FACTORS ASSOCIATED WITH INDEX HIV CLIENT TESTING AT CARE AND TREATMENT CLINICS IN ILEMELA MUNICIPAL COUNCIL, MWANZA - TANZANIA

Optatus Malewo, BSc

Master of Public Health Dissertation
Muhimbili University of Health and Allied Sciences
October, 2019

Muhimbili University of Health and Allied Sciences

School of Public Health and Social Sciences

FACTORS ASSOCIATED WITH INDEX HIV CLIENT TESTING AT CARE AND TREATMENT CLINICS IN ILEMELA MUNICIPAL COUNCIL, MWANZA - TANZANIA

By

Optatus Malewo

A Dissertation Submitted in (Partial) Fulfilment of the Requirement for the Degree of Master of Public Health of

Muhimbili University of Health and Allied Sciences
October, 2019

CERTIFICATION

The undersigned certify that she has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled: **"Factors Associated with Index HIV Client Testing at Care and Treatment Clinics in Ilemela Municipal Council"** in (partial) fulfillment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

_____

Dr. Germana H. Leyna (MD, Ph.D.)

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Optatus Malewo** declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature……. **Date**…….

ACKNOWLEDGEMENT

I am deeply indebted and thankful to Dr. Germana Leyna, my supervisor for her encouragement, technical support, directives, and discussions and for devoting her time to make this work successful.

I am grateful to Muhimbili University School of Public Health and Social Sciences through CDC-SPHSS project for sponsoring me to pursue Master of Public Health.

Equally, I am deeply thankful to Mwanza Regional AIDS Coordinator, Dr. Pius Marcel, all health care providers from health facilities in Ilemela Municipal and all participants who devoted their time to respond and contribute to the findings of this study, without their inputs this would not have been successful.

I also wish to express my gratitude to my research assistants for their support during data collection.

I would like to appreciate the technical support from my colleagues Dr. George Mgomella, Dr. Amuri Mbaraka, Mr. Ivan Chiduo and Mr. Mustafa Njozi.

Special thanks goes to my Lord Jesus without whom this work could not have been done, my beloved family and my mother Miss Angel Malewo for their continuous support, love and patience that created conducive environment for the success of this work.

DEDICATION

This work is dedicated to my late father Mr. Remias Malewo who passed away when I was sitting for my examinations. His guidance and prayers enabled me to pursue studies in Health. “May his Soul rest in Peace” Amen.

ABSTRACT

Background: Early HIV testing and diagnosis are paramount for increasing case identification and prevention of spread of HIV. Capitalizing on index clients who are already enrolled into care can be an entry point for identifying those undiagnosed. Index testing with fidelity started since 2017 however, uptake remain low.

Objective: To determine factors associated with index client HIV counselling and testing at Care and Treatment Clinics (CTC) in Ilemela Municipal Council.

Methodology: A cross-sectional study was conducted among HIV clients receiving care and treatment services within six CTCs in Ilemela Municipal Council between August and September 2018. Participants were randomly selected and interviewed through face to face to collect data on structural and individual factors associated with index testing using closed ended questionnaire. Ethical approval was obtained from Muhimbili University of Health and Allied Sciences ethics committee. Descriptive analysis was used to summarize the data, bi-variate and multi-variate logistic regression was used to determine individual and structural factors associated with successful index testing. Data management, manipulation and analysis was done using Stata version 15.

Results: Out of 352 eligible clients, 321(91%) agreed to participate in study with mean age of 37.9 (standard deviation of 9.7) years. Female clients accounted for 55.8 %; while married clients were 70.7%. Majority of the clients had primary education (65.7%) and 25.9% doing business while 21.2% were farmers. About 77.3% of respondents reported to have knowledge about index testing with 85.6% reporting healthcare providers were their main source of information. Being married [aOR: 3.01,95%CI: 1.33 - 3.12)]; a peasant [aOR: 3.28, (95%CI: 1.40 – 7.72)]; housewives [aOR: 3.79, (95%CI: 1.42 – 10.15)]; having adequate knowledge about index testing [aOR: 2.22, (95%CI: 1.16 – 4.25)]; having a positive attitude towards Index testing [aOR: 3.74, (95%CI: 2.07 – 6.74)];clients who used health care workers for notification [aOR: 1.61, (95%CI: 1.08 – 4.16)]clients who were assisted with partner notification [aOR: 2.92, (95%CI: 1.34 – 6.39)] ; clients given priority when brought index [aOR: 3.43, (95%CI: 1.67 – 7.04)] and supplies [aOR: 0.35, (95% CI:0.14 – 0.87] were associated with higher odds of successful index testing.

Conclusion: Marital status, main economic activity, knowledge and positive attitude towards index testing, methods used to notify index contactsgiving them priority at testing point, and supplies were associated with successful index testing.

Recommendations: Main economic activity particularly peasant and housewife showed strong association with index testing; therefore more studies are needed to find out mechanisms of how low income affect index testing.

Key Words

Index client, HIV counselling and testing, determinants, Sub Saharan Africa

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ART	Anti-Retroviral Therapy
CDC	Centers for Disease Control and Prevention
CTC	Care and Treatment Clinic
DATIM	Data for Accountability Transparency and Impact
DHIS2	District Health Information System 2
DQA	Data Quality Assessment
eMTCT	Elimination of Mother-To-Child Transmission of HIV
ESA	Eastern and Southern Africa
HBCs	Home Base Care providers
HTC	HIV Testing and Counseling
HIV	Human Immunodeficiency Virus
ID	Identification
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MTCT	Mother-To-Child Transmission of HIV
MUHAS	Muhimbili University of Health and Allied Sciences
PEPFAR	President’s Emergency Plan for AIDS Relief

PLHA	Persons Living with HIV AIDS
PMTCT	Prevention of Mother to Child Transmission of HIV
RCH	Reproductive and Child Health
R/CHMT	Regional/Council Health Management Teams
SSA	Sub-Saharan Africa
Tsh	Tanzania Shilling
UNAIDS	The Joint United Nations Program on HIV and AIDS
WHO	World Health Organization

OPERATIONAL DEFINITION

HIV index client	An individual newly diagnosed as HIV-positive and/or an HIV-positive individual who is enrolled in HIV treatment services (World Health Organization, 2015)
Children	Any person below the age of 15 years (UNAIDS, 2016)
Adult	Any person on age of 15 years or above (UNAIDS, 2016)
Person living with HIV/AIDS	Individual living with the Human Immuno-deficiency Virus (UNAIDS, 2015)
Index HIV counselling and testing	A focused approach to HIV testing in which index clients (sexual partners/couples or their children) of people diagnosed with HIV are offered HIV testing services (World Health Organization, 2015)

CHAPTER ONE

1.0 INTRODUCTION

1. 1 Background

The end of Millennium Development Goals (MDGs) in 2015 saw enormous gains on the efforts towards ending the Acquired Immune Deficiency Syndrome (AIDS) epidemic (Pustil, 2016). By the end of 2015, seventeen million (46%) people living with HIV (PLHA) had been reached and linked to Antiretroviral Therapy (ART), surpassing the fifteen million PLHA target (Pustil, 2016). Greatest gains were realized in Eastern and Southern Africa (ESA), the region hardest hit by the AIDS epidemic, with over ten million (54%) PLHA linked to ART and 36% reduction in HIV-related deaths (Pustil, 2016). However this success also highlighted a marked gap of about a half of PLHA not diagnosed or linked to treatment (Pustil, 2016). Futhermore, according to (UNAIDS, 2016), it estimated that 60% of men (56% in ESA) and 48% of women (41% in ESA) aged 15 years and older living with HIV are not linked to lifesaving ART. These figures underscore the long way ahead in reaching the UNAIDS 90-90-90 treatment target by 2020 (Pustil, 2016). They further emphasize the need for intensified and innovative efforts to improve identification and linkage of PLHA to ART, particularly men and women of reproductive age, so as to realize the ambitious global commitment to end the AIDS epidemic by 2030 (UNAIDS, 2016).

According to (UNAIDS, 2018) it is estimated that only 76% of people living with HIV in eastern and southern Africa are aware of their HIV status and there is huge variation between the countries. For example in Tanzania only 52.2% of PLHIV know their status and this is according to Tanzania HIV Impact Survey which was conducted in 2016 (United Republic of Tanzania Ministry of Health and Social Welfare, 2017). This shows that there is still a lot of work to be done to identify those who are not yet diagnosed.

The WHO African region report on global update on HIV treatment shows that expanding testing throughout clinical services and supporting the testing of partners and family members of people with HIV can increase the number of people to know their HIV status (World Health Organization, Unicef and Unaids, 2013). Therefore, immediate strategies

are required to diagnose the remaining population to meet the global plan towards elimination of HIV infection. In order to reach the “first 90” of UNAIDS’s target, effective strategies are required to ensure that all those who are at risk are identified and tested, and index testing could be one of the strategy to get them. Studies have shown that partner notification when index partner is diagnosed with a communicable disease is an effective strategy to identify undiagnosed PLHIV and sero-discordant couples (Hosseinipour and Rosenberg, 2013). Futhermore, a Malawian and Cameroonian study on index testing found 64% and 50.1% infection rate among partner of index clients, respectively (Brown *et al.*, 2011), (Henley *et al.*, 2013) indicating that this approach can be used to contain HIV epidemic although in sub-Saharan Africa (SSA) partner notification is underutilized.

The President’s Emergency Plan for AIDS Relief (PEPFAR) Data for Accountability Transparency and Impact (DATIM) report shows that index testing increased HIV positive yield by 5.7% just in quarter three (April – June , 2017) (USG DATIM report, 2017) through health facility HIV Testing and Counselling (HTC) underscoring the importance of moving into this direction.

Moreover, HIV index testing of male sexual partners of index pregnant or breastfeeding women diagnosed with HIV at antenatal care (ANC) clinic can greatly contribute towards increasing identification of previously undiagnosed HIV-positive men, increase disclosure of HIV status among sex partners and improve primary prevention of HIV transmission among discordant couples. Literature show that disclosure of HIV status among couples and meaningful engagement of male partners of HIV-positive pregnant or breastfeeding women can have a positive impact on uptake, adherence and retention on ART and PMTCT care among pregnant and breastfeeding women living with HIV (PWHIV) (Spangler *et al.*, 2014) . Moreover, the study conducted by (Aluisio *et al.*, 2016) showed significant reductions in new HIV infections and AIDS related deaths. For example, this study showed significant reduction in mother to child HIV transmission rate to 8.9%. Similarly, report from (UNAIDS, 2018) show that new infections and AIDS related death in children were reduced up to 82% from 2015 to 2017. This achievement was largely contributed by the universal coverage of HIV testing and counseling (HTC) services at antenatal care (ANC) and improved access to and uptake of lifelong antiretroviral therapy

(ART) among those found to be HIV-infected, through the World Health Organization (WHO)'s Option B+ intervention (UNAIDS, 2016).

In addition, remarkable achievements were made in ART coverage whereby, by the end of 2016, 882,000 (63%) PLHA had been reached and linked to ART (UNAIDS, 2016). This resulted to the decline of new infections and death related to AIDS to 8% (UNAIDS, 2018). However, data still shows that fewer men (40%) were reached compared to women (62%), (UNAIDS, 2016) underscoring a disproportionate gap in ART coverage. Furthermore, the 2011/12 Tanzania HIV/AIDS and malaria indicator survey revealed that fifty percent of men of reproductive age have never been tested for HIV compared with women were seventy five percent have ever been tested (TACAIDS and OCGS, ICF, 2013), suggesting a disproportionate gap in HTC uptake. Undiagnosed PLHA not linked to ART, particularly men and women of reproductive age are at a greater risk of spreading HIV as well as poor health outcomes for themselves. This underscores the need to introduce innovative and targeted approaches to scale up identification of previously undiagnosed men, women and their children living with HIV and link them to ART care. Increasing evidence suggest that enhanced efforts to reach out to and offer HTC to partners of index PLHA is a feasible, acceptable and effective strategy to improve identification of undiagnosed PLHA and linkage to ART (Dalal, Johnson, Fonner, Caitlin E. Kennedy, et al., 2017); (Kahabuka et al., 2017). Nonetheless, there is limited literature on the factors affecting index client HIV counselling and testing; therefore understanding them will improve uptake and prevention strategies in Tanzania.

Futhermore, aggregate data from the national web-based District Health information System (DHIS2, 2017) database indicated that in 2016, only 58% (1,042,954/ 1, 798197) of pregnant women who newly registered for ANC services tested for HIV together with their partners. The figures varied greatly across regions, highest in Kigoma region (83%) and lowest in Dar es Salaam (25%). It is, however, unclear whether a similar rate applies to PLHIV in the general population and what factors influence its uptake.

PEPFAR Tanzania has come up with different strategies including targeted testing by generating a list of priority councils with high burden of HIV disease, index testing approaches, the Bukoba Combination Prevention Evaluation (BCPE) model which aimed at improving linkage case management , optimize PITC and strengthening of community testing services to narrow this gap. Index testing with fidelity has been introduced in different facilities in Tanzania since 2017 however, the uptake remains low.

Therefore, this study aims at investigating factors associated with index client HTC among sexual partners or biological child/ren of index PLHIV receiving care and treatment services in Ilemela Municipal Council, Mwanza, Tanzania in order to be able to improve the uptake of this approach

1.2 Conceptual Framework

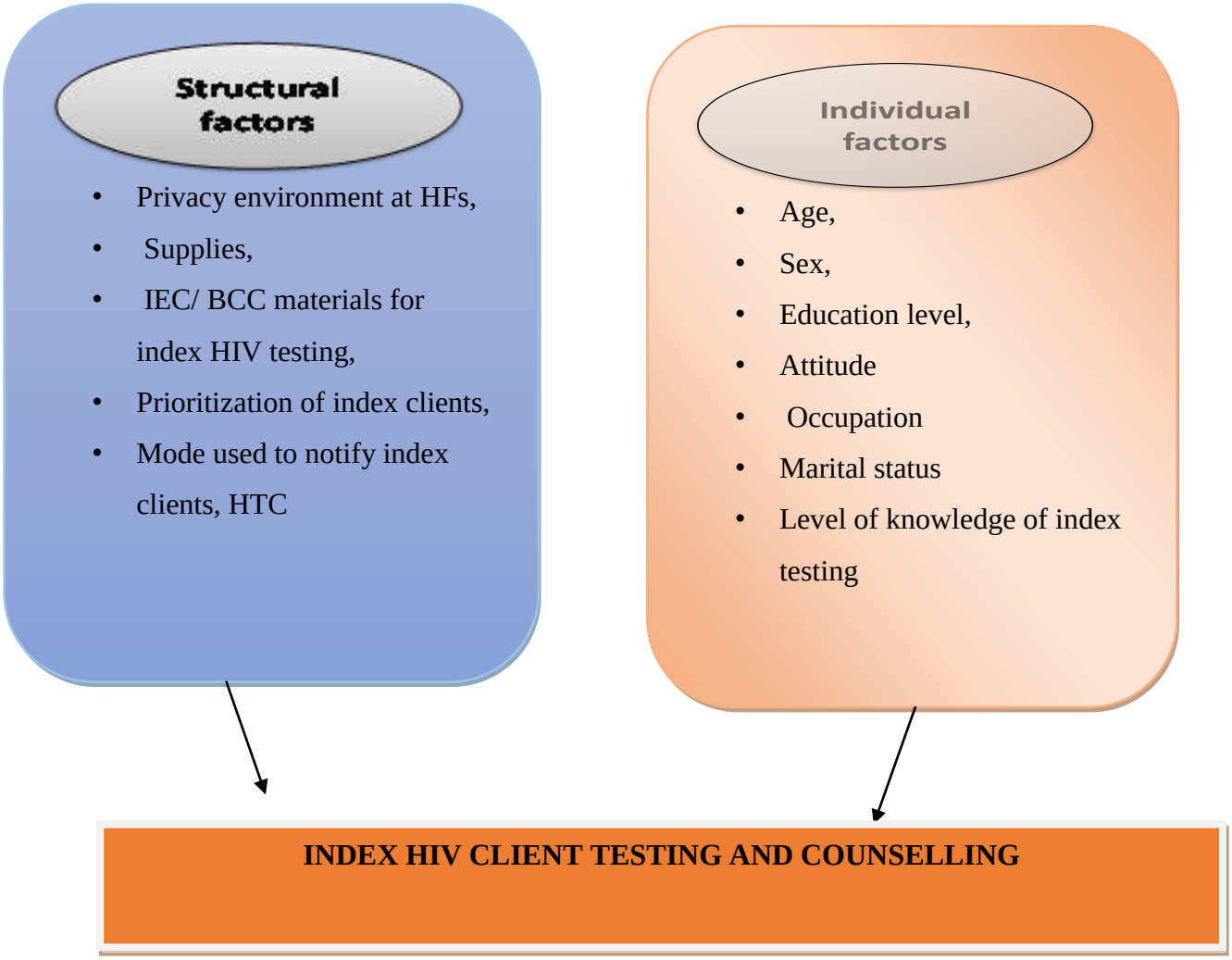


Figure 1: Conceptual framework

Index HIV testing is influenced by both structural and individual factors. The structural factors includes; the environment in which index HTC is provided in terms of privacy for individuals who would like to come to be tested and if priority is given to them when they show up to the clinic for testing, availability of commodities to provide testing services to index contacts or supplies are limited or there is always stock out that limit index clients to be tested advocacy and sensitization materials to make people aware about index testing and where they can access this kind of services, mode /approach used notify the index

contact to come to test in terms of how were index contacts contacted to come for testing? Were they contacted by their spouses or healthcare provider or health care provider and the spouse and modal used for HTC in terms were they tested through VCT, PITC or index testing and where was that service provided; was it at the facility or community; physical environment in terms of the privacy where the services are provided can affect the uptake of index testing. If there is no privacy, overcrowded, unwelcoming staff altitude, among others, people will not bring their index to be tested. For example , the study conducted in Tanzania on barriers to accessibility and utilization of HTC services shows that age, education, socioeconomic status, proximity to clinics, and availability of rapid testing kits, poor physical facilities, and long waiting times was associated with the uptake of HIV testing and counselling services (Merten, Ntalasha and Musheke, 2016). Studies done elsewhere also show that clinical environment where the clinic services is conducted can be one of the barrier for care linkage and engagement (Hoffmann *et al.,* 2016)

The individual factors include; level of knowledge in terms of classes attended. Educated individuals are likely to seek for health care and attitude towards index HIV testing in terms of how individuals have been persuaded and their experiences, reaction of the individual when approached to come for testing in terms of how they were approached and by who, occupation in terms of what does the individual do and how does it affect their motive to come for testing, the age of the individual in terms of young age feeling energetic and thinking there is no need of testing, sex in terms female having more tendency of seeking for health care services.

