College of Medicine

Factors that influence uptake of assisted partner notification for HIV index testing services among new diagnosed HIV positive adults at Ndirande Health Centre, Blantyre

By

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DECLARATION

I hereby declare that this dissertation is my original work and has not been presented for any other award at the University of Malawi or at any other university.

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CERTIFICATE OF APPROVAL

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DEDICATION

This work is dedicated to my late young brother, Bruno Puleni.

ABSTRACT

To achieve first 95 where 95% of PLHIV need to know their status, the Ministry of Health introduced the 2019 Active index testing policy, in which assisted partner notification services (APNS) were chosen as the key innovative and effective strategy to increase HIV case identification. We conducted descriptive qualitative research to assess barriers and facilitators to uptake of APNS among newly diagnosed HIV positive clients at Ndirande Health Centre. The study used mixed variational sampling. The study sought in-depth opinions and perceptions from index clients who accepted APNS, partners who either accepted or refused APNS and health care workers who provide index testing services. Data collection was done through in-depth interviews and key informant interview guides. Data analysis was done manually using thematic inductive and deductive analysis. The study results were thematically analysed and presented in the context of the theoretical framework, the Socio-Ecological Model. The study showed that lack of knowledge among partners of index clients, wrong physical addresses, non disclosure of results for fear of intimate partner violence (IPV), lack of provider knowledge, the proximity of the contact house to the neighbour's, and the COVID 19 pandemic were the key barriers to uptake of APNS. Knowledge of APNS, stability of marriage, gender, health care worker training, health care worker notification, home tracing, and testing were the key facilitating factors to the uptake of APNS. Sensitisation and demand creation, screening for intimate partner violence, provision of funds to support home tracing and testing, provider skills training and health care worker notification approach were the strategies used to increase uptake of APNS.Non-disclosure of HIV testing results for fear of IPV was the major prohibitive factor to the uptake of APNS. Health care workers should actively screen and look for IPV, particularly in clients with unstable relationships

and optimize health care worker notification approach which reduces IPV occurrence, support disclosure, and increase APNS uptake.

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ABBREVIATIONS AND ACRONYMS

AIT: Active Index Testing

APNS: Assisted Partner Notification Services

ART **:** Anti Retro Viral Therapy

COMREC : College of Medicine Research and Ethics committee

CR **:** Contract Referral

DR **:** Dual Referral

FR : Family Referral

HDA **:** HIV Diagnostic Assistant

HTS **:** HIV Testing Services

IDI : In depth Interview

KII **:** Key Informant Interview

MOH **:** Ministry of Health

NAC **:** National Aids Commission

PLWHIV **:** People Living with HIV

PR **:** Provider Referral

SEM **:** Social Ecological Model

UNAIDS **:** United Nations AIDS

VAPN **:** Voluntary Assisted Partner Notification

WHO **:** World Health Organisation

OPERATIONAL DEFINITIONS

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

Index Testing: A voluntary process where trained health workers and lay cadres, through the consent of the index client ask both new and previous positive index clients about their sexual partners or drug-injecting partners and offer them HIV testing services.

Experienced Health Providers: HIV Diagnostic Assistants or HIV Testing and Services Counsellors with more than 3 years of experience.

New Positive: Clients who were never tested for HIV and have tested HIV positive for the first time.

CHAPTER 1: INTRODUCTION AND STUDY OBJECTIVES

1.1 Background

Sub-Saharan Africa is home to only 12% of the global population, yet accounts for 71% of the global burden of HIV infection [1]. Malawi, one of the worst-hit countries with HIV and AIDS has about 1 million people living with HIV and accounts for 4 % of the total number of the same in Sub Saharan Africa [1]. Currently, the prevalence of HIV in Malawi stands at 10.6% [2]. Although the countrẏ has been making progress in raising HIV awareness as well as supporting interventions that have potentially reduced HIV infections annually from 34 000 [3] to 28 000[2], the number of new HIV infections reported annually remains high at 0.39% [2]. To attain, epidemic control, Malawi needs to reduce the annual incidence to 0.2% [4].

