclosure by providing safe locations where people can speak candidly about their HIV status.

Fear of separation was not statistically associated with the uptake of assisted partner notification services. The findings of our study varied with previous studies' findings, which suggested that one of the obstacles to partner notification service plans was Fear of separation and support (Oljira et al., 2024; Zhang et al., 2019). Our findings also contradicted a previous study on the variables driving informed partner notification, which found that index clients' reluctance to tell a close companion about their HIV status was influenced by fear of separation (Anangwe, 2022). The results of the study also differed from those of previous studies, such as (Meek et al., 2024), which emphasized fear of separation and support as a barrier to aPNS. Furthermore, our findings were not the same as those of (Kocur et al., 2024), who stressed the need to combat prejudice to increase the effectiveness and use of partner notification

programs. Our conclusions on why the use of aPNS was not influenced by separation anxiety may be linked to the success of the HIV program.

Kenya has significantly advanced its efforts to provide access to antiretroviral medication (ART) by implementing programs such as the Kenya AIDS Strategic Framework. Since access to treatment can improve health outcomes and lower the risk of HIV transmission within partnerships, these initiatives that offer free or subsidized treatment to persons living with HIV have lessened couples' anxiety of ending their relationship.

5.7 Benefits of HIV disclosure

According to the study's findings, most of the participants mentioned that assisted partner notification services enable knowledge of HIV status. These findings were associated with the level of HIV status disclosure, however not statistically significant. The study findings concur with another study on improving HIV testing through case finding by (Dalal et al., 2017a) which indicated that aPNS led to enhanced partner testing rates and increased identification of HIV-positive partners. The results of the study were consistent with those of another study, which found that higher HIV testing and status awareness were among the advantages of aPNS (Anangwe, 2022).

There was no discrepancy between the results because being aware of one's HIV status makes it possible to start antiretroviral medication (ART) early, which can greatly enhance health outcomes and increase life expectancy.

Preventing HIV transmission was a benefit to aPNS, however not significant. The results of the study align with those of another study on enhancing HIV testing through case findings enabled linkage to ART (Dalal et al., 2017a). Nothing about the

outcomes differed because those who use HIV prevention techniques have a lower risk of getting the virus, which also helps them stay healthier overall and steer clear of opportunistic infections and illnesses linked to compromised immune systems.

Linkage to HIV care was a benefit to HIV status disclosure, however not statistically correlated. The research results are in line with another study (Dalal et al., 2017a) on enhancing HIV testing through case findings, which showed that aPNS improved partner testing rates and enhanced linkage to HIV care and prevention. Similarly, a further study found that higher HIV testing and its correlation with ART therapy were among the advantages of PNS (Kamanga et al., 2015). There was no difference in the outcomes because antiretroviral treatment (ART) is effective and lowers the viral load to undetectable levels, enhancing the immune system and general health of HIV-positive clients. Further limiting the spread of HIV in the community is the concept of Undetectable = Untransmittable (U=U), which states that people with an undetectable viral load are unable to pass HIV to sexual partners.

5.8 Study limitations

Face-to-face interviews were used to collect data and thus it may suffer from self-reporting bias, where study participants may have provided socially desirable responses or inaccurately recall their experiences with aPNS uptake. However, some steps were taken to mitigate this bias, such as ensuring anonymity and building rapport with participants. The research may be vulnerable to sampling unfairness due to the selection of participants, potentially leading to overrepresentation or underrepresentation of certain demographic groups despite efforts to diversify recruitment strategies. The study was conducted at Ndhiwa sub-County hence the findings may have limited generalizability beyond this sub-County due to its unique

characteristic. However, the insights gained can inform similar settings and caution is warranted when extrapolating to regions with different characteristics. The public health interventions should target the entire county to meaningfully bring down HIV burden in the entire county. Despite this limitations, the study's results were based on valid data, and the statistical techniques utilized to generate those conclusions were sufficient. To mitigate over the limitation of the current study and make a generalization about Homa Bay County, a future study can be developed.

CHAPTER SIX

6.0 Conclusions and Recommendations

6.1 Conclusions

Despite the global and national progress in HIV testing and treatment, a significant proportion of sexual partners of people newly diagnosed with HIV remain undiagnosed representing a critical gap in HIV prevention and care. This study aimed to address this gap by assessing the uptake of assisted partner notification services (aPNS) in Ndhiwa sub-County. The findings revealed a high uptake of aPNS among newly diagnosed HIV-positive index clients. Provider referral was the most preferred method, indicating that when clients are allowed to choose the mode of notification, they are more likely to participate in partner notification. The success of the assisted partner notification services may have been boosted by letting index clients select the referral method they prefer, resulting in the testing of more partners.