All these will determine index HIV testing in a given health facility.

1.3 Problem Statement

It is estimated that by the end of 2016, about 36.7 million people were living with HIV globally and of these 14.5 million remain undiagnosed (UNAIDS, 2016) In 2014, the Joint United Nations Programme on HIV and AIDS (UNAIDS) and partners set the '90-90-90 targets'; aiming to diagnose 90% of all HIV positive people, provide antiretroviral therapy (ART) for 90% of those diagnosed and achieve viral suppression for 90% of those treated, by 2020.

Tanzania is estimated to have about 1.4 million people living with HIV and of these only 52.2% know their HIV status (United Republic of Tanzania Ministry of Health and Social Welfare, 2017). In order to address this gap, the ministry of health and its partners has come up with several strategies including index HIV testing whereby people living with HIV (PLHIV) have been called upon to bring their sexual partners or biological child/ren or needle sharing contacts for testing. However, they are not readily inviting their sexual partner/s or needle sharing partner/s or bring their child/ren to be tested. For example, in Ilemela Municipal Council, PEPFAR quarterly report of October to December 2017 showed that only 2.7% of HIV clients enrolled in care and treatment clinics had their index tested. Furthermore, Tanzania HIV Impact Survey (United Republic of Tanzania Ministry of Health and Social Welfare, 2017) showed drastic increase of HIV infection in Mwanza region from 4.2 % in 2012 to 7.2% in 2016 (United Republic of Tanzania Ministry of Health and Social Welfare, 2017;, THMIS, 2012). Therefore, understanding the factors hindering index clients from bringing their contacts is critical in identify those already infected and bring them to care or prevent those who are not infected, otherwise those who are undiagnosed will continue to spread the infection and we can capitalize on those already on care to identify them.

Several studies have also shown that index HIV testing is an opportunity of identifying those undiagnosed and link them to care (Dalal et al., 2017; Kahabuka et al., 2017).

Therefore, this study aimes at identifying factors associated with index testing in order to come up with strategies that will help to identify individuals not yet diagnosed to meet UNAIDS 1st 90.

1.4 Rationale

The current HIV testing services (HTS) approaches cannot enable this country to reach UNAIDS first 90. The recent Tanzania HIV Impact Survey (THIS) study shows that only 52.2% of estimated 1.4 million people living with HIV in Tanzania know their HIV status (United Republic of Tanzania Ministry of Health and Social Welfare, 2017). This means 48% of people living with HIV are not yet diagnosed and are continuing to spread the infection. Therefore, comprehensive approaches are needed to fill existing gap and index testing is an effective strategy for identifying new cases of HIV infection. For example, PEPFAR quarterly report of October to December 2018, on the study done in Kagera Tanzania shows that, contact tracing of the index can yield up to 67% new HIV positive cases underscoring the importance of index testing as a strategy that can be used to establish active HIV transmission cluster. Therefore,

- This study will enable the policy makers and program managers to understand the factors hindering index client testing and come up with the strategies to improve index testing; hence meet UNAIDS first 90.
- The study will generate new local knowledge regarding determinants of index HIV counselling and testing to support design of interventions to improve HIV testing and eventually linking to CTC services.

1.5 Research Questions

i) What are the factors that influence index HIV client testing in Tanzania?

ii) What are individual factors associated with index client HIV testing?

iii) What are perceived health facility factors that are associated with index client HIV testing?

1.6 Objectives

1.6.1 Broad Objective

To determine factors associated with index client HIV testing and counseling among PLHIV attending CTCs at Ilemela Municipal Council.

1.6.2 Specific Objectives

1. To determine individual factors associated with index client HIV testing and counselling in Ilemela Municipal Council
2. To determine perceived health facility factors associated with index client HIV testing and counselling in Ilemela Municipal.

1.7 Outcome Measures

Proportion of index client testing in Ilemela Municipal Council dichotomized to 0 “No spouse or child tested for HIV” and 1 “Has a spouse or child tested for HIV”. Index HIV counselling and testing was measured using two questions – **“**Has your spouse been tested for HIV/AIDS after knowing your HIV status?” and for participants with children, had an additional question, “Has any of your children been tested for HIV/AIDS after knowing your HIV status?” This question categorized participants into two categories. Those who responded “Yes” meaning that their index contacts have been tested or “No” meaning that their index contacts have not been tested.

CHAPTER TWO

2.0 LITERATURE REVIEW

To achieve the first 90 of UNAIDS target, identifying those people living with HIV and linking them to care is the key strategy to success. Index client HIV testing is one of the strategy of identifying undiagnosed individuals and linking them to care.

What is index HIV testing and why offer index testing

Index testing is a voluntary process where counsellor and or healthcare provider ask the index HIV client to elicit all their sexual or needle sharing partner/s or biological child/ren within past year so that can be contacted and tested. If he/she agrees, each listed partner/s or child/ren are contacted, informed have been exposed to HIV and offered voluntary HIV testing services.

Index testing aim at identifying index cases of which could be a spouse/sexual partner, injecting drug use partner or needle sharing partners and biological child/ren. The goal is to break the chain of HIV transmission by identify those who are infected and link to care or provide pre-exposure prophylaxis to partners who are HIV negative.

Index testing must meet 5Cs, which are consensual, confidential, counselling, correct test and connection to treatment or prevention services.

Index testing benefit the index client by assisting them in getting their partner/s or child/ren to be tested for HIV as well as taking away the burden off of index client as the sole person responsible for the notification. On the side of the partner/s or children of the index client, index testing maximizes proportion of partner/s or children, who are notified of their exposure to HIV, allow them to be tested and those found infected to be initiated on treatment to reduce HIV related diaseas and mortality. On the community side, index testing is effective strategy for case finding and this reduces future rates of transimission.

Models of index testing services

There are four models for index testing

Client referral model; in this model, the index client takes responsibility for disclosing their HIV status to their partner(s) and encourage partner(s) to seek HIV testing services.

Contract referral; here the index client enters into a "contract'' with counsellor and or health care provider where he/she agrees to disclose their HIV status to their partner(s) and refer them to HIV testing services within a defined time frame. If the partner(s) does not access the HIV testing services within the specified time, then the counsellors/healthcare providers contact the partner(s) directly and offer them voluntary HIV testing

Provider referral; with the consent of HIV positive index client, the counsellors/healthcare providers directly contact the client's partner(s) and offer them voluntary HIV testing services while maintaining the confidentiality of the index client.

Dual referral; Here a trained healthcare provider sits with HIV positive client and his /her partner(s) to provide the support as the client discloses her/his HIV status and then offer HIV testing services to the partner.

Who and when index testing should be offered

Who should be offered HIV index testing services?

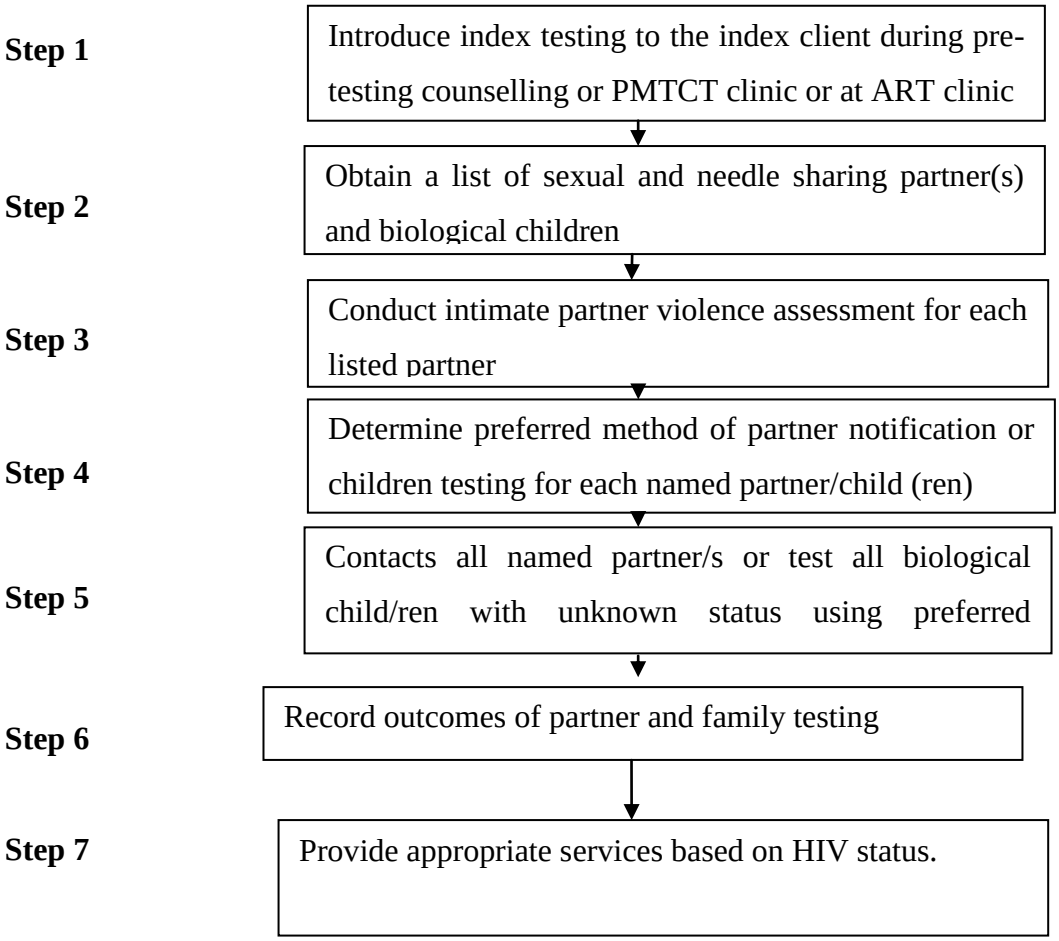
HIV positive adults and adolescent should be offered. Index partner/s testing for all sexual or injecting drug partner/s from the past years and family testing of all biological child/ren born from mother or father who is HIV positive and biological sibling if the index case is a child.

When should the service be offered?

The concept of index HIV client testing and the benefits associated with it should be introduced at pre testing counselling or at PMTCT or ART clinic.

Partner elicitation is not a one-time event but rather is a continual process; therefore, this should be initiated immediately after HIV diagnosis, or at least annually as part of the treatment services or after change in relationship has occurred.

Process of index testing at the facility



Step 1: During this step, index testing is introduced to the client by the counsellor or the healthcare provider. Among other things introduced to the index client includes; the importance of ensuring that index cases that is, sexual partner/s or child/ren are tested for HIV so that those who are found to be positive can be initiated on treatment and leave health life and reduce the risks of passing the infection to their sexual partners or child/ren and those who are found to be negative can access HIV prevention services to help them remain HIV negative.

Furthermore, the index client is also informed about the options for reaching or contacting their partner/s.

Step 2: During this step index client is encouraged to elicit all his/her sexual partner/s or biological child/ren or needle sharing partner/s. Contact elicitation form is completed for each listed sexual partner/s or needle sharing at this stage.

Step 3: At this stage, assessment of intimate partner violence is done. This includes physical, sexual, social or physiological harm. The main purpose is to ensure that no harm comes to index client because of index testing services.

Step 4: At this stage, the method that was preferred by the index client to reach and provide HIV testing services to the sexual partner/s or needle sharing or child/ren is used.

Step 5: At this stage, all elicited contacts are identified and tested.

Step 6 & 7: At these stages, index-testing outcomes is/are linked appropriately basing on the HIV testing.

It is estimated that over 14.5 million people living with HIV in the world remain undiagnosed (UNAIDS, 2017). Furthermore, WHO African region report on global update on HIV treatment shows that expanding testing strategies through clinical services and supporting testing of partners and their family members can increase the number of people to know their status (WHO, 2016). Index client HIV testing is one of those strategies that have shown to be effective in identifying undiagnosed PLHIV and link them to care. For example, several studies have shown that index partner testing can increase uptake of HIV testing services, identify partner with undiagnosed infection with the yield ranging from 35-65%, and with no report of serious intimate partner violence (Cherutich *et al.*, 2018; Kahabuka *et al.*, 2017; Henley *et al.*, 2013; Brown *et al.*, 2011;Rosenberg *et al.*, 2015)

Another study conducted by (Brown *et al.*, 2011) have shown that index client testing can contribute up to 64% of identified positive cases. Moreover, in Tanzania, index testing with fidelity have proved to be effective strategy for identifying undiagnosed individuals and link them to care. For, example, PEPFAR quarterly report of October to December 2018 shows that 15% of HIV positive cases were identified through index testing. Despite the fact that this strategy has proved to be effective in positive cases identification, the uptake remains low. For example, Mwanza is one the regions where HIV infection has

appeared to increase drastically from 4.2 % (THMIS, 2012) to 7.2 % (THIS, 2016) but PEPFAR quarterly report of October to December 2017 showed that, only 2.7% of clients enrolled in Ilemela Municipal Council had their index tested. Therefore, understanding the factors hindering uptake of index testing is important.

Several studies that were done in Namibia and Mozambique revealed that, index testing can increase HIV testing among young men and this is important particularly at this time when Tanzania is struggling to reach men. The study conducted by (Kaufman *et al.*, 2015) showed that 46% of males in Tanzania reported to have never tested for HIV.

Furthermore, studies conducted in Kenya and Vietinam revealed that index testing is an effective strategy among key populations (Vu *et al.*, 2019; Cherutich *et al.*, 2018)

Moreover, studies have also revealed that family index testing can increase the number of infected children to be identified earlier, identify those who are healthy and living with HIV hence better health outcome and can improve cases identification (Cohen, Lungu and Oosterhout, 2010; Obermeyer and Osborn, 2007). Furthermore, studies have shown that most infected children would die before reaching five years of age if they are not diagnosed early enough and put on treatment (UNAIDS, 2015).Therefore index testing will play vital role of serving their lives by identifying them earlier; hence put them on treatment.

Some studies have explored factors associated with index client HIV testing, however, have been done in developed countries and very few from sub-Saharan Africa including Tanzania.

Index client HIV testing is influenced by both structural and individual factors.

2.1 Individual factors

An attitude of the individual be positive or negative can affect the uptake of certain services. For example, the study conducted by (Kakoko *et al.*, 2006) have shown that positive attitudes towards people infected with HIV or living with AIDS have been associated with a willingness to undergo HIV testing and adhere to antiretroviral therapy. Furthermore, fear of negative reaction from the partner when notified to come for HIV testing by their sexual partner/s have been reported in several studies. For example, female

clients expressed concern that their partner may react violently on being notified to for HIV testing (Maman *et al.*, 2010);(Alam *et al.*, 2010). Studies have also shown that they are several factors that can affect client's attitude and choices of partner notification methods. For example, the study conducted by (Dalal, Johnson, Fonner, Caitlin E Kennedy, *et al.*, 2017) have shown that index clients preferred provider notification as their notification method because it shift the notification burden from away from the index client and allow them to maintain their anonymity from notified partner/s .

Index HIV client testing can improve case identification particularly in males. For example, the study conducted in Malawi showed that Index testing with focused strategy can improve cases identification particularly in males and children (Licy Khongonyowa, Erik Schouten, 2016)

The study conducted in Tanzania by (Charles *et al.*, 2009; Meremo *et al.*, 2016) have shown that age, education, economic status, proximity to clinics, availability of supplies, poor physical facilities, long waiting times, discriminatory and the attitudes of health care providers were associated with low utilization of HTC services.

Gender has also appeared to influence uptake of HIV testing services. Gender power imbalance can influence index HIV testing. For examples, studies have shown that in Africa, women have little ability to negotiate for safer sex as many men refuse to use condom despite the fact that men may have multiple sexual partners and this influences women's ability to seek for HIV testing services (Obermeyer and Osborn, 2007;Pulerwitz *et al.*, 2010).

2.2 Structural factors

Health system factors such as type of facility, hours of operation, availability of testing facilities , workload of the health care providers and knowledge has been some of the challenges affecting uptake of HIV testing services. For example, in the study conducted in Pacific on male involvement in reproductive, maternal and child health, found that lack of knowledge or insufficient training of the service providers affected uptake sexual and reproductive health services (Davis *et al.*, 2016).

Also a cross-sectional study conducted in three countries of Kenya, Mozambique and Côte d'Ivoire that focused on identifying facility level factors hindering prevention of mother to child transmission revealed that, low or high patient volume and infrastructure were associated with the higher likelihood of receiving HIV testing and ARVs uptake services (Rustagi *et al.*, 2017)

Furthermore, several studies in Tanzania and elsewhere in sub-Saharan have shown that, factors that contribute limited uptake of HIV testing services in Tanzania and Africa include physiological, cultural, economic among others can contribute to uptake of HIV testing services. Studies have also shown that, making testing options more attractive, convenient and aligned with population preferences such as couple testing, mobile testing, homebased testing and self-testing can influence the uptake of HIV testing (Bateganya, Oa and Sm, 2010; Becker, Mlay and Schwandt, 2010).