In response to this challenge, the Malawi National Strategic Plan for HIV and AIDS (2020–2025) endorsed the Joint United Nations Program on HIV/AIDS 95-95-95 treatment targets for epidemic control [4]. In this strategy, Malawi strives to ensure that 95% of all people living with HIV (PLHIV) know their status, 95% of all people diagnosed with HIV infection are linked to receive sustained antiretroviral therapy (ART) and 95% of all people receiving ART will have viral suppression as the country moves towards epidemic control by year 2030 [4]. To achieve the first 95, assisted partner notification for HIV index testing services was highlighted as a key innovative and effective HIV Testing Service strategy (HTS) to increase case identification [5-6].

Malawi has about 1 million people living with HIV of who 72.3% are confirmed to have been diagnosed with HIV [2]. Available national program data reported a 15% partner return rate for

HIV index testing services using passive partner notification services, suggesting a low HIV case identification through index testing services [7]. Cognizant of the strategy of efficient testing, where testing is targeted in order to maximise yield (case identification), Malawi has recently introduced the Active Index Testing (AIT) strategy to optimise the use of assisted partners notifications services, diagnose more PLHIV, put them on treatment, and attain the 95-95-95 targets for epidemic control by 2030 [4,8]. But with the current trends in the uptake of HIV partner notification services as evidenced by the low returnrates of elicited contacts for index testing, the dream for realisation of the first 95 targets would be remote. It is in this context that we need to explore barriers and facilitators to uptake of assisted partner notification for HIV index testing services among newly diagnosed HIV positive clients in a real-world setup, both routine facility, and community HTS.

1.2 Problem Statement

To achieve the first 95, Malawi 2016 HTS guidelines advocated for partner notification for HIV index testing services as a key innovative and effective HIV Testing Service (HTS) strategy to increase identification of new HIV positive clients [6]. Further to this, Ministry of Health introduced the 2019 Active Index Testing policy to optimise identification of newly HIV infected people [8]. The Active Index Testing policy stated that, with the consent of the index client, trained health workers and lay cadres ask both new and previous positive index clients about their sexual partners and children below 12 years' HIV status and offer them HIV testing services at both community or facility testing points [8]. If the elicited contacts of the index clients do not return within a two week-period, health care workers reach out to the contacts and offer them HIV testing services.

Despite that Malawi rolled out partner notification for HIV index testing services implementation in 2013 with an aim of reaching out to 60-70% of the contacts with index testing services, very few contacts returned for HIV testing services. In 2017, a total of 41 884 contacts were elicited and provided with partner notification slips, only 15% of the partners successfully returned for HIV index testing services [7]. This resulted in low case identification, reduced number of indices linked to treatment and ultimately the dream of the country attaining the 90 90 90 treatment targets and epidemic control respectively to be remote. In the context of Ndirande Health Centre, 1, 064 contacts were elicited, and 990 contacts were notified for HIV index testing services [36]. However, despite active phone and physical notifications, only 33% of the elicited contacts did return or were reached out successfully with HIV testing services. Understanding the facilitators and barriers to uptake of APNS at Ndirande Health Centre would be essential to improvement of the number of contacts who return for HIV testing after partner notification. Based on the 67% contact non-return gap, it was imperative that a qualitative research that aimed at exploring factors that influence uptake of assisted partner notification for HIV index testing services among new diagnosed HIV positive be conducted.

1.3 Literature Review

1.3.1 Introduction

Several qualitative studies on assisted partner notification serices (APNS) have been conducted in Africa, particularly Kenya and Uganda. In Malawi, whilst most of the research in assisted partner notification for HIV index testing services focused on the importance of APNS as a tool to maximize HIV case identification. Furthermore, few researchers in the Malawian studies looked at the qualitative aspect of assessing the facilitators and barriers towards assisted partner

notification for HIV index testing services from the perspective of contacts that returned for testing [9]. However, this research sought to understand both barriers and facilitators of APNS and extend to reach out to contacts who did not return or refused HIV index testing services after being notified either by the index client or health care workers.

The literature review defined assisted partner notification services for HIV index testing services. It also explained how partner notification services are implemented and the advantages and disadvantages its implementation had. The review further highlighted several studies previously carried out which espoused the facilitators and barriers of assisted partner notification for HIV index testing services. The factors were thematically categorised as individual, social-cultural, and health system factors.