In addition, factors such as the location where the index client was tested, awareness of their partner's HIV status, and the absence of intimate partner violence (IPV) were significantly associated with higher uptake of aPNS.

6.2 Recommendations

While assisted partner notification services (aPNS) were already being implemented in Kenya as part of the national HIV response, findings from this study highlights the need to strengthen and prioritize specific aspects of the program to enhance its effectiveness. Since fear of Intimate Partner Violence (IPV) can reduce aPNS uptake, it is essential to integrate routine IPV screening, counseling, and support services within HIV care settings to protect index clients and encourage safe disclosure. The findings support enhanced IPV screening and support mechanisms within the aPNS framework to improve uptake while protecting client safety. There is a need for

further research: Longitudinal studies are needed to track how aPNS uptake and its associated factors evolve over time. This will help evaluate the sustainability of current strategies and guide long-term improvements in HIV case finding and prevention.

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APPENDICES

Appendix I: Consent form (English version)

REPUBLIC OF KENYA



MINISTRY OF HEALTH

Informed Consent Form

Moi University



Kenya Field Epidemiology and Laboratory Training Program

Study Title: Factors associated with the uptake of Assisted Partner Notification Services and the preferred method of the service among Newly diagnosed adults on Care in Ndhiwa sub-County from January 2022 through December 2022, Kenya”.

Registration Number Date of interview: .../.../2023

Consent to participate in the study

Greetings! My name is _____ from Moi University, School of public Health, department of epidemiology and medical statistics conducting research on factors associated with the uptake and the preferred methods to Assisted Partner Notification Services among Patients on HIV Care in Ndhiwa sub-County, Kenya.

Note: *Any study participants who are unable to read Swahili or English will have the consent form read to them by a member of the research team (the PI or the Research assistants). Then, the participant will signs and date the consent form.*

Aim of the study: The aim of the study is to determine factors associated with the uptake of assisted partner notification among Patients in HIV Care in Ndhiwa sub-County, Kenya. Your selection as a potential participant is based on the fact that you were diagnosed to be HIV infected between January 2022 to December 2022. Kindly read this informed consent form which has adequate and comprehensive information as regards the study, before agreeing to be enrolled in this study. We would like you to understand what this study is all about before deciding to be part of the study. Such being the case, we would like you to know the study background, purpose, methods, potential benefits and risks, compensation, confidentiality and what your responsibilities as a study participant will be during the time you are in the study.

Participation in the study: You are being made aware that your participation is entirely optional. The principal investigator (PI) affirms that your right to receive medical care or other services won't be affected if you decline to participate in the

research project. Whilst in the study, you are free to ask any questions about the study.

Procedure: Having accepted to participate in the study, you will be asked a few questions using an interview guide. You will be requested to provide the study team with true responses. The interview will not take much of your time and will be conducted once.

Benefits and risks of the study: By participating in the research, you will gain valuable knowledge on the benefits of assisted partner notification services. You will also provide us with information on how best to accept notification and ultimately HIV testing services. Your opinions and perception provided are a benefit to those who are still denying access to HTS through assisted partner notification services. No risk is anticipated from the study.

Compensations: This research does not provide you with either rewards or monetary incentives for participating, however some transport reimbursements and refreshments will be provided if the interview time goes beyond the expected time.

Confidentiality: We are assuring you that confidentiality and privacy throughout the study period and thereafter are paramount to this study. We shall not use your names in our recordings for your anonymity. We would like to assure you that all data collected in this study will be accessible only by the investigator, supervisor or the Research Ethics Committee.

Alternatives to being in the study: If you decide not to participate in this study, you will continue to receive the care you are entitled to from the comprehensive care centres (CCC)/health facilities.

Who to contact? If you have questions concerning the study now or later, you will contact the Principal Investigator,

Hellen M Masila on +254727170753

hellen.masila@yahoo.com

Do you agree to participate?

Participant agrees

☐

Participant disagrees

☐

I agree to participate in the research study. The purpose and nature of the study has been explained to me. I am participating voluntarily.

Participant's Name: _____ Participant's Signature _____ Date.../.../....

Interviewers Name: _____ Interviewers Signature _____ Date.../.../.....