Another study conducted in Iringa Tanzania on barriers and facilitators of retention in HIV care and treatment services showed that lack of knowledge, misperception on treatments, difficulties in reaching the health facility or clinics were among the barriers that affected the uptake of HIV services (Tomori *et al.*, 2014). Moreover, the study done by (Meremo, Ngilangwa, *et al.*, 2016) showed that, long waiting time,poor physical facilities, lack of treatment, giving bribes to health care providers, social segregation were barriers hindering uptake of HTC services in Tanzania.

Studies have also shown that culture can influence index testing. Culturally sanctioned gender roles have been reported to be associated with sexual violence against women (Maman *et al.*, 2010)

The physical environment in terms of privacy where the services are provided can influence the uptake of index testing services. Study conducted in Douala Cameroon revealed that lack of privacy and confidentiality could affect HIV testing services (Ngangue, M. Gagnon and Bedard, 2017). Similar studies were reported by (Kwapong *et al.*, 2014) wereby lack of information, perception of privacy and confidentiality, poor relationship with health staff and waiting time were among the barriers of HIV testing.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

The study used descriptive cross-sectional design, which aimed at collecting information on index HIV testing and counselling at one point in time. Quantitative methods were used to collect information on factors associated with index client HIV testing and was conducted between the months of August and September 2018.

3.2 Study area

The study was conducted in Ilemela Municipal Council in Mwanza city.Selection of Ilemela Municipal Council was done purposefully. Ilemela Municipal is one of the two municipals of the city of Mwanza. It is bordered to the North and West by Lake Victoria, to the East by Magu district and to the South by Nyamagana Municipal Council. According to the 2012 census, Ilemela Municipal has a population of 343,001 people with 164, 718 being males and 178,283 being females. The municipality covers an area of 255 square kilometres, with a population density estimated at 1,347 per square kilometres. According to UNAIDS, (2014), and National Spectrum estimate for 2014, there are about 12,764 people leaving with HIV who are 15+ years and older and has a HIV prevalence of 5%. The municipality has forty-eight (48) health facilities with twenty providing care and treatment services. The model of health services delivery is based on preventive, promotive and curative care. Most of its residents depend on natural resources for income and live-hood with major economic activities being commerce and trade, fishing and subsistence farming.

Diagram 1: Map of Ilemela Municipal Council and distribution of health facilities

3.3 Study population

Participants of this study were HIV positive clients receiving care and treatment services at Ilemela Municipal Council in Mwanza.

3.4 Inclusion and Exclusion criteria

3.4.1 Inclusion criteria

- 15 years or older
- Have been enrolled into the CTC for 6 months or more
- Currently have a sexual partner or living with a biological child
- Provides an informed consent

3.4.2 Exclusion criteria

- Too sick/non-ambulatory
- Have cognitive impairment and not able to provide informed consent.

3.5 Sampling method and Sample size estimation

3.5.1 Sample size estimation

Sample size (n) for PLHIV was calculated from the following formula,

$$n = \frac{Z^2 P\,(100P)}{e^2}$$

Where;

n = Minimum Sample size

Z = Standard normal deviation at 95% confidence level, equal to 1.96

P = 28%, the prevalence of pregnant women whose partners tested for HIV in Tanzania (data from national DHIS2, March 2017)

e =Margin of error, which is equal to 5% (0.05)

$n = (1.96)^2$ X 28 (100-28)/5^2 = 310, after applying design effect of 1.1, the sample size was 310*1.1 = 341 people living with HIV, a 3% non-response was assumed (341x100/100-3) making the final sample of 352. The design effect was set at 1.1 because we expected minimal variation between facilities.

3.5.1 Sampling method

Ilemela Municipal Council was selected purposefully. Two stage cluster sampling method was used to recruit study participants from selected health facilities. We operationalized probability-proportional to size sampling by first stage listing all CTCs in Ilemela MC (n=20) followed by selecting 30% of CTCs listed using simple random sampling. The number of participants from each CTC was determined basing on proportion contribution of the CTC to the overall CTC attendees in all selected. A mathematical presentation of the approach would be percentage (%) contribution of the CTC * number of attendees in that CTC; where percentage (%) contribution is the number of attendees in that CTC /total attendees in all selected CTCs.

Simple random sampling technique using table of generated random numbers from Stata software using sample command was used to identify participants for interview from each CTC. The sampling frame was generated basing on those who attended the clinic in that day. Individuals who did not attend were included when they came after routine procedures within the health facility to address lost to followup were instituted. The names of participant were obtained from appointment list at CTC each day of the clinic after they had showed up to the clinic and their files sorted out and presented to the clinicians or nurses. Therefore, sampling frame was generated from the list of those who attended the clinic. We acknowledge that this approach may underestimate our association as those who do not attend the clinic consistently are the ones who may be more challenged in bringing their spouses and /or children for testing.

3.6 Data Collection method and tools

3.6.1 Data collection procedures

Eligible participants were randomly selected from appointment list on day of the clinic visit for those who showed up and invited to participate in the study using a pre prepared script. Those who expressed a willingness to participate were asked to provide a written or thumb print informed consent after explaining the purpose of the study. Face-to-face interviews using a questionnaire was administered in a private room at the CTC after being attended by the clinician. The questionnaire was administerded by trained interviewers/RA who was fluent in Swahili language. The questionnaire had been developed in English and

translated into Swahili and then back translated to English to ensure that all intended aspects were captured. The interview took about 20-30 minutes.

To ensure confidentiality, each participant was assigned a unique identification number that was randomly generated using a sequence of numbers with a two-letter facility prefix. E.g. IG001, where IG stands for Igoma Health Center. During the interview, the interviewer verified self-reported information on index testing and what was documented in the participant file using a data extraction sheet (Appendix 5). Discrepancies between self-reported and what is documented in the participant file was noted and interviewers referred participants with discrepancies back to HTC counselors at the facility for corrections.

3.6.2 Data collection tools

A questionnaire with eight sections was developed to collect the information on factors associated with index client testing. The first section was for facility information including name and level of facility. The second section was to screen for eligibility of the participant. This was mainly looking at the age of participant, date of enrollment into CTC(at least six months), have sexual partner and have been living together for the past six months or biological child and able to provide consent before they could participate in the study. The third section was about demographic characteristics of respondents. Questions about age, sex, occupation, marital status, education, and parity were collected here**.** The fourth section was aimed at assessing the knowledge about index testing. A total of seven items were developed and used as a composite variable on knowledge about index testing. The fifth section was for assessment of structural factors associated with index testing which included questions on privacy environment at the health facility, location, level of the health facility, availability of supplies, IEC/ BCC materials for index HIV testing, prioritization of index clients when they came for testing and mode used to notify index clients to come for testing. The sixth section was on individual level factors that may influence index testing such as the participants experiences with care delivery, disclosure, altitude of the participant towards index testing, level of knowledge, occupation, sex and marital status, The seventh section was about index clients' attitude towards HIV testing of spouses/child (ren) and the last (eighth) section was for verification and documentation of index testing by extracting the participants CTC-2 records on index testing.

3.6. 3 Training of Research Assistants

Two research assistants were trained on data collection procedures, the research protocol, ethical issues, confidentiality, familiarization with questions in the questionnaire and other data collection considerations before commencement of data collection. The research assistants also conducted the pre testing of the questionnaire before they embarked in data collection to enhance their skills

3.6.4 Variables

3.6.4.1 Dependent (outcome) variables

The primary outcome for the study was the index-client's partner and /or child testing for HIV (coded as 'Yes' or 'No'). This was ascertained using two questions 1) self-report and 2) verified in the CTC database on whether partner or child (ren) were tested for HIV. In a situation where discrepancy was noted, the participant record was considered as the "truth". The variable was dichotomized into, 1 for those who correspond to "Index tested"; and 0 for those whom "Index not tested".

$$\text{Index testing status} = \begin{cases} 1 \text{ if sexual partner or child(en) verified tested for HIV} \\ 0 \text{ if sexual partner or child(en) verified not tested for HIV} \end{cases}$$

3.6.4.2 Independent (determinant) variables

Independent variables were grouped in several groups,

Socio-demographic characteristics (age of respondents, sex of respondents, number of sexual partners, marital status, occupation, highest education, having a child, length of relationship and occupation of sexual partner).

Characteristic related to index testing (preferred place of testing, knowledge about index testing, attitude towards index testing and challenges to bring index, sources of information, perception on suitable environment of testing index, Availability of IEC/BCC materials for index testing, method used for index notification).

The other group was that of personal factors that involed disclosing of partners and providing their contacts (who disclosed HIV status, who convinced sexual partner to come for testing, reaction of sexual partner after invited for testing, place of partner tested, who

advised index client to bring partner, approached used for counselling, and method of notification used).

3.6.4.2.1 Assessment of Knowledge

Participants were accessed for knowledge on index HIV testing using a set of seven questions. Each question was given a weight of one point. The total summative score for the knowledge was computed (Range 0 – 7). Those who scored 50% or more were categorized as having "adequate knowledge" while those who scored below 50% were categorized as having "inadequate knowledge".

3.6.4.2.2 Assessment of altitude

Attitude was assessed using a Likert scale. A total of seven statements was used to assess the participant's attitude towards index HIV counseling and testing. Each statement had five options, giving a total score of 35. All questions carried equal weight and were grouped into 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. Analysis recoded all items to ensure that they are in the appropriate direction. To ease interpretation, the mean score was computed and those at and above the mean was categorized as having positive attitude while those below the mean were categorized as having negative attitude.

3.6.5 Pre-testing of data collection tools

The questionnaire was pre-tested for face validity of the questionnaire to ensure it enquires about the intended concepts in a meaningful manner. Collection process ascertain whether the proposed approach is feasible as well. In this study, pretesting of the questionnaire was done in health facilities of Nyamagana Municipal council (Makongoro and Mwananchi hospitals).

3.7 Ethical consideration

Ethical clearance was obtained from the Research and Publication Committee of Muhimbili University of Health and Allied Sciences. (*Appendix 8*) Permission to conduct the study in Ilemela municipal council CTCs was also obtained from District Medical Officer and in-charges of the respective facilities of Buzuruga health Center, Kirumba dispensary, SDA Pasiansi health center, Tumaini dispensary, Pasiansi dispensary and Karume health center.

In addition, written/thumb print informed consent was obtained from each study participant before enrollment into the study (*Appendix 3*). There was no or minimal harm expected to the participants by participating in the study and none of the participant was below 18 years. However, The National Consolidated Guidelines for HIV Testing Services in Tanzania: Third Edition; NACP; 2019 guidance on the age of consent and procedures to have an HIV test in accordance with the Tanzania HIV and AIDS Prevention and Control Act (2008) and its regulations that are current under discussion for policy revision. The Act states that: Individuals above 18 years of age and those below 18 years but married, pregnant, sexually active, or otherwise believed to be at risk for HIV infection, may give consent to access HTS.

There was no direct benefit or compensation to participants for participating in the study; however, participants had the opportunity to learn more about index testing, its associated benefit to their families and their country. An informal education session was conducted with all participants at the end of the interview to eliminate any misconceptions as well as encourage participants to bring in their spouses and/or children for testing. More clarifications on how this was achieved is provided in the text. Explanations on the benefits of bringing spouses and/or children for testing was done after the interview as indicated above. We believe this approach had minimal effect on our findings.

Participation was voluntary and participants had opportunity to decide to participate or not to participate or to withdraw from the study at any time they felt to do so and were informed in case they opted to do that there were no any consequences on the services they receive or will receive from the health facility.

3.9 Data Management Plan

3.9.1 Data entry

Data was entered into an electronic database using Epidata version 3.1 software.

3.9.1 Data quality assurance

Data was checked every day for completeness and accuracy, before being entered into the database. In order to maintain confidentiality, the study participants were assigned a unique identification number, which was linked to their CTC numbers. This information was kept

under lock and key in cabinet in the Principal Investigator's office and only the principal investigator (PI) had access to it.

Futhermore, the study employed several techniques to address threats to validity and reliability. These included verification of the self-reported information with what was documented in the patient CTC 2 file, random selection of participants from selected CTCs and the number of the participants from each selected CTCs was based on proportion to size.

In addition, multiple logistic regression analysis was done to control for confounders and determine the contribution of independent determinants.

3.9.2 Data analysis

Descriptive statistics was used to summarize the data - proportions were used to summarize categorical variables; and mean and standard deviation used for continuous variables. Data analysis considered clustering which was done at the facility that assumed that there is homogeneity within the selected CTCs and the probability of selecting the sample from each CTC is the same. Multiple logistic regression analysis was done to control for potential confounders and determine the contribution of independent determinants of index client testing. Variables were entered in the multiple logistic regression model if they had a value of $p \leq 0.2$ in the bivariate analysis. Odds ratio and their 95% confidence intervals (CIs) are reported. Significance was set at alpha $\leq$ 5%. Analysis was done using "SVY" command in Stata SE version 15.1.

Knowledge on index HIV testing was computed using a set of seven questions each with one point. Those who scored 50% or more were categorized as having "adequate knowledge" while those scoring below 50% were categorized as having "inadequate knowledge"

3.10 Dissemination Plan

The research findings will be presented at Muhimbili University of Health and Allied Sciences (MUHAS), Ministry of Health, Community Development, Gender, Elderly and Children/NACP, PEPFAR Tanzania and report shared with Ilemela Council Health Management Team i for improving HTC services.

CHAPTER FOUR

4.0 RESULTS

4.1 Background Characteristics of the participants

A total of 321 participants (Response Rate =91.2 %; (321/352) responded. The main reason for non response was due lack of time to participate and few asked if there were incentives to participate and when told no incentives decided to decline.

Table 1 below shows frequency distribution of demographic and individual characteristics. The index clients' ages 20 to 24 years were 14 (4.36%) while those ages 25 to 29 years were 58 (18.07%). Those ages 30 to 34 years were 64 (19.94%) while those ages 35 to 39 years were 73 (22.74%). Those ages 40 to 44 years were 43 (13.4%) while 27 (8.41%) were aged 45 to 49 years and 42 (13.08%) were fity years and above. There were 44.2% (142/321) male participants. About 70.7% (227/321) were married, 65.7% (211/321) reported to have primary education, while 13.7 % (44/321) reported never to have gone to school. About 25.9% (83/321) run small businesses, followed by peasant 21.2% (68/321) and unemployed 22.1% (71/321).

Table 1: Frequency Distribution of Demographic and individual characteristics of study participants (N = 321)

Individual Factors	Number	Frequency
Age group of index client, years*		
20-24	14	4.36
25-29	58	18.07
30-34	64	19.94
35-39	73	22.74
40-44	43	13.4
45-49	27	8.41
50+	42	13.08
Sex of index client		
Male	142	44.2
Female	179	55.8
Marital status		
Single	43	13.4
Married	227	70.7
Separated	51	15.9
Occupation		
Unemployed	71	22.1
Employed	51	15.9
Businessman/woman	83	25.9
Peasant	68	21.2
Housewife	48	15.0
Education level		
No formal education	44	13.7
Primary education	211	65.7
Secondary education	66	20.6
Knowledge about Index testing		
Inadequate Knowledge	73	22.7
Adequate Knowledge	248	77.3

*Age in years

Table 2 shows distribution of index testing by demographic and individual characteristics. Marital status, occupation, education level, knowledge, age and attitude are significant predictors of individual factors of index testing. Sex was not significant predictor of index testing.

Table 2: Distribution of index testing by demographic and individual characteristic

		Index testing		
Variable	**Category**	**No (%)**	**Yes (%)**	**P value**
Age group of index client, years*				
	20-24	10(71.4)	4(28.6)	
	25-29	37 (63.8)	21(36.2)	
	30-34	32(50.0)	32(50.0)	
	35-39	36(49.3)	37(50.7)	0.162
	40-44	25(58.1)	18(41.9)	
	45-49	14(51.9)	13(48.2)	
	50+	30(71.4)	12(48.2)	
Sex of index client	Male	87 (61.3)	55 (38.7)	
	Female	97 (54.2)	82 (45.8)	0.203
Marital status	Single	30 (69.8)	13 (30.2)	
	Married	119 (52.4)	108 (47.6)	
	Separated	35 (68.6)	16 (31.4)	0.022
Occupation	Unemployed	52 (73.2)	19 (26.8)	
	Employed	31 (60.8)	20 (39.2)	
	Businessman/woman	52 (62.70	31 (37.4)	
	Peasant	33 (48.5)	35 (51.5)	
	Housewife	16 (33.3)	32 (66.7)	0.001
Education level	No formal education	25 (56.8	19 (43.2)	
	Primary education	129 (61.1)	82 (38.9)	
	Secondary education	30 (45.5)	36 (54.6)	0.08
Knowledge about Index testing	Inadequate Knowledge	47 (73.4)	17 (26.6)	
	Adequate Knowledge	137 (53.3)	120 (46.7)	0.004
Attitude towards Index testing	Negative	110 (75.9)	35 (24.1)	
	Positive	74 (42.1)	102 (58.0)	0.001

4.1.3 Distribution of perceived structural factors

Table 3 shows distribution of index testing by structural factors among clients attending care and treatment clinics at Ilemela municipal council. Those who read IEC material about index testing were 194 equivalents to 60.4%. About 278 (86.6%)reported that they thought privacy as a factor of successful index testing and 174 (54.2%)reported to prefer partner notification while 94 (29.3%) healthcare worker notification and 53 (16.5%) reported to prefer assisted partner notification .Two hundred and eighteen (67.9%) reported giving priority to index client as a factor of successful index testing

The privacy, method of notification, giving priority to the index client when they show up to the testing sites and supplies are significant predictors of structural factors of index testing. Reading material about index testing was not significant predictor of index testing , table 3 below

Table 3: Distribution of Index testing by structural factors among index clients attending care and treatment clinics at Ilemela municipal council

		Index testing		
Structural factors	**N**	**No (%)**	**Yes (%)**	**P value**
Ever read materials about Index testing				
Yes	194	109 (56.2)	85 (43.8)	
No	127	75 (59.1)	52 (40.9)	0.611
Consider privacy as factor to index testing				
Yes	278	150 (54.0)	128 (46.0)	
No	43	34 (79.1)	9 (20.9)	0.002
Method of notification about Index testing				
Partner notification	174	117 (67.2)	57 (32.8)	
Health care worker notification	94	47 (50.0)	47 (50.0)	
Assisted partner notification model	53	20(37.3)	33 (62.3)	0.001
Given priority when brought Index for testing				
Yes	218	154 (70.6)	64 (29.4)	
No	103	30 (29.1)	73 (70.9)	0.001
Lack of supplies a barrier for HIV testing				
Yes	68	13 (19.1)	55 (80.9)	
No	253	171 (67.6)	82 (32.4)	0.001

4.2 Factors associated with Index Testing

4.2.1 Multivariate analysis of factors associated with Index testing

Individual and structural factors that were seen significant **(*p*-value <0.2)** were taken for the multiple logistic regression analysis as shown in **table 4 below**

Individual factors

The main individual factors associated with index testing after adjusting for potential confounders were, marital status, main economic activity, attitude towards index testing and knowledge about index testing were still associated with successful index referral testing and counselling.