1.3.2 Definition

In its 2016 guidelines for assisted partner notification services, the World Health Organization (WHO) defined partner notification for index testing services as a process where trained health workers, through the consent of the index client asked both new and previous positive index clients about their sexual partners or drug-injecting partners and offer them HIV testing services [10]. Partner notification services are offered either passively or through assisted approaches. In passive partner approaches, it is the responsibility of the index client to disclose their HIV status to partners and encourage these partners to seek HTS using a partner notification slip [10]. In the assisted partner notification approaches, the provider takes the responsibility to support the index client in disclosing their HIV status to the partners and encouraging the partners to receive HIV testing services [10].

1.3.3 Implementation of assisted partner notification (APNS)

Following 2016 WHO guidelines on assisted partner notification services [10], the 2019 Malawi's Active Index Testing Services policy provided for assisted partner notification, where sexual partners and children below 12 years are offered HIV testing services either at community or facility levels [8]. Based on the consent provided by the index client, contacts of the index clients are elicited and invited for testing and those who do not show up are followed up with HIV testing services on opt-out strategy [10].

WHO outlined three APNS approaches for HIV index testing as that are explained below. Firstly, in the contract referral (CR) approach, the index client enters into a contract with the counsellor and agrees to disclose his HIV status to his partner(s) and refer them for HTS within a two weeks' time frame. If partner(s) do not access HTS within this period, providers contact the partner(s) directly to notify them that they may have been exposed to HIV. Providers offer voluntary HTS to partner(s) while maintaining the confidentiality of the index client [10]. Secondly, provider referral (PR) has it that with the consent of the HIV-positive index client, the provider directly contacts the client's partner(s), informs them that they have been exposed to HIV, and offers them voluntary HTS while maintaining confidentiality of the index client [10]. Lastly, the dual referral (DR) approach states that a trained provider sits with the HIV-positive client and his/her partner(s) to provide support as the client discloses his/her HIV status. The provider also offers voluntary HTS to the partner [10]. In all the approaches, consent, confidentiality, and intimate partner violence screening are the key principles to the implementation of APNS.

1.3.4 Benefits of partner notification for HIV index testing services

Globally, early approaches to index testing services favoured more of the passive notification forms for HIV index testing services. Malawi has been implementing passive notification for HIV index testing services since 2013 [8]. However, the desire to attain HIV epidemic control through the 95-95-95 strategy resulted in more proactive approaches for HIV case identification being implemented [4,10]. Several studies have shown that partner notification for HIV index testing services are beneficial to HTS programming and realization of the first 95 of the 95-95-95 strategy at various levels. The study categorizes the benefits of assisted partner notification for HIV index testing services in relation to the index client, partners of the index client and community levels.

1.3.4.1 Benefits for the index client

Studies showed that assisted partner notification for HIV index testing services provided support to PLHIV and assisted them in getting their partner(s) and children tested for HIV [11,12]. One cross-sectional mixed-methods study in Tanzania showed that assisted partner notification for HIV index testing services were effective in bringing 56.6% of the sexual partners for testing [11]. Through their consents, index clients who are not able to inform their contacts, are supported by the health care worker who reached out to their contacts directly. In this context, unlike passive partner notification services, the assisted partner notification for HIV index testing services takes the onus off of the index client as the sole person responsible for the notification [10].

1.3.4.2 Benefits for the sexual partner and children

Assisted partner notification for HIV index testing services were evaluated and seen to have benefits for the sexual partner. APNS have the potential to maximize the proportion of partners/children who are notified of their exposure to HIV and further allow HIV-exposed

partners and children to get tested for HIV [10]. A number of both qualitative and quantitative studies done in sub-Saharan Africa suggested the same; that partner notification services increased the number of partners and children tested and diagnosed with HIV [11-13]. In a randomized open-label trial conducted in Malawi on partner notification and systematic program data review conducted in Cameroon, both studies showed an additional increase of testing among men after notification for HIV index testing [12,13]. Assisted partner notification for HIV index testing services increased the number of sexual partners and children linked to HIV treatment and care [10]. One qualitative study conducted in Tanzania indicated an increased linkage to treatment rate of 70% amongst the partners tested [11,13]. Assisted partner notification for HIV index testing approaches such as dual referral which takes into consideration of couple counselling promotes high acceptance of results and treatment among sexual partners, reducing blames and marriage break ups [9,14-15].