Appendix II: Fomu ya idhini (Swahili version)



Fomu ya Idhini iliyoarifiwa na
Chuo Kikuu cha Moi



Kenya Field Epidemiology and Laboratory Training Program

kichwa cha masomo: Mambo yanayoathiri uchukuaji na mbinu zinazopendekezwa kwa Huduma za Usaidizi za Arifa za Washirika miongoni mwa Wagonjwa kuhusu Utunzaji wa VVU katika Kaunti Ndogo ya Ndhiwa, Kenya.

Nambari ya Usajili

Tarehe ya mahojiano: .../.../2023

Idhini ya kushiriki katika utafiti

Salamu! Jina langu ni _____ kutoka Chuo Kikuu cha Moi, Shule ya Afya ya Umma, idara ya epidemiolojia na takwimu za matibabu inayofanya utafiti kuhusu mambo yanayoathiri uchukuaji huo na mbinu zinazopendekezwa zaidi za Huduma za Arifa za Washirika Wasaidizi miongoni mwa Wagonjwa kuhusu Huduma ya HIV katika Kaunti Ndogo ya Ndhiwa, Kenya.

Lengo la utafiti: Madhumuni ya utafiti huu ni kuchunguza mambo yanayoathiri upokeaji wa arifa ya washirika inayosaidiwa miongoni mwa Wagonjwa katika Huduma ya HIV katika Kaunti Ndogo ya Ndhiwa, Kenya. Uteuzi wako kama mshiriki anayetarajiwa unatokana na ukweli kwamba uligunduliwa kuwa umeambukizwa ugonjwa wa ukimwi kati ya Januari 2022 hadi Desemba 2022. Tafadhali soma fomu hii ya kibali kwa ufahamu ambayo ina maelezo ya kutosha na ya kina kuhusu utafiti, kabla ya kukubali kuandikishwa katika utafiti huu. kusoma. Tungependa uelewe utafiti huu unahusu nini kabla ya kuamua kuwa sehemu ya utafiti. Kwa hali hiyo, tungependa ujue usuli wa utafiti, madhumuni, mbinu, manufaa na hatari zinazowezezekana, fidia, usiri na majukumu yako kama mshiriki wa utafiti yatakuwaje wakati utakapokuwa kwenye utafiti.

Ushiriki katika utafiti: Unafahamishwa kwamba ushiriki wako hautokani na kulazimishwa bali ni wa hiari na chaguo lako. Hii ina maana kwamba tunatarajia ufuate wajibu wako katika utafiti na kwamba iwapo ungetaka kuondoa ushiriki wako kwenye utafiti hautaathiri kuhudhuria kwako huduma au ubora wa huduma

unazopewa kwenye kituo. Ukiwa katika utafiti, uko huru kuuliza maswali yoyote kuhusu utafiti.

Utaratibu: Baada ya kukubali kushiriki katika utafiti, utaulizwa maswali machache kwa kutumia mwongozo wa mahojiano. Utatarajiwa kuipa timu ya utafiti majibu ya kweli. Mahojiano hayatachukua muda wako mwingi na yatafanyika mara moja.

Manufaa na hatari za utafiti: Kwa kushiriki katika utafiti, utapata maarifa muhimu kuhusu manufaa ya assisted partner notification services. Pia utatupatia taarifa kuhusu namna bora ya kukubali arifa na hatimaye huduma za kupima ugonjwa wa ukimwi. Maoni na mtazamo wako uliotolewa ni manufaa kwa wale ambao bado wanakataa ufikiaji wa HTS kupitia assisted partner notification services. Hakuna hatari inayotarajiwa kutoka kwa utafiti.

Fidia: Utafiti huu haukupi zawadi au motisha ya fedha kwa ajili ya kushiriki, hata hivyo baadhi ya fidia za usafiri na viburudisho vitatolewa ikiwa muda wa mahojiano utapita zaidi ya muda uliotarajiwa.

Usiri: Tunakuhakikishia kwamba usiri na faragha katika kipindi chote cha utafiti na baadaye ni muhimu kwa utafiti huu. Hatutatumia majina yako katika rekodi zetu kwa kutokujulikana kwako. Tungependa kukuhakikishia kuwa data yote iliyokusanywa katika utafiti huu itafikiwa na mpelelezi pekee, msimamizi au Kamati ya Maadili ya Utafiti.

Njia mbadala za kuwa katika utafiti: Ukiamua kutoshiriki katika utafiti huu, utaendelea kupokea matunzo unayostahiki kutoka kwa vituo vya matunzo vya kina (CCC)/vituo vya afya.

Nani wa kuwasiliana naye?

Ikiwa una maswali kuhusu utafiti sasa au baadaye, utawasiliana na Mpelelezi Mkuu, Hellen M Masila

kwa namba +254727170753, barua pepe: hellen.masila@yahoo.com

Je, unakubali kushiriki?