After controlling for other factors, the multiple logistic regression model for those who reported who were married had 3.01 higher odds of successful index testing as compared to those who single/separated with 3.01 [aOR: 3.01, (95%CI:1.33 - 3.12)]. Those who reported farming and housewife as their main economic activities had 3.28 and 3.79 higher odds of successful index testing as compared to those reported unemployed, employed or businessman with [aOR: 3.28, (95%CI: 1.40 – 7.72)] and with [aOR: 3.79, (95%CI: 1.42 – 10.15)] respectively. Those with positive attitude towards index testing had 3.74 higher odds of successful referral as compared to those with negative attitude [aOR: 3.74, (95%CI: 2.07 – 6.74)]. Those with adequate knowledge about index testing had 2.22 higher odds of having successful index referral testing as compared to those with inadequate knowledge [aOR: 2.22, (95%CI: 1.16 – 4.25)].

Level of education did not show any significant association towards index testing at multiple logistic regression model.

Structural factors

The main structural factors that were associated with index testing after adjusting for potential confounders were priority testing when index client brought their index and model used to notify the index client to come for testing

After controlling for other factors, the multiple logistic regression model for those who reported were given priority when brought their index had 3.43 higher odds of successful referral of index testing compared with those that reported were not given priority [aOR:

3.43, (95%CI: 1.67 – 7.04)]. Those reported using health care workers for partner notification had 1.61 higher odds of successful referral as compared to these with partner notification [aOR: 1.61, (95%CI: 1.08 – 4.16)]. Those reported using assisted partner notification had 2.92 higher odds of successful referral as compared to those with partner notification [aOR: 2.92, (95%CI: 1.34 – 6.39)]. Those reported lack of supplies as a barrier to index testing had 0.65 lesser odds of successful referral of index testing compared with those who reported lack of supplies was not a barrier [aOR: 0.35, (95%CI: 0.14 – 0.87)].
At multiple logistic regression model, age, privacy at the health facility did not show any significant association with index testing.

Table 4: Multiple logistic regression models of index testing and individual and structural factors among clients attending care and treatment clinics at Ilamela

Variables	N	Crude OR[±] 95%CI[§]	Adjusted OR 95%CI
Age of index client, years			
20-24		Reference	Reference
25-29		1.42 [0.40 - 5.09]	1.26 [0.27 - 5.89]
30-34		2.50 [0.71 - 8.80]	1.73 [0.38 - 7.89]
35-39		2.57 [0.74 - 8.94]	1.97 [0.44 - 8.84]
40-44		1.80 [0.49 - 6.66]	1.95 [0.41 - 9.29]
45-49		2.32 [0.58 - 9.26]	1.16 [0.22 - 6.22]
50+		1.30 [0.26 - 3.81]	1.28 [0.13 - 3.13]
Sex of index client			
Male	142	Reference	Reference
Female	179	1.34 [0.85 – 2.09]	1.50 [0.83 – 2.69]
Marital status			
Single	43	Reference	
Married	227	2.09 [1.04 - 4.22] ***	3.01 [1.33 - 3.12] **
Separated	51	1.05 [0.44 – 2.54]	0.97 [0.17 - 5.57]
Main economic activity			
Unemployed	71	Reference	Reference
Employed	51	1.77 [0.82 - 3.81]	1.82 [0.72 – 4.60]
Businessman	83	1.63 [0.82 – 3.25]	1.42 [0.63 – 3.21]
Peasant	68	2.90 [1.43 - 5.89] ***	3.28 [1.40 – 7.72] **
Housewife	48	5.47 [2.46 - 12.15] ***	3.79 [1.42 – 10.15] **

Highest education level			
Never been to school	44	Reference	Reference
Primary education	211	0.84 [0.43 – 1.61]	0.74 [0.26 – 2.14]
Secondary education	66	1.58 [0.73 – 3.41]	1.82 [0.46 – 7.60]
Knowledge about Index testing			
Inadequate Knowledge	64	Reference	Reference
Adequate Knowledge	257	2.50[1.49 – 4.22] ***	2.22 [1.16 – 4.25] **
Attitude towards Index testing			
Negative	145	Reference	Reference
Positive	176	4.33 [2.67 – 7.02] ***	3.74 [2.07 – 6.74] ***
Ever read materials about Index testing			
Yes	194	Reference	NA
No	127	0.89 [0.56 - 1.40]	NA
Privacy important to index testing			
No	278	Reference	Reference
Yes	43	0.31 [0.14 - 0.67] **	0.46 [0.18 – 1.18]
Method of notification about Index testing			
Partner notification	174	Reference	Reference
Health care worker notification	94	2.05 [1.23 - 3.43] **	1.61 [1.08 – 4.16] *
Assisted partner notification model	53	3.39 [1.79 – 6.41] ***	2.92 [1.34 – 6.39] ***
Given priority when brought Index for testing			
Yes	218	Reference	Reference
No	103	5.89 [3.49 – 9.80] ***	3.43 [1.67 – 7.04] *
Lack of supplies as barrier for index testing			
No	68	Reference	Reference
Yes	253	0.11 [0.05 - 0.22] ***	0.35 [0.14 – 0.87] *

± Odds Ratio

§ 95% Confidence Interval

* P value 0.05; ** P value 0.01; *** P value 0.001

CHAPTER FIVE

5.0 DISCUSSION

The main objective of this study was to identify factors that influence index testing in Ilemela Municipal Council. The study showed that, marital status, social economic activity, attitude towards index testing and knowledge about index testing are individual factors associated with index testing. Furthermore, method used to notify the index client to come for testing and how they are treated when they show up to the clinic/facility and supplies are among the structural factors that were associated with index testing.

5.1 Individual factors associated with index testing

The index client had age range between 20 to 50 years.This is similar with most HIV studies age range in Tanzania (Kilembe *et al.,* 2015;, Kahabuka *et al.,* 2017)). Moreover, a study done in Arusha Tanzania shows that participants aged at least 18years and above were more likely to undergo HIV testing than those who were aged less (Sanga *et al.,* 2015). Also Seven percent of Tanzanian adults age 15-49 are infected with HIV with prevalence among women being higher (8 percent) than among men (6 percent) (United Republic of Tanzania Ministry of Health and Social Welfare, (2017)

The study also found that sex of index client was seen not associated with a successful index testing. The possible reasons of our finding is that there is a lot sensitization going on about index testing across the gender with assisting those who are HIV positive to reach their index as well as the new strategies for reaching men such as men's corner, moonlight testing among others that were introduced. However the study done in Njombe Tanzania for sexual partner show that sex was associated with index testing were female had lesser odds of successful referral (Kahabuka *et al.,* 2017) and in the cases of clients testing studies have shown that female access more HIV services than male (Weiser *et al.,* 2006)

The study found that marital status was associated with index testing. This could be due to couple counselling and marital relationship. There are several strategies that has been put in place to encourage couple counselling such as giving priority to access the services to those who show up to the clinics with their spouse or introduction of the family clinics. Similar finding has been reported in Njombe Tanzania were married respondents had higher odds

of successful referral as compared to those single(Kahabuka *et al.*, 2017). Another studies conducted in South Africa revealed the same findings (Shisana *et al.*, 2004)

The study found out that the main economic activity was associated with index testing. We observed that those who reported were farmers and housewife had a strong association (three folds increase; farmer 3.28 [1.40 – 7.72] and housewife 3.79 respectively) with successful index testing when compared with those who reported employed or business man/woman. Studies conducted in Kenya shows that women have high health seeking behavior than men and being married/housewife was associated with an increased risk of HIV infection (Hargreaves *et al.*, 2002). Therefore, housewives/women tend to visit health facilities more frequently therefore easy access to HIV testing services. Another study conducted in Uganda shows that HIV testing is high among women as compared to men and this is attributed to receiving tests during antenatal visits (Kasirye, 2013). The same finding were reported by (Weiser *et al.*, 2006). On the other hand, housewife and farmers are considered as people with low income and studies have shown that people with low income are at high risk of developing health problems therefore seeking for health services may be seen often however, in this study we did not ask about the income (Winkleby *et al.*, 1992)

The study revealed that the level of education was not associated with index testing. This might be due to the fact that, majority of the study participant had primary education and there are individuals who complete primary education who cannot even read or write their names. However, this finding is in agreement with studies conducted in Tanzania, Zimbabwe and four cities of Cameroon, Kenya, Zambia and Benin, which found no significant relationship between education and HIV testing (Longin R.Barongo, Martien W. Borgdorff, 1992).

In this study, the results revealed that, knowledge about index testing was associated with successful index testing. Most participants reported their major source of information about index testing were the healthcare providers as seen in Appendix 7. This finding is similar with the studies conducted in Dar es Salaam, Tanzania, Botswana and Nigeria which shows that knowledge of partner's HIV status were significant predictors of HIV testing for index clients themselves (Conserve *et al.*, 2012; Weiser *et al.*, 2006; 'Lépine , A ., Terris-

Prestholt , F ., & Vickerman , 2015) . Morever, the study conducted by (Gebremedhin *et al.*, 2018) in Ethiopia reveled that knowledge is among factors associated with HIV testing.

Most of the participants had positive attitude towards index testing. This means that if we capitalize on promoting positive attitude by focusing on those clients already in care, we will be able to reach epidemic control. Similar finding has been reported by (Deblonde *et al.*, 2010) which concluded that perception of patients on services is critical to improve effectiveness of HIV testing and counselling. In addition , another study conducted in Tanzania about HIV testing preferences revealed that positive attitude is a motivator towards diverse testing options (Njau *et al.*, 2014). Furthermore, the study conducted in Honduras outlined that having positive perceptions of confidentiality, test accuracy, and self-awareness of HIV were associated with HIV testing (Hickey *et al.*, 2013).

5.2 Perceived health facility factors associated with index testing

The study also accessed the health facility structural factors associated with index testing.
The privacy environment at the health facility was not found to be associated with successful index testing. This could be due to the improvement that has been made at the facilities or testing points by having dedicated space for providing HIV testing services and ongoing scale up of linkage case management of identified individuals although there is still a room for improvement. The study conducted in Ghana showed that clients and potential users of services were uncomfortable with the quality of care given by some health workers which hinder uptake of services (Dapaah and Senah, 2016). The study also revealed that clients preferred their index to be tested at health facility than outreach. However for increase of awareness of testing, studies have shown that clients prefer home based testing than facility based testing as pointed out in a systematic study that homebased testing could substantially increase awareness of HIV status in previously undiagnosed individuals in sub-Saharan Africa, (Sabapathy *et al.*, 2012). This could be due to the fact that stigma is still a big challenge that why most participants preferred facility testing.

Assisted partner and healthcare worker notification was found to be associated with index testing. This could be explained by the fact that participants believe that healthcare providers are more knowledgeable and the ongoing scale up of linkage case management. On the other hand, this could be related to issues around disclosure due to fear or stigma.

This accord with the systematic study done by WHO were they concluded that assisted partner notification improved partner testing and diagnosis of HIV- positive partners, with fewer reports of harm (Dalal, Johnson, Fonner, Caitlin E. Kennedy, *et al.*, 2017). Similar studies done in Tanzania and Malawi found that clients preferred provider facilitated notification (Kamanga *et al.*, 2015; Kahabuka *et al.*, 2017; Buhikire *et al.*, 2018). Another study conducted by (Adams, Carter and Redwood-Campbell, 2015; Goyette *et al.*, 2016) showed that assisted partner tracing were more effective than passive referral in identifying new cases of HIV in many settings.

Prioritization of the index client when they show up to the clinics or testing point was found to be associated with index testing. Usually people will prefer to go or motivated to seek services if the feel they are valued or respected. When individuals get motivated, they build trust, friendship and openness and therefore it becomes easy to convince them to bring their spouses or children. Introduction of linkage case management may have played a big role in identifying index clients, linking and retaining them on care.Studies shows that friendly services have been neglected scenario in health facilities whereby the focus has been on accessibility, staff characteristics and competency, and confidentiality and privacy but not focusing on friendly HIV services yet this has a major role on the uptake of this kind of services (Mazur, Brindis and Decker, 2018). Also staff-patient communication was report as part of friendly services and could affect uptake of HIV testing (Wung, Peter and Atashili, 2016). Friendly services especially for youth have been limited to big cities in sub-Saharan Africa as pointed by (Geary *et al.*, 2014). Lack of friendly services have led to denial of services to women and children and hence leading to delayed diagnosis and treatment (Merten, Ntalasha and Musheke, 2016). Therefore, capitalizing on friendly services, providing priority to those seeking for HIV testing services and scale up of linkage case management we will be able to reach undiagnosed PLHIV.

This study also revealed that supplies were associated with index testing. Over 65% of the participant reported lack of supplies as a barrier to index testing. This finding accords with study conducted in Cameroon that shows lack of supplies and equipment for HIV testing and counselling was among the factors that hinder the quality of HTC services and (Ngangue, M. P. Gagnon and Bedard, 2017). Similar findings were also obtained in the studies conducted in South Africa on barriers and facilitators associated with HIV testing

which revealed same findings (Mohlabane *et al.*, 2016). Therefore, in order to ensure clients are getting testing services when they need them, proper planning and forecasting of supplies is need.

5.3 Study Limitations

This study relied on self-reported information from index clients enrolled in care and treatment clinics in Ilemela Municipal Council to predict the likehood of the index contact/s to be tested; Self-reported information is flawed by a number of information bias such as social desirability and recall. However, we believe that the good rapport that we establish, the simple language used in the questions and the sequencing of questions may have limited their influence on our findings and hence our conclusions are valid.

The design effect was also set at 1.1 with the assumption that there was minimal variation between facilities however variation may be exesting between the health facilities.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The study concluded that, marital status, main economic activity, attitude towards index testing and knowledge about index testing are individual factors that are associated with index testing. The model used to notify the index client, priority testing when index client brings their contacts to be tested are structural factors are associated with index testing

6.2 Recommendations

- The study also revealed that on the main economic activity, income particularly farmers and housewife had almost three-fold increase in odds (farmer 3.28 [1.40 – 7.72] and housewife 3.79 [1.42 – 10.15]) of successful referral of index testing as compared to other economic activity. Therefore, more studies are needed to find out mechanisms of how low income affect index testing
- The study found that most participants preferred assisted partner or health care notification as their preferred modal of notification. This shows that index client has trust on health care providers; therefore, capitalizing on this will enable us to reach those undiagnosed.
- Priority should be given to the index clients when they bring their contacts for testing as the way to motivate them.
- The study also showed that supplies is one of bottleneck hindering index testing, therefore ensuring constant availability supplies is critical to avoid service interruption.

REFERENCES

1. Adams, O. P., Carter, A. O. and Redwood-Campbell, L. (2015) 'Understanding attitudes, barriers and challenges in a small island nation to disease and partner notification for HIV and other sexually transmitted infections: A qualitative study', *BMC Public Health*, 15(1), pp. 1–9. doi: 10.1186/s12889-015-1794-2.
2. Alam, N., Chamot, E., Vermund, S. H., Streatfield, K. and Kristensen, S. (2010) 'Partner notification for sexually transmitted infections in developing countries : a systematic review', *BMC Public Health*. doi: 10.1186/1471-2458-10-19.
3. Aluisio, A. R., Bosire, R., Bourke, B., Gatuguta, A., Kiarie, J. N., Nduati, R., John-Stewart, G. and Farquhar, C. (2016) 'Male Partner Participation in Antenatal Clinic Services is Associated With Improved HIV-Free Survival Among Infants in Nairobi, Kenya', *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 73(2), pp. 169–176. doi: 10.1097/QAI.0000000000001038.
4. Bateganya, M., Oa, A. and Sm, K. (2010) 'Home-based HIV voluntary counselling and testing (VCT) for improving uptake of HIV testing (Review)', (7). doi: 10.1002/14651858.CD006493.pub4.www.cochranelibrary.com.
5. Becker, S., Mlay, Æ. R. and Schwandt, Æ. H. M. (2010) 'Comparing Couples ' and Individual Voluntary Counseling and Testing for HIV at Antenatal Clinics in Tanzania : A Randomized Trial', pp. 558–566. doi: 10.1007/s10461-009-9607-1.
6. Brown, L. B., Miller, W. C., Kamanga, G., Nyirenda, N., Mmodzi, P., Pettifor, A., Dominik, R. C., Kaufman, J. S., Mapanje, C., Martinson, F., Cohen, M. S. and Hoffman, I. F. (2011) 'HIV partner notification is effective and feasible in sub-Saharan Africa: opportunities for HIV treatment and prevention.', *Journal of acquired immune deficiency syndromes (1999)*, 56(5), pp. 437–42. doi: 10.1097/QAI.0b013e318202bf7d.
7. Buhikire, K., Voss, J., Kigozi, J., Nyakato, P., Ankunda, N., Kalebbo, B., Musiitwa, M., Muganzi, A., Sewankambo, N. K. and Nakanjako, D. (2018) 'Reaching the First 90 in Uganda : Predictors of Success in Contacting and Testing the Named Sexual Partners of HIV + Index Clients in Kiboga District', *AIDS and Behavior*. Springer US, 22(8), pp. 2458–2467. doi: 10.1007/s10461-018-2137-y.