1.3.4.3 Benefits at community level

At the community level, partner notification for HIV index testing services serves as an effective case-finding strategy and further provides for HIV-positive partners and children to access HIV treatment, as well as reduce HIV-related disease and mortality [10]. In one of the studies conducted in Tanzania assisted partner notification resulted in an increased HIV case detection of 62 % among sexual partners of the index clients [11]. In the perspective of health systems, assisted partner notification for HIV index testing was also a proven cost-effective strategy for the identification of HIV positive cases [14]. As emphasized by Wamuti *et al* [14], assisted partner notification for HIV index testing is a more cost-effective strategy to reduce future rates of HIV transmission than passive partner notification for HIV index testing as it aids early diagnosis and

treatment of partner(s) and children found to be HIV-positive. Results from the two studies conducted in Kenya showed that assisted partner notification reduced new HIV transmissions by 12% with an incremental cost ratio of 4, 106 USD [14,16].

1.3.5 Consequences of declining assisted partner notification services

Although WHO recommended APNS in the 2016 supplementary guidelines, by 2016, only 67 of the 123 countries had a policy on assisted partner notification for HIV index testing services [10]. As highlighted earlier on, failure to implement APNS risked some disadvantages at multiple levels in countries that did not have policies on the same. The research categorised the consequences of declining assisted partner notification for HIV index testing at the individual, partner, and community level.

1.3.5.1 Consequences to the index patient

The WHO 2016 guidelines on partner notification alluded to the fact that low uptake of assisted partner notification for HIV index testing services at the individual level risks late diagnosis of HIV positive cases which consequently increases HIV transmission, morbidity, as well as mortality [10]. This emanates from the fact that if APNS is not utilised, the whole responsibility of disclosing and inviting a client to a facility or community testing rests in the hands of the index client, such that when index clients do not disclose their HIV status, partner return for testing is reduced [11,17]. Program data for Malawi index testing program reported a 15% client return when APNS was not used [7].

1.3.5.2 Consequences for sexual partners and children

Observations that were made confirmed that where assisted partner notification for HIV index testing services were not implemented, there was reduced notification for both sexual partners and children. This resulted in a reduction in the proportion of sexual partners being tested and diagnosed with HIV [10-11,17]. In one systematic data review conducted in Central Asia, implementing passive partner notification resulted in partner recruitment and testing of 0.5 per index during the pre-PNS phase of the study. On the other hand, when the APNS phase was introduced, the number of partners recruited per index client increased to 1.5 [18].

Assisted partner notification for HIV index testing services have been associated with increased risk of Intimate Partner Violence (IPV) or social harm [10,18-21]. Even though different studies that have been conducted have commented on IPV occurrence, the WHO, whilst admitting that IPV may occur, reported that its incidence was very rare [10]. Several randomized controlled trials and cluster randomized controlled trials reported a few instances of violence or harm [10,18-21]. Reported incidents of harm in randomised controlled trials in Kenya and Malawi appeared not to be associated with HIV partner notification services, as they occurred before the intervention [9-10]. In the perspective of the researcher, most often fears about social harm are of particular concern in situations where one partner is economically dependent on the other and fears losing social (loss of marriages) and financial support. Furthermore, the researcher perceived that in routine implementation of HIV active index testing (assisted partner notification for HIV index testing) in Malawian setup, IPV did occur but it was under-reported. Trained providers should actively look for IPV through IPV screening tools to reduce its occurrence and actively manage it using a multisectoral approach.

1.3.5.3 Consequences for the community

There are consequences that the community and the country at large face in the quest to attain epidemic control when countries implement passive partner notification services rather than assisted partner notification for HIV index testing services. Failure to implement assisted partner notification services risked a reduced number of cases being identified [10-11,18]. Malawi had been implementing passive partner notification services until March 2019 when a policy to implement APNS (also called Active Index Testing) was made. One of the reports by the Malawi Ministry of Health reported a low HIV yield of 1% after the provision of passive partner notification for HIV index testing [7]. At the policy level, countries that run HIV index testing programs but implemented passive notification and rather assisted partner notification risked implementing index testing program at a high cost. One study conducted in Kenya indicated that the cost incurred to identify one positive was higher with passive partner notification services [14]. In the study, it took 27.4 clients to be tested for HIV to get one positive client with passive partner notification than 8.3 clients with assisted partner notification for HIV index testing [14]. In the perspective of the researcher, if Malawi doesn't optimise assisted partner notification for HIV index testing, there is a risk of identifying fewer positives through HTS, low linkage of positive to treatment, and failure to achieve the 95-95-95 treatment targets for epidemic control by 2030.