Mshiriki anakubali

☐

Mshiriki hakubaliani

☐

Ninakubali kushiriki katika utafiti wa utafiti. Madhumuni na asili ya utafiti imefafanuliwa kwangu. Ninashiriki kwa hiari.

Jina la Mshiriki: _____ Sahihi ya Mshiriki _____ Tarehe.../.../....

Jina la Wahojaji: _____ Sahihi ya Wahojiwa _____ Tarehe.../.../.....

Appendix III: Questionnaire (English version)

Part A: Demographic information

Respondent ID: 001-254

Sex: ☐ Male ☐ Female Age (yrs): ____

County: _____ sub-County Ward: _____ Village: _____ Address

Date of Interview: (dd/mm/yy) __/__/__

Marital status

- | | |
|-------------------------------------|------------------------------------|
| ☐ Single | ☐ Separated |
| ☐ Married | ☐ Widow |
| ☐ Divorced | ☐ Widower |
| ☐ Cohabiting | |

Level of Education (**Select one**)

- | | |
|----------------------------------|------------------------------------|
| ☐ None | ☐ Secondary |
| ☐ Primary | ☐ Tertiary |

Occupation (**Select one**)

- | | |
|-------------------------------------|---|
| ☐ Employed | ☐ Casual laborer |
| ☐ Unemployed | ☐ Student |
| ☐ Business | ☐ Crop farming |

Residence

- | | |
|--------------------------------|--------------------------------|
| ☐ Rural | ☐ Urban |
|--------------------------------|--------------------------------|

Part B: Population type (**Select one**)

What is your population type?

- ☐ General population
- ☐ Commercial sex workers
- ☐ Truck Driver
- ☐ Uniformed forces
- ☐ Fish folk
- ☐ People who inject drugs (PWID),
- ☐ Men who have Sex with Men (MSM)
- ☐ Boda Boda rider.

☐ Other (specify)

Part C: HIV-related characteristics

2. Where were you tested? (Select one)

- | | |
|--|---|
| ☐ Inpatient department | ☐ Outreach |
| ☐ Outpatient department | ☐ VCT |
| ☐ Laboratory | ☐ TB clinic |
| ☐ MCH/Maternity | ☐ Other (Specify): |

3. Please tell me the number of sexual partners you have had in the past 12 months.
(integer)

Note: On ODK/Kobo, the tool should open depending on the number of sexual partners

Part D: Assisted partner notification services (assisted partner notification services)

You were tested for HIV, and your results showed you were HIV-infected

It was expected that you would notify your partner(s) about your HIV status so that she/he can access HIV testing services. Did you notify you notify your partner?

Yes, no

For a no response in the partners, skip to question 14

4. What were the reasons for telling your sexual partner (s) about your HIV status?

- | | |
|---|--|
| ☐ Help partner(s) access testing for HIV | ☐ It's effective in identifying people with HIV |
| ☐ Connection to HIV Care and Therapy | ☐ Prevents HIV transmission. |
| ☐ HIV Testing promotes knowledge of HIV status. | ☐ Care of partner(s) health Need for disclosure |
| ☐ It promotes the linkage of new clients to HIV treatment. | ☐ Other (Specify): |

Part E: Partner information form

Tip: Ask the client to give you as much information as they can about each of the partner(s). Be sure to observe measures to maintain confidentiality of this information.

5. How would you describe your relationship with this partner?

- | | |
|--|---|
| ☐ My wife/husband/fiancée | ☐ Cohabiting |
| ☐ My girlfriend/boyfriend | ☐ Someone I had sex with for fun |

- ☐ Someone who pays me or gives me things to have sex with her/him
- ☐ Someone I paid to have sex with
6. Do you currently live with this partner?
- ☐ Yes ☐ No ☐ Declines to answer
7. As far as you know, has this partner ever tested positive for HIV?
- ☐ Yes ☐ No ☐ Don't know ☐ Declines to answer
8. If known partner: is this partner currently taking medications for HIV?
- ☐ Yes ☐ No ☐ Don't know ☐ Declines to answer

Part F: Intimate partner violence screening tool

Please state to the client or patient, **because your safety is very important to us, we ask all clients the following questions:**

9. 1. Has [partner's code] ever hit, kicked, slapped, or otherwise physically hurt you?
- ☐ Yes ☐ No
10. 2. Has [partner's code] ever threatened to hurt you?
- ☐ Yes ☐ No
11. Has [partner's code] ever forced you to do something sexually that made you feel uncomfortable?
- ☐ Yes ☐ No
12. Has [partner's code] ever threatened you in other ways, such as divorce, desertion, lack of support, taking away access to your children, or other threats?
- ☐ Yes ☐ No

If YES, what type of violence was experienced from either of the above questions?