8. Charles, M. P., Kweka, E. J., Mahande, A. M., Barongo, L. R., Shekalaghe, S., Nkya, H. M., Lowassa, A. and Mahande, M. J. (2009) 'Evaluation of uptake and attitude to voluntary counseling and testing among health care professional students in Kilimanjaro', 9, pp. 1–9. doi: 10.1186/1471-2458-9-128.

9. Cherutich, P., Golden, M. R., Wamuti, B., Hospital, K. N., Richardson, B. A., Otieno, F. A., Hospital, K. N., Mutiti, P. M., Hospital, K. N., Macharia, P., Sambai, B., Hospital, K. N. and Dunbar, M. (2018) 'HHS Public Access', 4(2), pp. 1–19. doi: 10.1016/S2352-3018(16)30214-4.Assisted.

10. Cohen, D., Lungu, M. and Oosterhout, J. J. Van (2010) 'HIV testing coverage of family members of adult antiretroviral therapy patients in Malawi', 0121. doi: 10.1080/09540121003720986.

11. Conserve, D., Sevilla, L., Mbwambo, J. and King, G. (2012) 'Determinants of Previous HIV Testing and Knowledge of Partner ' s HIV Status Among Men Attending a Voluntary Counseling and Testing Clinic in Dar es Salaam , Tanzania'. doi: 10.1177/1557988312468146.

12. Dalal, S., Johnson, C., Fonner, V., Kennedy, C. E., Siegfried, N., Figueroa, C. and Baggaley, R. (2017) 'Improving HIV test uptake and case finding with assisted partner notification services', *AIDS*, 31(13), pp. 1867–1876. doi: 10.1097/QAD.0000000000001555.

13. Dalal, S., Johnson, C., Fonner, V., Kennedy, C. E., Siegfried, N., Figueroa, C. and Baggaley, R. (2017) 'Improving HIV test uptake and case finding with assisted partner notification services', 0(November 2016), pp. 1867–1876. doi: 10.1097/QAD.0000000000001555.

14. Dapaah, J. M. and Senah, K. A. (2016) 'HIV/AIDS clients, privacy and confidentiality; The case of two health centres in the Ashanti Region of Ghana', *BMC Medical Ethics*. BMC Medical Ethics, 17(1), pp. 1–10. doi: 10.1186/s12910-016-0123-3.

15. Davis, J., Vyankandondera, J., Luchters, S., Simon, D. and Holmes, W. (2016) 'Male involvement in reproductive, maternal and child health: a qualitative study of policymaker and practitioner perspectives in the Pacific', *Reproductive Health*. Reproductive Health, 13(1), p. 81. doi: 10.1186/s12978-016-0184-2.

16. Deblonde, J., De Koker, P., Hamers, F. F., Fontaine, J., Luchters, S. and Temmerman, M. (2010) 'Barriers to HIV testing in Europe: A systematic review', *European Journal of Public Health*, 20(4), pp. 422–432. doi: 10.1093/eurpub/ckp231.

17. Geary, R. S., Gomez-Olive, F. X., Kahn, K., Tollman, S. and Norris, S. A. (2014) 'Barriers to and facilitators of the provision of a youth-friendly health services programme in rural South Africa', *BMC Health Services Research*, 14, p. 259. doi: 10.1186/1472-6963-14-259.

18. Gebremedhin, K. B., Tian, B., Tang, C., Zhang, X., Yisma, E. and Wang, H. (2018) 'Factors associated with acceptance of provider-initiated HIV testing and counseling among pregnant women in Ethiopia', *Patient preference and adherence*. Dove Medical Press, 12, pp. 183–191. doi: 10.2147/PPA.S148687.

19. Goyette, M., Wamuti, B. M., Owuor, M., Bukusi, D., Maingi, P. M. and Otieno, F. A. (2016) 'Understanding Barriers to Scaling Up HIV Assisted', 30(11), pp. 506–511. doi: 10.1089/apc.2016.0151.

20. Hargreaves, J. R., Morison, L. A., Chege, J., Rutenburg, N., Kahindo, M., Weiss, H. A., Hayes, R. and Buve, A. (2002) 'Socioeconomic status and risk of HIV infection in an urban population in Kenya', 7(9), pp. 793–802. doi.org/10.1046/j.1365-3156.2002.00943

21. Henley, C., Forgwei, G., Welty, T., Golden, M., Adimora, A., Shields, R. and Muffih, P. T. (2013) 'Scale-Up and Case-Finding Effectiveness of an HIV Partner Services Program in Cameroon', *Sexually Transmitted Diseases*, 40(12), pp. 909–914. doi: 10.1097/OLQ.0000000000000032.

22. Hickey, P. W., Kuehn, D. R., Aviles, R., Yu, C., Watson, C. M., Medina, R. and Lopez, M. (2013) 'Knowledge, Attitudes, and Practice Regarding HIV Testing Among Female Military Family Members of Childbearing Age in Honduras', *Military Medicine*, 178(10), pp. 1126–1132. doi: 10.7205/MILMED-D-13-00100.

23. Hoffmann, M., MacCarthy, S., Batson, A., Crawford-Roberts, A., Rasanathan, J., Nunn, A., Silva, L. A. and Dourado, I. (2016) 'Barriers along the care cascade of HIV-infected men in a large urban center of Brazil.', *AIDS care*, 28(1), pp. 57–62. doi: 10.1080/09540121.2015.1062462.

24. Hosseinipour, M. C. and Rosenberg, N. E. (2013) 'HIV Partner Notification: Possible and Essential', *Sexually Transmitted Disease*, 40(12), pp. 915–916. doi: 10.1097/OLQ.0000000000000060.HIV.

25. Idindili, B., Selemani, M., Bakar, F., Thawer, S. G., Gumi, A., Mrisho, M., Kahwa, A. M. and Massaga, J. J. (2015) 'Enhancing hiv status disclosure and partners' testing through counselling in Tanzania', *Tanzania Journal of Health Research*, 17(3). doi: 10.4314/thrb.v17i3.4.

26. Kahabuka, C., Plotkin, M., Christensen, A., Brown, C., Njozi, M., Kisendi, R., Maokola, W., Mlanga, E., Lemwayi, R., Curran, K. and Wong, V. (2017) 'Addressing the First 90: A Highly Effective Partner Notification Approach Reaches Previously Undiagnosed Sexual Partners in Tanzania', *AIDS and Behavior*, 21(8), pp. 2551–2560. doi: 10.1007/s10461-017-1750-5.

27. Kamanga, G., Brown, L., Jawati, P., Chiwanda, D. and Nyirenda, N. (2015) 'Maximizing HIV partner notification opportunities for index patients and their sexual partners in Malawi', *Malawi Medical Journal*, 27(4), pp. 140–144. doi: 10.4314/mmj.v27i4.5.

28. Kasirye, I. (2013) 'HIV/AIDS SERO-PREVALENCE AND SOCIOECONOMIC STATUS: Evidence from Uganda', (95). *doi.org/10.1111/1467-8268.12207*

29. Kaufman, M. R., Massey, M., Tsang, S. W., Serlemitsos, E., Lyles, E., Kong, X., Kaufman, M. R., Massey, M., Tsang, S. W., Serlemitsos, E., Lyles, E. and Kong, X. (2015) 'An assessment of HIV testing in Tanzania to inform future strategies and interventions', *AIDS Care*. Taylor & Francis, 27(2), pp. 213–217. doi: 10.1080/09540121.2014.963007.

30. Kilembe, W., Wall, K. M., Mokgoro, M., Mwaanga, A., Dissen, E., Kamusoko, M., Phiri, H., Sakulanda, J., Davitte, J., Reddy, T., Brockman, M., Ndung'u, T. and Allen, S. (2015) 'Implementation of couples' voluntary HIV counseling and testing services in Durban, South Africa', *BMC Public Health*. BMC Public Health, 15(1), p. 601. doi: 10.1186/s12889-015-1959-z.

31. Kwapong, G. D., Boateng, D., Agyei-Baffour, P. and Addy, E. A. (2014) 'Health service barriers to HIV testing and counseling among pregnant women attending Antenatal Clinic; a cross-sectional study.', *BMC health services research*, 14, p.

267. doi: 10.1186/1472-6963-14-267.

32. ‘Lépine , A ., Terris-Prestholt , F ., & Vickerman , P . (2015). Determinants of HIV testing among Nigerian couples : a multilevel modelling approach . University of Bristol - Explore Bristol Research’ (2015), 30, pp. 579–592. doi: 10.1093/heapol/czu036.Please.

33. Maman, S., Mbwambo, J., Hogan, N. M., Kilonzo, G. P., Sweat, M., Mbwambo, J., Hogan, N. M., Kilonzo, G. P. and Sweat, M. (2010) ‘Women ’ s barriers to HIV-1 testing and disclosure : Challenges for HIV-1 voluntary counselling and testing Women ’ s barriers to HIV-1 testing and disclosure : challenges for HIV-1 voluntary’, 0121(May). doi: 10.1080/09540120120063223.

34. Mazur, A., Brindis, C. D. and Decker, M. J. (2018) ‘Assessing youth-friendly sexual and reproductive health services: A systematic review’, *BMC Health Services Research*. BMC Health Services Research, 18(1), pp. 1–12. doi: 10.1186/s12913-018-2982-4.

35. Meremo, A., Mboya, B., Ngilangwa, D. P., Dulle, R., Tarimo, E., Urassa, D., Michael, E., Mpondo, B., Mchonde, G., Ernest, A., Noronha, R. and Ilako, F. (2016) ‘Tanzania : experience from Angaza Zaidi programme’, 8688, pp. 1–12. doi: 10.11604/pamj.2016.23.189.5683.

36. Meremo, A., Ngilangwa, D. P., Medical, A., Tarimo, E. A. M., Sciences, A., Urassa, D. P. and Sciences, A. (2016) ‘Barriers to accessibility and utilization of HIV testing and counseling services in Tanzania: Experience from Angaza Zaidi programme’, (April). doi: 10.11604/pamj.2016.23.189.5683.

37. Merten, S., Ntalasha, H. and Musheke, M. (2016) ‘Non-uptake of HIV testing in children at risk in two urban and rural settings in Zambia: A mixed-methods study’, *PLoS ONE*, 11(6), pp. 1–16. doi: 10.1371/journal.pone.0155510.

38. Mohlabane, N., Tutshana, B., Peltzer, K. and Mwisongo, A. (2016) ‘Barriers and facilitators associated with HIV testing uptake in South African health facilities offering HIV Counselling and Testing’, *Health SA Gesondheid*. Elsevier Ltd, 21, pp. 86–95. doi: 10.1016/j.hsag.2015.11.001.

39. Ngangue, P., Gagnon, M. and Bedard, E. (2017) ‘Challenges in the delivery of public HIV testing and counselling (HTC) in Douala , Cameroon : providers perspectives and implications on quality of HTC services’. BMC International Health and Human Rights, pp. 1–9. doi: 10.1186/s12914-017-0118-2.

40. Ngangue, P., Gagnon, M. P. and Bedard, E. (2017) ‘Challenges in the delivery of public HIV testing and counselling (HTC) in Douala, Cameroon: Providers perspectives and implications on quality of HTC services’, *BMC International Health and Human Rights*. BMC International Health and Human Rights, 17(1), pp. 1–9. doi: 10.1186/s12914-017-0118-2.

41. Njau, B., Ostermann, J., Brown, D., Mühlbacher, A., Reddy, E. and Thielman, N. (2014) ‘HIV testing preferences in Tanzania: a qualitative exploration of the importance of confidentiality, accessibility, and quality of service.’, *BMC public health*, 14, p. 838. doi: 10.1186/1471-2458-14-838.

42. Obermeyer, C. M. and Osborn, M. (2007) ‘The Utilization of Testing and Counseling for HIV : A Review of the Social and Behavioral Evidence’, 97(10), pp. 1762–1774. doi: 10.2105/AJPH.2006.096263.

43. Pulerwitz, J., Michaelis, A., Verma, R. and Weiss, E. (2010) ‘Addressing gender dynamics and engaging men in HIV programs: lessons learned from Horizons research.’, *Public health reports (Washington, D.C. : 1974)*, 125(2), pp. 282–292. doi: 10.1177/003335491012500219.

44. Pustil, R. (2016) ‘Global AIDS.’, *Aids*, 17 Suppl 4, pp. S3-11. doi: 10.1073/pnas.86.15.5781.

45. Rosenberg, N. E., Mtande, T. K., Saidi, F., Stanley, C., Jere, E., Paile, L., Kumwenda, K., Mofolo, I., Ng, W., William, C., Rosenberg, N. E., Mtande, T. K., Mbbs, F. S., Stanley, C., Dip, E. J. and Nmt, L. P. (2015) ‘HHS Public Access’, 2(11). doi: 10.1016/S2352-3018(15)00182-4.Recruiting.

46. Rustagi, A. S., Gimbel, S., Nduati, R., Cuembelo, M. D. F., Farquhar, C., Gloyd, S., Sherr, K. and International, A. (2017) ‘HHS Public Access’, 28(8), pp. 788–799. doi: 10.1177/0956462416668766.Health.

47. Sabapathy, K., van den Bergh, R., Fidler, S., Hayes, R. and Ford, N. (2012) 'Uptake of Home-Based Voluntary HIV Testing in Sub-Saharan Africa: A Systematic Review and Meta-Analysis', *PLoS Medicine*, 9(12). doi: 10.1371/journal.pmed.1001351.

48. Sanga, Z., Kapanda, G., Msuya, S. and Mwangi, R. (2015) 'Factors influencing the uptake of Voluntary HIV Counseling and Testing among secondary school students in Arusha City , Tanzania : a cross sectional study', *BMC Public Health*., pp. 1–9. doi: 10.1186/s12889-015-1771-9.

49. Spangler, S. A., Onono, M., Bukusi, E. A., Cohen, C. R. and Turan, J. M. (2014) 'HIV-positive status disclosure and use of essential PMTCT and maternal health services in rural Kenya.', *Journal of acquired immune deficiency syndromes (1999)*, 67 Suppl 4(Suppl 4), pp. S235-42. doi: 10.1097/QAI.0000000000000376.

50. TACAIDS, Z. and OCGS, ICF, N. (2013) 'HIV/AIDS and Malaria Indicator Survey 2011–12', *... , Tanzania. Dar es Salaam, Tanzania: Tanzania ...*, pp. 103–110. doi: 10.1159/000362780.Interpretation.

51. Tanser, F., Bärnighausen, T., Grapsa, E., Zaidi, J. and Newell, M.-L. (2013) 'High coverage of ART associated with decline in risk of HIV acquisition in rural KwaZulu-Natal, South Africa.', *Science (New York, N.Y.)*, 339(6122), pp. 966–71. doi: 10.1126/science.1228160.

52. Tomori, C., Kennedy, C. E., Brahmbhatt, H., Wagman, J. A., Mbwambo, J. K., Likindikoki, S., Kerrigan, D. L., Tomori, C., Kennedy, C. E., Brahmbhatt, H., Wagman, J. A., Mbwambo, J. K., Likindikoki, S. and Barriers, D. L. K. (2014) 'Barriers and facilitators of retention in HIV care and treatment services in Iringa , Tanzania : the importance of socioeconomic and sociocultural factors', *AIDS Care*. Taylor & Francis, 26(7), pp. 907–913. doi: 10.1080/09540121.2013.861574.

53. UNAIDS (2015) 'A progress report on the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive'.

54. UNAIDS (2016) 'On the fast track to an AIDS-free generation'.

55. UNAIDS (2016) *Prevention Gap Report 2016*, *Unaids*. doi: 10.1371/journal.pone.0154893.

56. UNAIDS, 2015 (2015) 'Terminology guidelines'.

57. UNAIDS data (2018)'.

58. United Republic of Tanzania Ministry of Health and Social Welfare (2017) 'Tanzania HIV impact survey (THIS) summary sheet: preliminary findings', (December 2017), pp. 2016–2017. Available at: http://phia.icap.columbia.edu/wp-content/uploads/2017/11/Tanzania_SummarySheet_A4.English.v19.pdf%0Ahttp://www.nbs.go.tz/nbs/takwimu/this2016-17/Tanzania_SummarySheet_English.pdf.

59. Vu, B. N., Green, K. E., Thi Thu Phan, H., Hung Tran, M., Van Ngo, H., Hai Vo, S., Minh Ngo, T., Hong Doan, A., Bao, A., Hong Dang, L. and Thi Tra Ha, G. (2019) 'Lay provider HIV testing: A promising strategy to reach the undiagnosed key populations in Vietnam', *PLOS ONE*. Public Library of Science, 13(12), pp. 1–16. doi: 10.1371/journal.pone.0210063.