1.3.6 Facilitators for the uptake of assisted partner notification services

Many factors facilitated the uptake of assisted partner notification for HIV index testing services. The research thematically categorised them into individual, social-cultural, and health systems factors.

1.3.6.1 Individual factors

Evidence from qualitative studies and systematic reviews done in Malawi and Uganda highlighted that uptake of assisted partner notification was facilitated by individual knowledge of the benefits of partner notification for HIV index testing services [9,22]. The studies reported that because of awareness, some clients accessed index testing services as they had the belief that doing so would protect their sexual partners from HIV [9,22]. In addition, most indices who accepted partner notification for HIV index services had a positive attitude towards the services. It was observed that individual positive attitudes and positive health-seeking behaviour facilitated uptake of assisted partner notification for HIV index testing services [22].

1.3.6.2 Social-cultural factors

Systematic clinical records review in Ghana reported that uptake of assisted notification services for HIV index testing services was increased based on the nature of sexual relationships [23].Whilst other partners disclosed their HIV status to seek partner support, the review reported that uptake did increase in a cohabitating relationship which may have related to the fact that there may be a feeling of freedom and easiness of which one could easily disengage from the relationship should strife arise [23]. In a qualitative study conducted in South Africa, pregnant women disclosed their results to their sexual partners to seek support and that the partner gets tested and ultimately prevent perinatal transmission and relationship dissolution [21].

1.3.6.3 Health systems factors

Systematic reviews and studies highlighted health system factors as some of the enablers to uptake of partner notification for index testing services. Studies conducted in Kenya and Australia

revealed that good counselling skills facilitated uptake of partner notifications services [14,24]. It was observed that if counselling was done with respect to the autonomy of the index clients, it created trust and increased uptake for assisted partner notification [14,24-25]. In a study conducted in Tanzanian, it was observed that provider counselling created trust between health care workers and clients, and this was key to increased uptake of assisted partner notification [19]. The Australian and Ugandan studies observed that adequate training and support rendered to providers, specifically to improve their posttest counselling skills, was key to increased uptake of assisted partner notification for HIV index testing services [22,24]. Systematic reviews and studies in Malawi observed that couple counselling, and receipt of HIV testing services as a couple facilitated uptake of assisted partner notification services [9, 18]. It was also further observed that uptake in this context was optimized when behaviour change oriented counselling was provided [24]. Behaviour change-oriented counselling draws heavily from theories of motivation [26]. One theory of motivation, incentive motivation theory asserts that people are motivated to accept or assimilate patterns where they perceive rewards [26]. In the context of this research, providers needed to strengthen the provision of motivation counselling skills from which clients could perceive benefits from accepting assisted partner notification services for HIV index testing services.

Systematic reviews and studies showed that when providers actively facilitated the notification process, uptake of index testing services increased [14-15,21,24]. Where the issuance of partner notification slips was actively followed up either through phone or physical contact tracing, uptake of index testing services improved [14,24,27]. It was also observed in qualitative studies conducted in Kenya and Australia that when providers screened clients for intimate partner violence (IPV),

uptake of assisted partner notification services for HIV index testing services was increased among those screened IPV negative [14,24]. Further to this, in the studies conducted in Malawi and South Africa, when health workers took the onus of directly informing the contacts themselves after consenting and IPV screening, more contacts were reached out with HIV index testing services [9,21]. Studies conducted in Australia and Kenya showed that flexible and extended hours impacted positively on uptake of assisted partner notification for HIV index testing services [24-25].

1.3.7 Barriers for the uptake of assisted partner notification for index testing services

There are potential barriers that impeded uptake of assisted partner notification for HIV index testing services. The research categorised them into individual, social cultural, economic, and health systems factors.