- ☐ Sexual Violence ☐ Emotional Violence
- ☐ Physical Violence ☐ Other (Specify)

Part G: Preferred method for assisted partner notification services

Explain to the client on the methods of referral. Ask the client which option they preferred to notify their partner(s). If the client choose “contract referral,” confirm if the partner came for HTS within 30 days.

Provider referral:- an approach in which with the index client's permission, a trained provider contacts the person's partner(s) in a discreet manner and provides them with voluntary HTS

Contract referral:- An approach whereby clients sign a contract with a skilled HTS provider and consent to independently reveal their status and the possibility of HIV exposure to their partner(s) and independently refer their partner(s). If the partner(s) don't access HTS or get in touch with the health care provider within that time frame, the provider will get in touch with them personally and offer voluntary HTS.

Dual referral:- an approach in which a trained practitioner supports and helps an through counselling and encourages clients who are while they reveal their status and the risk of HIV exposure to their partners. The provider additionally offers the partner with optional HTS (s).

Passive HIV partner notification services:- These are services that encourage clients who are to tell their sexual partner(s) about HIV their status

13. What was your most preferred method to contact your sexual partner(s) for assisted partner notification services

N/B: Please specify the method per partner enlist. The research assistant should take respondents through assisted partner notification services contacting methods before respondents give their preferred choices per partner(s). N/B: Kindly choose from among these Methods

- | | |
|--|--|
| ☐ Provider referral | ☐ Client referral |
| ☐ Contract referral | ☐ Dual referral |

Part H: Barriers to assisted Partner Notification Services.

14. Which of the following best describes the reasons for not enlisting your partner(s) for assisted partner notification? (Select Multiple)

- | | |
|---|--|
| ☐ Stigma | ☐ Loss of trust |
| ☐ Discrimination | ☐ Confidentiality |
| ☐ Fear of taking the blame | ☐ Embarrassment and shame |
| ☐ Fear of violence | ☐ Guilt |
| ☐ Testing location | ☐ Discrimination |

- | | |
|--|--|
| ☐ Loss of trust | ☐ Fear of loss of autonomy and emotional support. |
| ☐ Lack of knowledge | ☐ Not having partner(s) contact details |
| ☐ Concerns about confidentiality. | ☐ Other (Specify) |
| ☐ Fear of separation | |

15. Which of the following best describes why you would be encouraged to enlist your sexual partner(s) for assisted partner notification services?

- ☐ Help partner(s) access testing for HIV
- ☐ Connection to HIV Care and Therapy
- ☐ HIV Testing promotes knowledge of HIV status.
- ☐ It promotes the linkage of new clients to HIV treatment.
- ☐ It's effective in identifying people with HIV
- ☐ Prevents HIV transmission.
- ☐ Care of partner(s) health Need for disclosure
- ☐ Other (Specify:)

Appendix IV: Questionnaire (Swahili version)

Sehemu A: Taarifa za kidemografia

Kitambulisho cha Mjibu: _____

Jinsia: ☐ Mwanaume ☐ Mwanamke ☐ Umri(miaka): ____ Nambari ya simu:

Kaunti: _____ Wadi ya Kaunti Ndogo: _____ Kijiji: _____

Tarehe ya Mahojiano: (dd/mm/yy) __/__/__

Hali ya ndoa

- ☐ Mtu mmoja
- ☐ Kuolewa
- ☐ Kuachwa
- ☐ Kutengwa
- ☐ Mjane
- ☐ Mjane
- ☐ Kuishi pamoja

Kiwango cha elimu

- ☐ Hakuna
- ☐ Msingi
- ☐ Sekondari
- ☐ Elimu ya juu

Kazi

- ☐ Kuajiriwa
- ☐ Kukosa ajira
- ☐ Biashara
- ☐ Mfanyakazi wa kawaida
- ☐ Mwanafunzi
- ☐ Kilimo cha mazao

Makazi

- ☐ Vijijini ☐ Mjini

Je, umewahi kushiriki katika huduma za arifa za washirika zilizosaidiwa kabla ya utafiti huu?

- ☐ Ndiyo ☐ Hapana

Sehemu B: Aina ya idadi ya watu

Ni aina gani ya watu wako?