60. Weiser, S. D., Heisler, M., Leiter, K., Percy-De Korte, F., Tlou, S., DeMonner, S., Phaladze, N., Bangsberg, D. R. and Iacopino, V. (2006) 'Routine HIV testing in Botswana: A population-based study on attitudes, practices, and human rights concerns', *PLoS Medicine*, 3(7), pp. 1013–1022. doi: 10.1371/journal.pmed.0030261.

61. WHO, 2016 (2016) 'PROGRESS REPORT 2016'.

62. Winkleby, M. A., Jatulis, D. E., Frank, E. and Fortmann, S. P. (1992) 'Socioeconomic status and health: how education, income, and occupation contribute to risk factors for cardiovascular disease.', *American journal of public health*, 82(6), pp. 816–820. doi: 10.2105/ajph.82.6.816

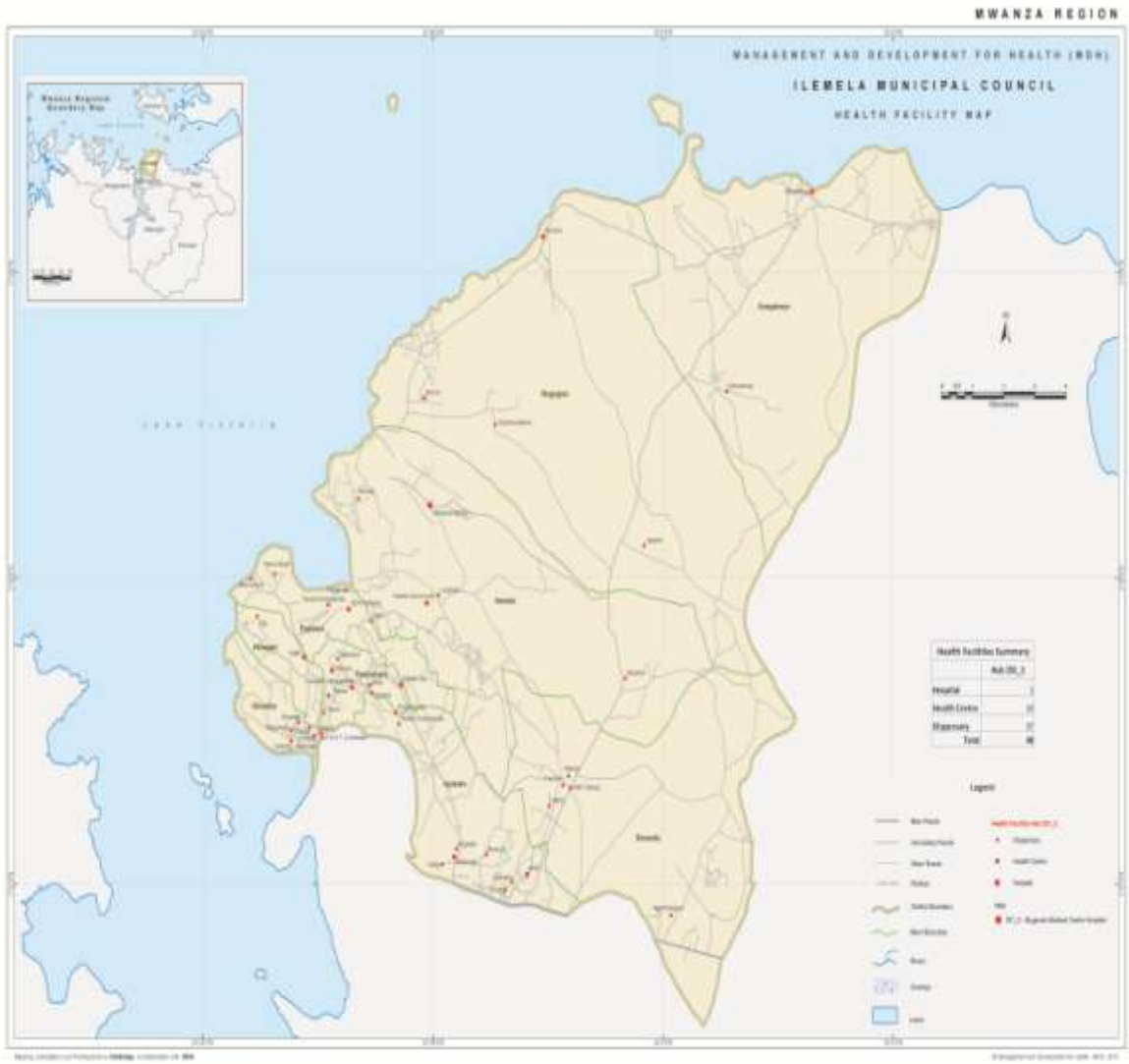
63. World Health Organization (2015) 'Hiv testing services', (July).

64. World Health Organization, Unicef and Unaids (2013) 'GLOBAL UPDATE ON HIV TREATMENT 2013 : Results, Impact and Opportunities', *Global update on HIV treatment 2013: results, impact and opportunities*, (June), p. 7. doi: ISBN 978 92 4 150573 4.

65. Wung, B. A., Peter, N. F. and Atashili, J. (2016) 'Clients' satisfaction with HIV treatment services in Bamenda, Cameroon: A cross-sectional study', *BMC Health Services Research*. BMC Health Services Research, 16(1), pp. 1–9. doi: 10.1186/s12913-016-1512-5.

APPENDICESS

Appendix 1A: Map of Ilemela Municipal with Health facilities



Appendix 2A: Questionnaire –English Version

Serial No. [___|___|___]

Questionnaire Prepared for the Study of Factors Associated with Index HIV Counselling and Testing at Care and Treatment Clinics in Ilemela Municipal Council, Mwanza.

Name of health facility: _____

Type of health facility: 01 =Dispensary/health center [ ] 02 = Hospital [ ]

Please put the appropriate number of a response in the given space.

Eligibility screening log

Eligibility Checklist					
Inclusion Criteria					
Question		**Responses**	**Code**		**No.**
1	Age ≥15 years	Yes No	01 02		[ ]
2	Enrolled into CTC at least 6 months or more	Yes No	01 02		[ ]
3	Date of enrolment into CTC (dd/mm/yyyy)	_____/_____/____			
4	Currently have a sexual partner (6 months or more) or living with a biological child (age of child)	Yes No	01 02		[ ]
5	Consent to participate in the study	Yes No	01 02		[ ]
6	Able to give a signed or thumb print informed consent	Yes No	01 02		[ ]
**** If any inclusion criteria are ticked NO then the participant is not eligible for the study.***					

Date of Eligibility screening: _____

I have assessed the client/participant and checked the inclusion/exclusion criteria and the client is eligible for the study.

RA Name: _____

RA Signature:_____Date:_____

Question		Responses	Code		No.
Section A: **DEMOGRAPHIC CHARACTERISTICS** I am going to ask you some general questions about yourself**.**					
1	Sex	1. Male 2. Female	01 02		[ ]
2	How old are you?	[ ]			
3	Which ward do you come from:	[ ]			
	District	[ ]			
	Region	[ ]			
4	What is your current marital status?	1.Single 2.Married 3.Divorced/Separated 4.Widow 5.Cohabiting	01 02 03 04 05		[ ]
5	Do you have children?	1. Yes 2. No □ go to Q8	01 02		[ ]
6	How many children do you have	_____Number of children			
7	Do you live with any of your children?	1.Yes 2.No	01 02		[ ]
8	What is the highest level of education that you have attained?	1.Never been to school 2. Primary education 3. Secondary education 4. University/college (diploma, degree, masters)	01 02 03 04		[ ]
9	What is your current occupation?	1.Unemployed 2. Employed (earning salary) 3. Businessman 4. Farmer	01 02 03 04		[ ]

		5. Housewife 6. Others	05 06		
Section B. KNOWLEDGE ON INDEX TESTING I am now going to ask you questions about your knowledge on index testing					
10	Have you ever heard about HIV index testing?	1.Yes 2.No □ skip to Q16	01 02		[ ]
11	What was your source of information regarding Index HIV testing?	1. Health care provider 2. Colleague/friends 3. Relatives 4. Brochures 5. Radio/TV 6. Newspapers 7. Others	01 02 03 04 05 06 07		[ ]
12	What does index HIV counselling and testing mean to you?	1. HIV testing offered by health care providers to children 2. HIV testing offered by health care providers to the parent/guardian 3. HIV testing offered to sexual partners and their children when one of the sexual partner is HIV positive 4. HIV testing offered on parent/guardian's request	01 02 03 04		[ ]
13	What are the benefits of index testing?	1.Infected individuals can be have the opportunity to receive free health care services	1.Yes 2.No	01 02	[ ]
		2. Positive partners /children can be avoided because they will spread the infection to others	1.Yes 2. No	01 02	[ ]

		3.Individuals who are infected but do es not know their status will be identified and put on treatment to keep them healthy and reduce spreading to others	1.Yes 2.No	01 02	[ ]
14	Do you know where to go to have your spouse /children tested?	1.Yes 2.No , go to Q 16	01 02		[ ]
15	Where can your spouse /child(ren) be tested	1.Government health facility	1.Yes 2. No		[ ]
		2.Private health facility	1.Yes 2. No		[ ]
		3.Outreach vehicles/tent	1.Yes 2.No		[ ]
		4.Pharmacy/drug store	1.Yes 2. No		[ ]
		5.Others (explain)	1.Yes 2.No		[ ]
16	The different between index testing and other tests like PITC or VCT	1.Index testing tests all children and their sexual partner but VCT test only sexual partners	1.Yes 2.No	01 02	[ ]
		2.Index testing test only sexual partner but PITC /VCT test all	1.Yes 2.No	01 02	
		3. Index testing test only children but PITC test all	1.Yes 2.No	01 02	
17	When is index testing supposed to be offered?	1.Should be offered routinely 2.Whenever one is identified to be HIV positive and enrolled into care and treatment 3.When the child or sexual partner has signs and symptoms of	01 02 03 04		[ ]

		immunosuppression 4.Whenever a sexual partner is diagnosed to be HIV positive			
Section C: **INDEX TESTING** Now I am going to ask you questions about perceived structural factors associated with index. As I told you when starting our discussion, the discussions between us will be confidential.					
18	Has your spouse or child (ren) ever tested for HIV?	1.Yes 2. No	01 02		[ ]
19	Where would you prefer go if you wanted your spouse or child(ren) to test for HIV?	1.Community outreach services 2.Health facility (hospital,HC, dispensary) 3.Others (explain) If 1 go to question 21 and if 2 go to question 20	01 02 03		[ ]
20	At the facility where do you usually access HIV counseling and testing services?	1.OPD clinic 2.IPD clinic 3.CTC clinic 4.Laboratory 5.Special clinic e.g. Family testing day 6.Others (specify)	01 02 03 04 05 06		[ ]
21	Are you satisfied with the environment (privacy and how the nurses or doctors welcome you) where the services are provided?	1.Yes 2.No	01 02		[ ]
22	In your opinion, what do you consider is a suitable environment for providing index testing services	1.Confidential/privacy service	1.Yes 2.No	01 02	[ ]

		2.Short waiting time	1.Yes 2.No	01 02	
		3.Friendly providers	1.Yes 2.No	01 02	
		4.Clinic close to home	1.Yes 2.No	01 02	
		5.Convenient opening hours	1.Yes 2.No	01 02	
		Special clinic for index clients	1.Yes 2.No	01 02	
23	How was your spouse or child(ren) notified about come for HIV counseling and testing?	1.Partner notification model 2.Health care worker notification model 3.Assisted partner notification model (both health care worker and partner)	01 02 03		[ ]
24	The approach used to notify your spouse or child(ren) to come for testing is the best for you.	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	01 02 03 04 05		[ ]
25	Have you ever brought your spouse or child(ren) to be tested in this facility	1.Yes 2.No □ skip toQ 30	01 02		[ ]
26	When you brought your spouse or child(ren) for testing at the facility, did they get tested?	1.Yes □ Skip to Q27 2.No			
27	What was the reason for not tested	1.No reagents/supplies 2.No healthcare provider to do testing 3.I waited for long time and decided to go 4. Other (Specify)	01 02 03		[ ]

28	Were you given priority when you brought your spouse or child(ren) for testing?	1.Yes 2.No	01 02		[ ]
29	Were you satisfied with the way testing was provided for your spouse or child(ren) at the facility?	1.Very satisfied 2.Satisfied 3. Neutral 4.Not satisfied 5.Not satisfied at all	01 02 03 04 05		
30	Have you ever seen any educational materials e.g. brochure talking about index testing	1.Yes 2.No	01 02		[ ]
31	How about reading materials talking about index testing	1.Yes 2.No	01 02		[ ]
32	In your opinion, what do you think are major challenges to bringing your spouse or child(ren) for HIV counseling and testing	1. Distance/location from the health facility	1.Yes 2. No	01 02	[ ]
		2. Lack of transport	1.Yes 2.No	01 02	[ ]
		3.Lack of time to visit health facility	1.Yes 2.No	01 02	[ ]
		4. Poor health services	1.Yes 2.No	01 02	[ ]
		5. Index testing is time consuming	1.Yes 2.No	01 02	[ ]

Section D: PERSONAL FACTORS Now I am going to ask some questions about you and your experiences in taking your spouse or child for HIV counseling and testing. Remember whatever information you will tell me will remain confidential.					
33	How many sexual partners have you had in the past 12 months (1 year)	_____ Number			
34	How long have you been with your current sexual partner/s? *(If has multiple sexual partners, then ask "what is the longest time you have been with any of the sexual partners?")*	1. 1 month 2. 2 months 3. More than 6 months 4. 1 year 5. More than 1 year	01 02 03 04		[ ]
35	What is the occupation of your current sexual partner?	1.Employed 2.Unemployed 3.Self-employed (petty business) 4.Housewife	01 02 03 04		[ ]
36	Does your partner know your HIV status?	1.Yes 2.No □ skip to Q15	01 02		[ ]
37	Who disclosed your HIV status to your partner?	1.Yourself 2.Health care provider 3. Relatives 4.Others	01 02 03 04		[ ]
38	Have you attempted to convince your sexual partner to get testing for HIV?	1.Yes 2.No	01 02		[ ]
39	What was the reaction of your sexual partner when	1.Violence 2.No violence	01 02		

	you approached him/her for testing?	3.Relationship stopped 4.Relationship continued 5. Partner tested 6. Partner refused to test	03 04 05 06		[ ]
40	As far as you know, has your spouse been tested for HIV after knowing your HIV status?	1.Yes 2.No 3. Don't know 4. Declines to answer	01 02 03 04		[ ]
41	If yes, what is his/her HIV status?	1.Pos 2.Neg 3. I don't know	01 02 03		[ ]
42	If positive, is he/she on ART	1.Yes 2. No 3. I don't know	01 02 03		[ ]
43	Where was your partner tested?	1. Hospital	1.Yes 2.No	01 02	[ ]
		2.Health center	1.Yes 2. No	01 02	[ ]
		3.Dispensary	1.Yes 2.No	01 02	[ ]
		4.Community outreach services e.g. tent or in a car	1.Yes 2.No	01 02	[ ]
		5.I don't know	1.Yes 2.No	01 02	[ ]
44	Which approach for HIV counseling and testing did your partner use *(Read the options to the participant)*	1.VCT	1.Yes 2.No	01 02	[ ]
		2. Index HIV testing if Yes,□ □ go to 45	1.Yes 2.No	01 02	[ ]
		3.PITC	1.Yes 2.No	01 02	[ ]

		4. Don't know	1.Yes 2. No	01 02	[ ]
45	Who advised you to bring your spouse or child(ren) for testing?	1.Health care provider 2.No one 3.Yourself 4.Others	01 02 03 04		[ ]
46	Have any of your child(ren) been tested for HIV after knowing your HIV status	1.Yes 2.No	01 02		[ ]
47	If yes, has any of them tested positive for HIV?	1.Yes 2.No	01 02		[ ]
48	If yes, how old is the youngest child who tested positive	_____Months _____Years *(Write years if older than 12 months)*			
49	Which approach for HIV counseling and testing did your child(ren) use *(Read the options to the participant)*	1.VCT	1.Yes 2.No	01 02	[ ]
		2. Index HIV testing	1.Yes 2.No	01 02	[ ]
		3.PITC	1.Yes 2.No	01 02	[ ]
		4. Don't know	1.Yes 2.No	01 02	[ ]
50	Where was your youngest child who is HIV positive tested?	1. Hospital	1.Yes 2.No	01 02	[ ]
		2.Health center	1.Yes 2.No	01 02	
		Dispensary	1.Yes 2.No	01 02	
		4.Community outreach services e.g. tent or in a car	1.Yes 2.No	01 02	

		5.I don't know	1.Yes 2.No	01 02	
51	Is your youngest child who is HIV positive on ART?	1.Yes 2.No	01 02		[ ]

Section E: I am going to ask you questions about attitude towards HIV testing of your spouse/partner or child(ren)					
52	Testing your spouse/partner or child(ren) for HIV is important to identify unknown HIV cases	1.Strongly disagree 2.Disagree 3. Neutral 4.Agree 5.Strongly agree	01 02 03 04 05		[ ]
53	Notifying your partner to come for testing is better than the health care worker approach	1.Strongly disagree 2.Disagree 3. Neutral 4.Agree 5.Strongly agree	01 02 03 04 05		[ ]
54	There are more benefits in offering HIV testing to your spouse/partner or child(ren) than individuals to recognize their own risks and come forward	1.Strongly disagree 2.Disagree 3. Neutral 4.Agree 5.Strongy agree	01 02 03 04 05		[ ]
55	HIV testing for your spouse/partner or child(ren) can be offered without any problem	1.Strongly disagree 2.Disagree 3. Neutral 4.Agree 5.Strongy agree	01 02 03 04 05		[ ]

56	Spouses/partners or children of HIV positive clients are always willing to participate when approached	1.Strongly disagree 2.Disagree 3. Neutral 4.Agree 5.Strongly agree			
57	HIV testing of spouses/partners or children of HIV positive individuals can promote disclosure of HIV status	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongy agree	01 02 03 04 05		[ ]
58	HIV testing of spouses/partners or children of HIV positive individuals can improve partner unity	1.Strongly disagree 2.Disagree 3. Neutral 4.Agree 5.Strongly agree	01 02 03 04 05		

Section F ; CTC2 Documentation on index testing

a) Verification of partner information with what has been self-reported					
59	Spouse tested	1.Yes 2.No	01 02		[ ]
b)Verification of child/children information with what has been self -reported					
60	Child/children tested	1.Yes 2.No	01 02		[ ]

End of questionnaire, Thank you for your cooperation

Appendix 2B: Dodoso

Namba [___|___|___]

Dodoso limeandaliwa kwa ajili ya utafiti wa kupima visababishi vinavyohusiana na upimaji wa vvu kwa wanafamilia (baba, mama na watoto) ya mtu anayepata huduma ya matibabu ya kufubaza vvu katika vituo vya kutolea huduma

Za afya (ctcs) manispaa ya ilemela, mwanza.

Jina la Kituo cha kutolea huduma: _____

Sehemu ya kutolea huduma ya afya: 01= Zahanati/kituo cha afya[ ] 02= Hospitali [ ]

Tafadhali jaza nambari ya jibu lako katika kisanduku kilichoko kulia kwako.

Eligibility Checklist				
Vigezo vya kushiriki kwenye utafiti				
Maswali		**Majibu**	**Namba**	**Kisanduku**
1	Umri miaka 15 au zaidi	Ndio Hapana	01 02	[ ]
2	Tarahe ya kusajiliwa kwenye matibabu ya CTC____/_____/____ (Awe amesajiliwa angalau miezi sita iliyopita)	Ndio Hapana	01 02	[ ]
3	Kwa sasa anaishi na mpenzi (miezi sita au Zaidi) au anaishi na mtoto wa kumzaa	Ndio Hapana	01 02	[ ]
4	Amekubali kushiriki kwenye utafiti	Ndio Hapana	01 02	[ ]
5	Anaweza kuweka sahihiyake au dole gumba	Ndio Hapana	01 02	[ ]
**** Kama kigezo chochote kimejazwa hapana , mshiriki hajakizi vigezo vya kushiriki kwenye utafiti***				

Tarehe ya kukagua vigezo vya ushiriki:_____

Nimemkagua mshiriki kwa kutumia vigezo vilivyowekwa vya ushiriki na amekizi vigezo vyote

Jina la mtafiti msaidizi:_____

Sahihi ya mtafiti msaidizi_____Tarehe_____

Sehemu A: Taarifa Binafsi **Sasa naenda kukuuliza maswali yanahusiana na taarifa binafsi**					
Maswali		**Majibu**	**Namba**		**Kisandukuku**
1	Jinsia	1. Mwanaume 2. Mwanamke	01 02		[ ]
2	Una miaka mingapi?	[ ]			
3	Unaishi wapi ? Kata gani?	[ ]			
	Wilaya	[ ]			
	Mkoa	[ ]			
4	Niambie kuhusu mahusiano yako	1. Sijaolewa 2.Nimeolewa 3.Nimeachika 4.Mjane 5.Naishi na mpenzi	01 02 03 04 05		[ ]
5	Je una mtoto au watoto?	1.Ndio 2.Hapana, (endelea swali la nane)	01 02		[ ]
6	Una watoto wangapi?	Jaza idadi ya watoto_____			
7	Je unaishi nao? Au unaishi na mtoto yeyote kati yao	1.Ndio 2.Hapana	01 02		[ ]
8	Kiwango chako cha juu cha elimu	1.Sijawahi soma 2.Elimu ya msingi 3.Elimu ya secondary 4.Elimu ya Chuo/chuo kikuu	01 02 03 04		[ ]
9	Unafanya kazi gani?	1.Sina ajira 2. Nimearijiriwa (napata mshahara)	01 02		

		3.Nafanya biashara 4.Mkulima 5.Mama wa nyumbani 6.Nyinginezo	03 04 05 06		[ ]
Sehemu B. Naenda Kukuuliza maswali kuhusu ufahamu juu ya upimaji VVU kwa mwenzi wako au watoto wako unaoishi nao					
10	Umeshawahi kusikia kuhusu upimaji wa VVU kwa wanafamilia yaani baba, mama na watoto wa mtu anayeishi na VVU?	1.Ndio 2.Hapana nenda swali la 12	01 02		[ ]
11	Je ulisikia kutoka wapi?	1.Kwa mtoahuduma wa afya 2.Mfanyakazi mwenzangu /rafiki mwenzangu 3.Ndugu/jamaa 4.Nilisoma kwenye kipeperushi 5.Nilisikia kwenye TV/radio 6.Nilisoma kwenye gazeti 7.Nyingine (Taja)	01 02 03 04 05 06 07		[ ]
12	Je ushauri nasaha na Upimaji wa VVU kwa familia ya anayeisha na VVU kwa kutumia mwenzi anayepata huduma za afya katika vituo vya kutolea huduma za afya yaani (CTC) unamaanisha nini? (Chagua jibu moja tu)	1.Upimaji wa VVU kwa mtoto unaofanywa na mtoa huduma wa afya. 2.Ushauri nasaha unaotolewa na mtoa huduma wa afya kwa mzazi au mlezi 3.Upimaji wa VVU unatolewa kwa familia endapo mmoja wao yaani mme au mke ameathirika na VVU	01 02 03 04		[ ]

		4.Upimaji wa VVU na ushauri nasaha unaotolewa kwa mzazi au mlezi kwa ombi			
13	Niambie faida ya kupima mwenzi au mtoto/ watoto wa mtu anayeishi na virusi vya ukimwi? Jibu ndio au hapana kati ya maswali haya	1.Mtu aliyeathirika ataweza kupata huduma za afya bure	1.Ndio 2. Hapana	01 02	[ ]
		2.Wazazi walioathirika pamoja na watoto wao wataweza kukimbiwa ili wasiwaambukize wengine	1.Ndio 2. Hapana	01 02	[ ]
		3.Watu wenye maambukizi ambao hawajui wataweza kugunduliwa na kuanzishiwa matibabu kuzuia kuwaambukiza wengine	1.Ndio 2. Hapana	01 02	[ ]
14	Je unajua wapi pakwenda kupima endapo utahitaji mwenzi wako au mtoto/watoto kupimwa?	1.Ndi 2.Hapana	01 02		[ ]
15	Niambie ni wapi kati ya hizi zilizotajwa ni wapi mwenzi wako au mtoto/watoto wako anaweza kwenda kupima	1.Hospitali ya serekali	1.Ndio 2.Hapana	01 02	[ ]
		2.Hospitali binafsi	1.Ndio 2.Hapana	01 02	[ ]
		3.Kwenye huduma za kwenye jamii mfano kwenye gari au tenti	1.Ndio 2.Hapana	01 02	[ ]
		4.Kwenye duka la dawa	1.Ndio 2.Hapana	01 02	[ ]
		5.Nyingine (Taja)			
16	Je unajua maana au tofauti ya upimaji wa VVU kwa njia ya kupima wanafamilia	1.Upimaji wa familia unapima wanafamilia wote lakini upimaji wa hiari unapima wapenzi tu	1.Ndio 2.Hapana	01 02	[ ]

	(yaani baba, mama, na watoto) na njia ambayo ni yahiaria au kupitia mhudumu wa afya	2.Upimaji wa wanafamilia unapima wapenzi tu ila upimaji wa hiari au upimaji kupitia mhudumu wa afya unapima wote	1.Ndio 2.Hapana	01 02	[ ]
		3.Upimaji wa familia unahusu watoto tu ila upimaji wa hiari ni kwa wote	1.Ndio 2.Hapana	01 02	[ ]
17	Kwa mtazamo wako, upimaji wa VVU familia unatakiwa ufanyike wakati gani?	1. Wakati wote	1.Ndio 2.Hapana	01 02	[ ]
		2.Kila anapopatikana mtu mwenye maambukizi ya VVU	1.Ndio 2.Hapana	01 02	[ ]
		3.Kila mara kunapokua na mtoto au wapenzi wenye dalili za upungufu wa kinga mwilini	1.Ndio 2.Hapana	01 02	[ ]
		3.Kila mara anapogundiliwa mwenzi mwenye maambukizi	1.Ndio 2.Hapana	01 02	[ ]
Sehemu C: Upimaji wa mwenzi na mtoto au watoto **Sasa nataka kukuuliza maswali ya mtazamo wako kuhusu upimaji wa VVU kwa wanafamilia. Kama nilivyokuambia hapo mbeleni taarifa utakayonipa itakua siri yangu mimi na wewe**					
18	Je mwenzi wako au mtoto / watoto wako walishawahi kupima VVU?	1.Ndio 2 Hapana	01 02		[ ]
19	Wewe kama wewe ungependa mwenzi wako au mtoto/watoto wapimwe wapi VVU?	1.Kwenye huduma ya jamii (Kama 1 nenda swali la 21) 2.Kwenye kituo cha afya(hospitali, kituo cha afya au zahanati) (Kama ni nenda swali la 20) 3.Nyingine(Taja)	01 02 03		[ ]
20	Kwenye kituo cha afya ungependa apimwe sehemu gani?	1.OPD 2.Wodini 3.CTC	01 02 03		[ ]

		4.Maabara 5.Kwenye kliniki maalum (mfano ya familia) 6. Nyingine (Taja)	04 05 06		
21	Je unaridhika na mazingira ya sehemu ya upimaji nikimaanisha usiri, mapokezi ya manesi au madaktari?	1.Ndio 2.Hapana	01 02		[ ]
22	Kwa maoni yako unadhani mazingira mazuri yanapaswa kuwa vipi	1.Yenye usiri	1.Ndio 2.Hapana	01 02	[ ]
		2.Muda mfupi wa kusubiri	1.Ndio 2.Hapana	01 02	[ ]
		3.Huduma rafiki	1.Ndio 2.Hapana	01 02	[ ]
		4.Sehemu ya huduma iliyopo karibu	1.Ndio 2.Hapana	01 02	[ ]
		5.Muda wa kutoa huduma unaojali matakwa ya wateja	1.Ndio 2.Hapana	01 02	[ ]
		6. Kliniki maalum kwa wana familia	1.Ndio 2.Hapana	01 02	[ ]
23	Wenzi wako au mtoto/watoto walipataje taarifa kuja kupima	1.Uliwapa taarifa wewe waje 2.Mhudumu wa afya 3.Mhudumu wa afya kwa kushirikiana na wewe.	01 02 03		[ ]
24	Njia iliyotumika kumshawishi mwenzi wako au watoto kuja kupima ndio nzuri kwako?	1.Sikubaliani kabisa 2.Sikubali 3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	01 02 03 04 05		[ ]

25	Ulisawihi wahi kumleta mwenzi wako au mtoto kuja kupimwa hapa	1.Ndio 2. Hapana,(nenda swali la 30)	01 02		[ ]
26	Ulipomleta/waleta walipimwa	1.Ndio (nenda swali la 28) 2.Hapana	01 02		[ ]
27	Kwa nini hawakupimwa	1.Hakukuwa na vitendanishi 2.Mhudumu wa afya hakuwepo 3.Nilisubiri muda mrefu nikaondoka 4.Nyingine (Taja)	01 02 03 04		[ ]
28	Je ulipewa kipaumbele ulipowaleta kupimwa?	1.Ndio 2. Hapana	01 02		[ ]
29	Je uliridhika na huduma uliyopewa ulipomleta mtoto au mwenzi wako kupimwa?	1.Hapana kabisa 2.Hapana 3.Sina jibu 4.Ndio 5. Ndio kabisa	01 02 03 04 05		[ ]
30	Ulishawahi kuona au kusoma kitu chochote kama bango linalozungumzia upimaji kwa wanafamilia?	1.Ndio 2.Hapa	01 02		[ ]
31	Vipi kuhusu kusoma kipeperushi au mwongonzo unaozunguzia upimaji wa familia	1 Ndio 2.Hapana	01 02		[ ]
32	Kwa maoni yako unadhani nini kinasababisha wenzi au mtoto/watoto wasiletwe /wasije kupima VVU	1.Umbali ulipo kufika katika sehemu inapotolewa huduma hiyo	1.Ndio 2.Hapana	01 02	[ ]
		2 Ukosefu wa nauli	1.Ndio 2.Hapana	01 02	[ ]
		3.Kukosa muda kwenda kituo cha afya	1.Ndio 2.Hapana	01 02	[ ]

		4.Huduma mbaya	1.Ndio 2.Hapana	01 02	[ ]
		5.Upimaji wa familia unachukua muda	1.Ndio 2.Hapana	01 02	[ ]
Sehemu D;. Visababishi binafsi **Sasa naenda kukuliza maswali yanayohusiana na wewe binafsi na uzoefu wako kuhusu upimaji wa mwenzi wako pamoja na mtoto/watoto. Ila kumbuka, taarifa yoyote utakayonipa ni siri kati yetu**					
33	Umekuwa na wapenzi wangapi kwa miezi 12 iliyopita	Weka idadi_____ (Rejea vigezo vya ushiriki)			[ ]
34	Umekuwa na mpenzi wako kwa muda gani.*(Kama anawapenzi wengi uliza ameka nao muda mrefu kiasi gani)*	1.Mwezi mmoja 2.Miezi miwili 3.Zaidi ya miezi sita 4.Mwaka mmoja 5.Zaidi ya mwaka mmoja	01 02 03 04 05		[ ]
35	Mwenzi wako anafanya kazi gani?	1.Kaajiriwa 2.Hajaajiriwa 3.Mfanyabiashara 4.Kajiajiri 5. Mama/baba wanyumbani 6.Mkulima	01 02 03 04 05 06		[ ]
36	Mwenzi wako anajua hali yako ya maambukizi?	1.Ndio 2. Hapana	01 02		[ ]
37	Nani alimwambia hali yako ya maambukizi	1.Wewe binafsi 2.Mhudumu wa afya 3.Ndugu 4.Wengine (Taja)	01 02 03 04		[ ]
38	Ulishawahi kumshauri mwenzi wako kupima VVU?	1.Ndio 2.Hapana	01 02		[ ]

39	Je unaweza kuniambia alilipokeaje jambo la upimaji ulipomshauri mwenzi wako kwenda kupima?	1.Alifanya fujo 2.Hakufanya fujo 3.Mahusiano yenu yaliisha 4.Mahusiano yenu yaliendelea 5.Alienda kupima 6.Alikataa kwenda kupima	01 02 03 04 05 06		[ ]
40	Tuambia kama unavyojua, je mwezi wako alienda kupima VVU baada ya kujua hali yako ya maambukizi?	1.Ndio 2.Hapana 3.Sijui 4.Kakataa kujibu	01 02 03 04		[ ]
41	Kama ndio, hali yake ya maambukizi ipoje?	1.Kaathirika 2.Hajaathirika nenda swali la 43 3.Sijui	01 02 03		[ ]
42	Kama kaathirika, je yupo kwenye dawa za kufubaza VVU?	1.Ndio 2.Hapana 3.Sijui	01 02 03		[ ]
43	Mwenzi wako alipimwa wapi?	1.Hospitalini	1.Ndio 2.Hapana	01 02	[ ]
		2.Kituo cha afya	1.Ndio 2.Hapana	01 02	[ ]
		3.Zahanati	1.Ndio 2.Hapana	01 02	[ ]
		4.Kwenye huduma za kijamii (tenti/gari)	1.Ndio 2.Hapana	01 02	[ ]
		5.Sijui	1.Ndio 2.Hapana	01 02	[ ]
44	Mwenzi wako alipimwa kwa njia gani	1.Alitembelea kituo cha afya mwenyewe kupima	1.Ndio 2.Hapana	01 02	[ ]
		2.Alipimwa kwa njia ya wanafamilia(baba, mama na watoto)	1.Ndio 2.Hapana	01 02	[ ]

		3.Mhudumu wa afya alimpima	1.Ndio 2.Hapana	01 02	[ ]
		4.Sijui	1.Ndio 2.Hapana	01 02	[ ]
45	Nani alikushauri umlete mwenzi wako au mtoto/watoto kupima	1.Mhudumu wa afya 2.Hakuna aliyenishauri 3.Mwenyewe 4.Nyingine (Taja)	01 02 03 04		[ ]
46	Je kuna mtoto wako yeyote alipimwa VVU baada ya kujua hali yako?	1.Ndio 2.Hapana nenda swali la 52	01 02		[ ]
47	Kama ndio kuna yeyote alipatikana na maambukizi?	1.Ndio 2.Hapana nenda swali la 49	01 02		[ ]
48	Kama ndio mtoto wako mdogo aliyeonekana na maambukizi ana umri gani?	Andika Miaka_____ Andika Miezi_____			
49	Je ni njia ipi ilitumika kumpima/kuwapima VVU?	1.Alienda kituo cha afya kupima mwenyewe	1.Ndio 2.Hapana		[ ]
		2.Alipimwa kwa njia ya wanafamilia(baba, mama na watoto)	1.Ndio 2.Hapana		[ ]
		3.Mhudumu wa afya alimpima	1.Ndio 2.Hapana		[ ]
		4.Sijui	1.Ndio 2.Hapana		[ ]
50	Mtoto wako ndogo ambaye ameathirika alipimwa wapi VVU?	1.Hospitalini	1.Ndio 2.Hapana		[ ]
		2.Kituo cha afya	1.Ndio 2.Hapana		[ ]
		3.Zahanati	1.Ndio 2.Hapana		[ ]
		4.Kwenye jamii kama tenti /gari	1.Ndio		[ ]