- ☐ Idadi ya watu kwa ujumla
- ☐ Wafanyabiashara ya ngono
- ☐ Dereva wa lori
- ☐ Nguvu za sare
- ☐ Watu wa samaki
- ☐ Watu wanaojidunga dawa za kulevya (PWID),
- ☐ Wanaume wanaofanya mapenzi na wanaume (MSM)
- ☐ Mendesha boda boda.
- ☐ Nyingine (taja)

Sehemu C: Sifa zinazohusiana na ugonjwa wa HIV

1. Ni lini uligundulika kuwa na ugonjwa wa ukimwi? dd/mm/yy

2. Ulipimwa kutoka wapi?

- ☐ Idara ya wagonjwa
- ☐ Idara ya wagonjwa wa nje
- ☐ Maabara
- ☐ MCH/Uzazi
- ☐ Uhamasishaji
- ☐ VCT
- ☐ Kliniki ya TB
- ☐ Nyingine (Bainisha):

3. Je, umekuwa katika matunzo ya ugonjwa wa ukimwi kwa muda gani? (Katika miaka; ikiwa chini ya mwaka mmoja basi , hesabu ya miezi)

- ☐ Chini ya miezi 6
- ☐ Miezi 6 - 1 mwaka
- ☐ Mwaka 1-miaka 2
- ☐ Miaka 2 - miaka 4
- ☐ Zaidi ya miaka 5

4. Je, unafanya ngono? a) Ndiyo: b) Hapana: (Weka alama inapohitajika)

5. Wakati wa kujamiiana hivi majuzi, ulitumia kinga (kondomu)?

☐ Ndiyo ☐ Hapana ☐ Sikumbuki

6. Tafadhali niambie idadi ya wapenzi ambao umekuwa nao katika kipindi cha miezi 12 iliyopita.

☐ 1

☐ 2

☐ 3

☐ 4 na zaidi (taja)

Sehemu ya D: Huduma za arifa za washirika wa Huduma za arifa za washirika zilizosaidiwa

Ulipimwa ugonjwa wa ukimwi, na matokeo yako yalionyesha kuwa umeambukizwa,

7. Niambie jinsi ulivyohisi ulipoambiwa kuwa umeambukizwa? [Chunguza furaha, huzuni, kukubalika, hasira, hisia za kusalitiwa, kukosa tumaini]

8. Iltarajiwa kwamba ungemjulisha mwenza wako kuhusu hali yako ya ukimwi ili aweze kupata huduma za kupima. Je, ulikubali mkakati huo?

☐ Ndiyo ☐ Hapana

Kama hapana, ruka hadi swali la 15

9. Ni sababu gani za kumwambia mwenzi wako kuhusu hali yako ya ugonjwa wa ukimwi? [Chunguza uhusiano wa kijamii, maadili kwenye arifa, hatia ya kibinafsi kwa uamuzi wa kuarifu na kukubali]

10. Je, mwenzi wako aliitikiaje ulipomjulisha kuhusu hitaji la huduma za kupima viwango vya ugonjwa wa ukimwi [Ruhusu mteja aeleze na kuchunguza unyanyasaji wa nyumbani, kuvunjika kwa ndoa, kutelekezwa kingono, unyanyapaa na ubaguzi]

Sehemu E: Mbinu inayopendekezwa ya huduma za arifa za washirika zilizosaidiwa

11. Ni njia gani ulipendelea zaidi kuwasiliana na mwenzi wako wa ngono kwa usaidizi wa huduma za arifa za mshirika

N/B: Tafadhali bainisha mbinu kwa kila mshirika kujiandikisha. Msaidizi wa utafiti anafaa kuwatumia wahojiwa kupitia mbinu za kuwasiliana na assisted partner notification services kabla ya waliojibu kutoa chaguo wanalopendelea kwa kila mshirika/washirika. N/B: Tafadhali chagua miongoni mwa Mbinu hizi

Weka alama inapotumika	Mshirika 1	Mshirika 2	Mshirika 3	Mshirika 4
Rufaa ya mtoa huduma				
Rufaa ya				

mkataba				
Rufaa ya mteja				
Rufaa mara mbili				

12. Je, umewahi kukumbana na ukatili kutoka kwa mwenzi wako yeyote wa ngono?

☐ Ndiyo

☐ Hapana

13. Kama **NDIYO**, kutoka kwa mshirika/washirika uliowaorodhesha, ni yupi kati yao anayeweza kujitokeza kwa mielekeo ya unyanyasaji/au anayekabiliwa zaidi na unyanyasaji ikiwa utawasiliana nao na kuwafahamisha hali yako ya ugonjwa wa ukimwi na kuwaonyesha hitaji. kujua hali zao?