			2.Hapana		
		5.Sijui	1.Ndio 2.Hapana		[ ]
51	Je mtoto wa mdogo aliyeathirika anatumia dawa?	1.Ndio 2.Hapana	01 02		[ ]
Sehemu E; Naenda kukuuliza maswali kuhusiana na mtazamo wako wa upimaji wa VVU kwa wanafamilia.					
52	Kupima VVU mwenzi au mtoto/watoto ni muhimu ili kutambua wale wenye maambukizi wasiojua	1.Sikubaliani kabisa 2.Sikubali 3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	01 02 03 04 05		[ ]
53	Kumshawishi mwenzi wako kuja kupima ni nzuri zaidi kuliko kumtumia mhudumu wa afya	1.Sikubaliani kabisa 2.Sikubali 3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	01 02 03 04 05		[ ]
54	Kuna faida kubwa ya kuwapima mwenzi au mtoto/watoto VVU kuliko mtu mwenyewe kujitokeza kwa wakati wake kwenda kupima	1.Sikubaliani kabisa 2.Sikubali 3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	01 02 03 04 05		[ ]
55	Upimaji wa VVU kwa mwenzi wako au mtoto/watoto unaweza kufanyika bila tatizo lolote	1.Sikubaliani kabisa 2.Sikubali 3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	01 02 03 04 05		[ ]
56	Mwenzi au watoto wa wenye maambukizi ya	1.Sikubaliani kabisa 2.Sikubali	01 02		[ ]

	VVU wanakuwaga tayari kupima wakati wowote wakishauriwa kupima	3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	03 04 05		
57	Upimaji wa VVU kwa wenzi au watoto wa mtu anayeishi na VVU unasaidia kuongeza uwazi wa maambukizi	1.Sikubaliani kabisa 2.Sikubali 3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	01 02 03 04 05		[ ]
58	Upimaji wa VVU kwa wenzi au watoto wa mtu anayeishi na VVU unasaidia kuongeza ushirikiano katika familia	1.Sikubaliani kabisa 2.Sikubali 3.Sina jibu 4.Nakubaliana 5.Nakubaliana kabisa	01 02 03 04 05		[ ]
Sehemu F; Uhakiki wa kumbukumbu za upimaji kwenye kumbukumbu za mteja (CTC2)					
a) Uhakiki wa taarifa ya mdomo kama mwenzi amepimwa na kilichoandikwa kwenye kadi ya mteja					
59	Mwenzi amepimwa	1.Ndio 2.Hapana	01 02		[ ]
b) Uhakiki wa taarifa ya mdomo kama mtoto/watoto amepimwa na kilichoandikwa kwenye kadi ya mteja					
60	Mtoto/watoto wamepimwa	1.Ndio 2.Hapana	01 02		[ ]

Mwisho wa maswali

Asante kwa ushirikiano

Appendix 3A: Informed Consent Form

Hello. My name is_____. I am from Muhimbili University of Health and Allied Sciences (MUHAS). As part of my MPH program, I am conducting a research to learn more about the Factors Associated with Index HIV Counselling and Testing at Care and Treatment Clinics in Ilemela Municipal Council.

Why are we doing this study?

Identifying people leaving with HIV (PLHIV) and linking them to care is the major goal of our district, region and nation. This effort can only be achieved if all those people who do not know their status are tested and if positive linked to care and if negative protected from getting the infection. We believe that testing your index can be one way of identify those who are infected and do not know they are infected. This study will help us know factors associated with index HIV testing so that we can focus our interventions to improve HIV case identification.

We expect about 344 participants from Ilemela municipal Care and treatment clinics to participate this study. If you join, your taking part will help the district, region and Ministry of Health, Community Development, Gender, Elderly and Children (MOHCGEC) to improve HIV services in the country.

What do you have to do if you agree to take part?

If you agree to join this study, we will ask you questions about your demographic, if you had any experience with index HIV testing and your sexual behaviors. This interview will take about 30 minutes.

What are the potential risks?

The risks to taking part in the interview are very small. You may feel uncomfortable about some of the questions I will ask. You can refuse to answer any question.

As with all studies, there is a chance that confidentiality could be compromised however, we are doing everything we can to minimize this risk.

What are the potential benefits?

There may be no direct benefit to you but your taking part in this study could help us learn more about factors associated with index HIV testing in Ilemela Municipal council. It can also help us learn about coverage in terms of number of index clients that have received HIV testing.

In addition to that;

- HIV-positive partners can start on HIV treatment to keep them healthy and reduce risk that they will pass HIV to other sex partners and/or children.
- HIV-negative partners can access HIV prevention services to help them remain HIV-negative, including condoms, pre-exposure prophylaxis (PrEP), and male circumcision.
- HIV-positive children can start HIV treatment to help them stay healthy and thrive.
- HIV-negative children can know their status and take steps to stay HIV-free.

What are alternatives to taking part?

You can decide not to take part in this study. Your decision to take part or not take part will not affect your healthcare services.

What about confidentiality?

All the information you give us will be kept confidential and will be used in nothing more than for the purpose explained above. Your name will not appear when we share study results and your answers to the questions will be identified only by a number.

Whom should you contact if you have questions?

If you have any questions or need further clarifications, do not hesitate to contact the following;

Optatus Malewo –MPH student phone no. 0756 180555

I have read/ understood the request, under my own will, without any force or promises; I would like to participate in this study for the purposes explained.

Interviewee signature_____ Interviewer signature_____

I am sorry; I am not willing to participate [ ]

Appendix 3B: Hati ya Kukubali kushitiki

Habari, Jina langu naitwa……Ninatoka katika chuo Kikuu Cha Sayansi ya Tiba na Afya, MUHAS**.** Ikiwa kama sehemu ya kukamilisha masomo yangu ya shahada ya Uzamili ya Afya ya Jamii (MPH)**,** ninafanya utafiti juu ya Ufahamu, Mtazamo na upimaji wa visababishi vinavyohusiana na upimaji wa vvu kwa wanafamilia (baba, mama na watoto) ya mtu anayepata huduma ya matibabu ya kufubaza vvu katika vituo vya kutolea hudumaza afya (CTCs) manispaa ya Ilemela, mwanza

Kwa nini tunafanya utafiti huu?

Kuwatambua watu wanaoishi na virusi vya ukimwi na kuwaanzishia matibabu ni lengo kuu la wilaya yetu ya Ilemela, mkoa wetu wa Mwanza pamoja nan chi yetu ya Tanzania kwa ujumla. Malengo yetu yataweza kufanikiwa tu endapo tutaweza kufanikiwa kuwapima wale ambayo hawajui taarifa zao za maambukizi na kama wale ambao wanaopima wakikutwa na maambuzi kuanzishiwa matibabu. Pia tunawajibika kuwakinga wale ambao watakutwa hawana maambukizi baada ya kupima.

Tunaimani kuwa kumpima mwenzi wako au mtoto wako ni njia mojawapo ya kuweza kuwaibua wale ambao wanaweza kuwa hawajua kama wameambukizwa au la.

Kwa hiyo lengo kubwa la utafiti huu ni kuibua yale yote ambayo kwa njia moja au nyingine yanakwamisha upimaji wa wanafamilia (baba, mama na mtoto) ili kuweza kuweka mikakati ni jinsi gani ya kupambana na changamoto hizi.

Tunategemea washiriki 344 katika utafiti huu ambao utafanyika katika baadhi ya vituo vya kutolea huduma za CTC katika wilaya hii ya Ilemela.

Ushiriki wako katika utafiti huu utasaidia wilaya hii, mkoa huu pamoja na taifa hili kuboresha huduma za kupambana na maradhi ya VVU na ukimwi.

Unatakiwa kufanya nini kama utakubali kushiriki katika utafiti huu?

Endapo utakubali kushiriki katika utafiti huu, tutakuuliza maswali yanayohusiana unapotoka, elimu yako, taabia yako ya mahusiano, uelewa wako kuhusu upimaji wa familia, pamoja na mengine. Dodoso hili litachukua dakika thelathini

Nini hatari ya kushiriki katika utafiti huu?

Hakuna hatari ya kushiriki katika utafiti huu ila katika maswali ambayo tutauliza, baadhi yanaweza kukuudhi au kukufanya kujisikia vibaya. Unaweza kukataa kuyajibu.

Pia kunaweza kukawa na hatari ya kuvuja kwa siri katika utafiti huu kama tafiti nyingine zozote, ila tunafanya kila linalowezekana kuzuia isitokee.

Nini faida ya kushiriki katika utafiti huu

Hakutakua na faida ya moja kwa moja katika kushiriki utafiti huu ila itatuwezesha kujifunza vitu vinavyosababisha familia zisipime maambukizi ya VVU. Itatusaidia kujifunza pia katika watu wanaopata huduma za afya kwenye vituo vy CTC vya Ilemela ni wangangapi wenzi wao au watoto wao wamepimwa.

Ni maadhara ya kutoshiriki katika utafiti huu?

Unaweza kushiriki au kutokushiriki na kushiriki au kutokushiriki kwako hakutakunyima haki yako ya matibabu.

Vipi kuhusu usiri?

Taarifa utakazozitoa zitakuwa ni siri na zitatumika kwa ajili ya utafiti tu na si kwa kitu kingine chochote. Jina lako halitatumika katika wakati wa kutoa matokeo ya utafiti huu.

Utawasiliana na nani kama una swali lolote?

Kama utakua na swali lolote usisite kumuuliza ndugu, Optatus Malewo, Namba ya simu 0756 180 555

"*Nimesoma / nimeelewa ombi lako, kwa hiari yangu, bila ya nguvu wala ahadi zozote*

nakubali kushiriki katika utafiti huu".

Sahihi ya mshiriki……. Tarehe.....

Sahihi ya muulizaji..... Tarehe .....

Appendix 4A: Recruitment /Introduction script at identification point of care and treatment clinic

Hello. My name is_____and I'm here from Muhimbili University of Health and Allied Sciences (MUHAS)

I am here to learn more about index HIV counselling and testing activities in this facility. We particularly want to learn about the factors associated with index HIV counselling and testing /opportunities or challenges associated with it so that we can come up with the strategies to improve the services.

The interviewer will then read the following script to notify the client of the study and also to elicit interest in recruitment.

I would like to give you information about the study, for which you may be eligible. Since you are attending the clinic at this facility, Government of Tanzania in collaboration with Muhimbili University and Ilemela Council Health Management team is conducting a study to learn more about the factors associated with index HIV counselling and testing as a way of improving HIV care services and improve HIV cases identification.

The study team is interested in learning more about index HIV counselling testing, documentation, knowledge and attitude and how this is done for them to be able to improve HIV care and treatment program which in turn helps people like yourself, your spouse and your family.

If willing to participate, you will be asked to give written/verbal informed consent before proceeding with interview questions.

If the client agree to participate, then proceed with obtaining informed consent.

After the interview if you realized that they have not yet brought a spouse /child to HIV testing encourage them to do so and explain to him/her the important of bringing them to be tested.

Follow below script to explain to him/her important of bringing them to be tested

- Help to prevent new infection as many new HIV infections are caused by people unaware that are infected.
- Starting treatment early for them incase found to be infected can help stay health and longer time before you developing AIDS or other infections.
- HIV medicines are more effective if you start them early

Appendix 4B: Utaratibu wa kumshauri mteja ili aweze kushiriki katika tafiti hii katika kituo husika cha afya

Jitambulishe kwa mteja kwamba wewe unaitwa nani na unatokea wapi. Muombe akuruhusu kama unaweza kuzungumza nae. Mwambia kwamba upo hapo kufanya utafiti pamoja na kujifunza kuhusu upimaji wa VVU kwa familia za watu ambao tayari wapo kwenye matibabu(baba , mama na watoto) katika kituo hicho na lengo likiwa ni kujifunza kuhusu changamoto wanazokutana nazo ambazo zinawazuia wao kuwaleta au kuwashauri wenzi wao kupima VVU. Hivyo unaomba ushirikiano wake ili uweze kumfahamisha zaidi.

Nanapenda kukupa taarifa zaidi kuhusu utafiti huu ambao unaweza kukidhi vigezo vya kushiriki.
Serekali ya Tanzania kwa kushirikiana na Chuo kikuu cha Afya Muhimbili pamoja na halmashauri ya wilaya ya Ilemela kitengo cha afya, wanafanya utafiti kujifunza kuhusu changamoto ambazo zinahusiana na upimaji wa VVU hasa kwa familia za watu wanaishi na VVU na ambao tayari wapo kwenye dawa za kufubaza VVU na lengo kuu likiwa ni kuweza kuwagundua wale ambao wanamaambukizi ili waweze kuanzishiwa matibabu.
Pia utafiti huu unapenda kupata maoni pia kuhusu mtazamo wako pamoja na mambo mengine ambayo kwa njia moja au nyingine yatasaidia kuboresha huduma kwenu pamoja na familia zenu.
Kama utapenda kushiriki, nitaomba ridhaa yako kwa kujaza nakala hii au kuweka dole gumba kabla sijaenda kukuuliza maswali mengine.

Endapo mteja akiridhia, endelea na ujazaji wa fomu ya kuridhia kushiriki.

Baada ya kujadiliana na mteja kupitia maswali mbalimbali na ukagundua hajawahi kuwaleta watoto wake kuja kupimwa au mwenzi wake, mshauri kuhusu umuhimu wa kuwaleta kuja kupimwa. Jaribu kumfafanua zaidi faida za upimaji.

- Upimaji utakusaidia kujikinga na maambukizi mapya
- Akianza matibabu mapema itasaidia kuishi muda mrefu kwa sababu magonjwa nyemelezi hataweza kuepukika
- Ukianza matumizi ya dawa mapema inasaidia kufanya kazi vizuri zaidi.

Appendix 5: Data extraction sheet from patient files

Facility Name: _____

Date: _____Name /Signature of the interviewer: _____

Data Extraction sheet from patient files					
Question: Is the information documented in the CTC2 file corresponds with what the participant self-reported					
Patient serial No.	Index client	**Responses**	**Code**		**No.**
	Spouse	Yes No	01 02		[ ]
	Child/children	Yes No N/A	01 02		[ ]
	Spouse	Yes No	01 02		[ ]
	Child/children	Yes No N/A	01 02		[ ]
	Spouse	Yes No	01 02		[ ]
	Child/children	Yes No N/A	01 02		[ ]
	Spouse	Yes No	01 02		[

					]
	Child/children	Yes No N/A	01 02		[ ]
	Spouse	Yes No	01 02		[ ]
	Child/children	Yes No N/A	01 02		[ ]

Appendix 6: Participant tracking form

Name of Facility _____

S/N	Unique Identification	CTC ID

Appendix 7: Sources of Index testing information

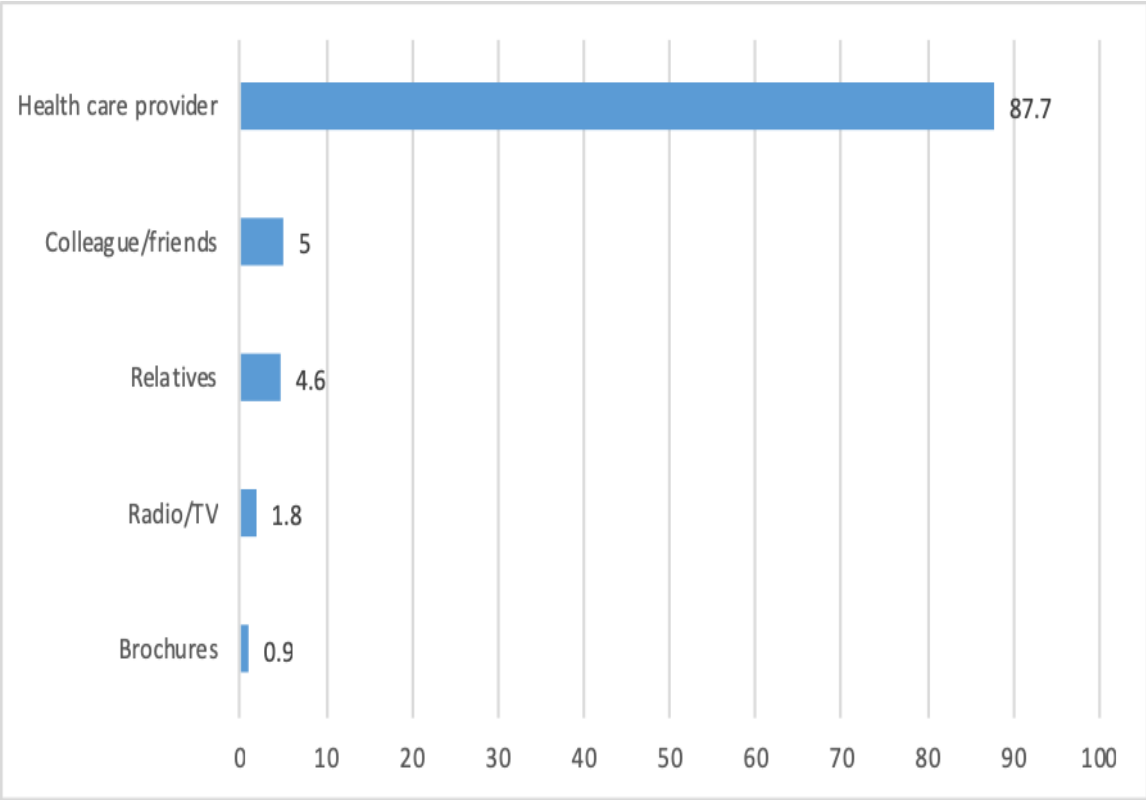


Figure 2: Percentage distribution of Main source of Index testing information