	Majibu ya Mshirika
Mshirika 1	
Mshirika 2	
Mshirika 3	
Mshirika 4	

14. Kama **NDIYO**, ni aina gani ya unyanyasaji uliotokea dhidi ya kila mmoja wa washirika (washirika) walio na alama ya ndiyo?

Weka alama inapohitajika				
Partner	Unyanyasaji wa Kijinsia	Washirika Vurugu za Kihisia	Vurugu za Kimwili	Nyingine (Bainisha))
Partner 1				
Partner 2				
Partner 3				
Partner 4				

Sehemu F: Vizuizi vya huduma za arifa za washirika wanaosaidiwa.

15. Ni ipi kati ya zifuatazo inaelezea vyema zaidi sababu za kutokuorodhesha mwenza wako kwa arifa ya mshirika anayesaidiwa? Uchunguzi

Weka tiki, inapohitajika				
Sababu za kutosajili wapenzi wa ngono	Mpenzi 1	Mpenzi 2	Mpenzi 3	Mpenzi 4
Unyanyapaa na ubaguzi.				
Hofu ya kutengana.				
Hofu ya vurugu				
Hofu ya kuchukua lawama				
Hatia.				
Nyingine (Bainisha				

16. Ni ipi kati ya zifuatazo inaelezea vyema zaidi kwa nini ungehimizwa kuorodhesha mwenza wako wa ngono kwa usaidizi wa huduma za arifa za mwenzi?

- ☐ Haja ya kufichuliwa
- ☐ Saidia washirika kufikia upimaji wa ugonjwa wa ukimwi
- ☐ Utunzaji wa sehemu

16. Ni ipi kati ya zifuatazo inaelezea vyema zaidi kwa nini ungehimizwa kuorodhesha mwenza wako wa ngono kwa usaidizi wa huduma za arifa za mwenzi?

- ☐ Haja ya kufichuliwa
- ☐ Saidia washirika kufikia upimaji wa ugonjwa wa ukimwi
- ☐ Utunzaji wa afya ya mwenza
- ☐ Nyingine (taja)

17. Je, unafahamu manufaa yoyote ya huduma za arifa za washirika zilizosaidiwa?

- ☐ Ndiyo
- ☐ Hapana

18. Ikiwa NDIYO, unadhani ni faida gani kuu ya huduma za arifa za washirika zilizosaidiwa?

- ☐ Upimaji wa ugonjwa wa ukimwi hukuza ufahamu wa hali ya ukimwi
- ☐ Inakuza uhusiano wa wateja wapya na matibabu ya ugonjwa wa ukimwi
- ☐ Ni mzuri katika kuwatambua watu wenye ugonjwa wa ukimwi
- ☐ Huzuia maambukizi ya ugonjwa wa ukimwi

☐ Nyingine (Bainisha)

19. Je, unafahamu vikwazo vyovyote vya usaidizi wa huduma za arifa za washirika?

☐ Ndiyo

☐ Hapana

20. Iwapo NDIYO, tafadhali taja wengi unaowajua

Vizuizi kwa Majibu ya huduma za arifa za washirika zilizosaidiwa	(tiki inayotumika).
Unyanyapaa	
Hatia	
Kutomjua mwenzi.	
Hofu ya vurugu	
Hofu ya kuchukua lawama	
Hofu ya kutengana.	
Hofu ya kupoteza uhuru na msaada wa kihisia.	
Aibu na aibu	
Kutokuwa na mawasiliano ya washirika.	
Kutokuwa tayari na kutokuwa na uwezo wa kumjulisha mshirika	
Wasiwasi kuhusu usiri.	
Kunyimwa hali ya ugonwa wa ukimwi	
Mtazamo hasi wa wafanyikazi wa afya.	
Nyingine (Bainisha):	

[illegible]

Appendix VI: IREC Formal Approval Letter



MTRH/MU-IREC
MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471/2/3

Reference: IREC/459/2023
Approval Number: 0004421

Hellen Mulalya Masila,
Moi University,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.

Dear Ms. Masila,

FACTORS ASSOCIATED WITH THE UPTAKE OF ASSISTED PARTNER NOTIFICATION SERVICES AND THE PREFERRED METHODS OF REFERRAL AMONG NEWLY DIAGNOSED HIV-POSITIVE ADULTS ON CARE IN NDIHWA SUB COUNTY FROM JANUARY 2022 THROUGH DECEMBER 2022, KENYA

This is to inform you that **MTRH/MU-IREC** has reviewed and approved the above referenced research proposal. Your application approval number is **FAN: 0004421**. The approval period is **25th May, 2023- 24th May, 2024**. This approval is subject to compliance with the following requirements;

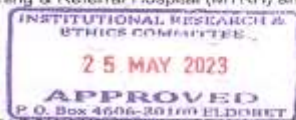
- i. Only approved documents including (informed consents, study instruments, Material Transfer Agreements (MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by **MTRH/MU-IREC**.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **MTRH/MU-IREC** within 72 hours of notification.
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to **MTRH/MU-IREC** within 72 hours.
- v. Clearance for export of biological specimens must be obtained from **MOH at the recommendation of NACOSTI** for each batch of shipment.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to **MTRH/ MU-IREC**.

Prior to commencing your study, you will be required to obtain a research license from the National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and other relevant clearances from study sites including a written approval from the CEO-MTRH which is mandatory for studies to be undertaken within the jurisdiction of Moi Teaching & Referral Hospital (MTRH) and its satellites sites.

Sincerely,

PROF. E. WERE
CHAIRMAN

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE



cc	CEO	-	MTRH	Dean	-	SOP	Dean	-	SOM
	Principal	-	CHS	Dean	-	SON	Dean	-	SOD

Appendix VII: NACOSTI Research permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 739787	Date of Issue: 10/July/2023
RESEARCH LICENSE	
	
This is to Certify that Miss. Hellen Mulalya Masila of Moi University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Homabay on the topic: Factors associated with the uptake of Assisted Partner Notification Services and the preferred methods of referral among Newly diagnosed HIV-positive adults on Care in Ndhiwa Sub-county from January 2022 through December 2022, Kenya, for the period ending : 10/July/2024.	
License No: NACOSTI/P/23/27026	
739787 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Verification QR Code	
	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	

Appendix VIII: Authorization letter from Homa Bay County

DEPARTMENT OF HEALTH

Telegrams: "MOH" Homa Bay
Telephone: 21039
When replying please quote
homabaychc@gmail.com



MINISTRY OF HEALTH
HOMA BAY COUNTY
P.O. BOX 52
HOMA-BAY

Ref: MOH/HB/CTY/RA /VOL.VI/006

24th July 2023

Hellen Mulalya Masila
Moi University
School of Public Health
P O Box 4606-30100
ELDORET- KENYA

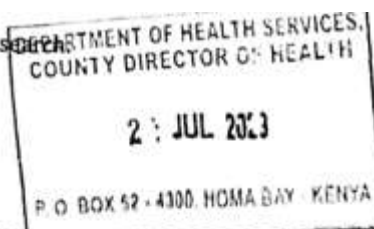
RE: RESEARCH AUTHORIZATION

Following your request to carry out research on "Factors that influence the uptake of Associated partners Notification Services Among Newly Diagnosed HIV Positive Adults on care in Homa Bay County," has been approved for the period ending 10th July 2024.

You will be required to adhere to the hospital's norms regulations and involve both the County Health Management team and hospital's staff during the research period. Kindly communicate your findings to the CHMT at the end of the research period

Wish you all the best in your research

Dr. Vincent Waringa
Deputy Director of Health Services
HOMA BAY COUNTY



Appendix IX: Letter of Acceptance from Ndhiwa Sub-County



REPUBLIC OF KENYA

REPUBLIC OF KENYA, MINISTRY OF HEALTH
THE MEDICAL OFFICER OF HEALTH
NDHIWA SUB-COUNTY
P.O. BOX 172, NDHIWA
ndhiwadistrict@yahoo.com
dhmtndhiwa@yahoo.com



HOMA BAY COUNTY

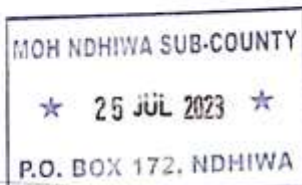
Date; 24TH JULY, 2023

**RE: ACCEPTANCE LETTER TO CARRY OUT A RESEARCH BY HELLEN
MULALYA MASILA - MOI UNIVERSITY**

We are pleased to inform you that you have been offered a chance to carry out a research on the **Factors that influence the uptake of Associated partners Notification Services Among Newly Diagnosed HIV Positive Adults on care in Homabay County** for the period ending 10th July, 2024.

Note that you will be required to adhere to the rules and regulations of the organization.

Thank you



For DR. NICODEMUS ODUNDO

MEDICAL OFFICER OF HEALTH

NDHIWA SUB COUNTY