1.3.7.1 Individual barriers

A study conducted in Tanzania showed that language was a barrier to uptake of assisted partner notification for HIV index testing services [11]. In the study, some clients used indirect language to inform their partner to have an HIV test which resulted in a partner's failure to get tested for HIV. Most index clients deliberately avoided referring to HIV testing or avoided to disclose that they have been tested such that their sexual partners failed to understand that they needed to seek testing and counselling services [11]. In another study conducted in Kenya, differences in one's education was observed to be a barrier of uptake to partner notification services [28]. In the study, index clients reported about their sexual partners being brought up in rural Kenya where beliefs that HIV was brought about by witchcraft were prevalent. Such being the case, it made the index

clients uncomfortable to disclose their HIV status [28]. Qualitative studies conducted in Kenya and Uganda showed that some index clients declined assisted partner notification services because of fear and shame of knowing their HIV status [14,22]. Once HIV testing results were known, index clients had the perception that people would know that they were HIV positive. According to qualitative studies and systematic reviews conducted in South Africa and Kenya, some indices feared that they would be stigmatised and discriminated against and hence they preferred keeping their HIV status confidential [21,24,28-31].

A study conducted in Malawi showed that thoughts about concordant HIV infection test results were a barrier for uptake of assisted partner notification HIV for index testing services especially if one of the sexual partners was HIV infected [9]. From the study, it was learned that some clients did not go to the facility for HIV partner testing because their sexual partners were confirmed HIV infected as they assumed that they would also be HIV infected since their partners were already confirmed HIV infected [9]. Similarly, in systematic reviews and studies conducted in Malawi and South Africa, sero-discordant results amongst sexual partners were reported to be a barrier to uptake of APNS [21,88-89]. The studies reported that sero-discordant results were perceived to suggestive of one of the partners being unfaithful another with subsequent risk of gender-based violence. Systematic data reviews suggested that some indices declined partner notification services for HIV index testing services by providing misleading addresses so that providers should not reach out to them with notification services [18,27]. It was also reported that the feeling of not being ready for HIV index testing services was one of the individual barriers to uptake of assisted partner notification for HIV index testing services. Two qualitative studies conducted in Kenya reported that many clients felt that they were not ready for index testing services because they

needed time to individually process the HIV positive result before notifying the partner [14,25]. A systematic review reported that clients gave health workers either inadequate or misleading locator details so that they should not be able to reach out to them with partner notification services [5].

1.3.7. 2 Social-cultural barriers

Studies conducted in Africa and systematic reviews in Europe and America reported that uptake of partner notification for HIV index testing services was impeded by fear of disclosure of results and notification requests among sexual partners [5,9, 4,18,21-22,25,28-32]. Some clients failed to disclose their HIV status to their partners for fear of potential conflict in the family [21-22]. Most clients felt that if they would disclose, these conflicts would result in abandonment, marriage breakdown, sexual neglect, and dissolutions [5,9,13-14,19,21,31].

Earlier studies have reported that the nature of partner relationships negatively impacted the uptake of partner notification for HIV index testing services [19]. It was reported that a relationship that ended after domestic violence or ended a long time ago was a barrier to assisted partner notification as most clients were not willing to contact their former sexual partners [19]. Furthermore, in instances where the nature of sexual partnership was with a sex worker, many clients refused to notify the partner as the relationship was mostly casual and did not have their details making it difficult to notify them [24,27]. Some studies and systematic reviews in Tanzania and Ghana reported that in undervalued relationships, for example where there was no child in the family, most male clients were not compelled to notify the partner about HIV index testing services [19,23]. The belief was that if a family had no biological child, then it was not a stable relationship [19,23].

In studies conducted in Malawi and South Africa, it was reported that one key barrier to uptake of assisted partner notification for HIV index testing services was gender marginalisation [9,21]. The study observed that some female clients could not disclose assisted partner notification for HIV index testing because they did not get approval from their husbands to seek medical services, a common feature in Africa where men are decision makers [9,21]. It was observed that in some cultures, women had to seek prior authorisation from men to get HIV testing services. The study further reported that related to the same context, male index clients could easily tell their female sexual partners about HIV index testing without marriage problems, but was not the same for female index patients who ended facing marriage conflicts, gender-based violence, and dissolutions after notifying their male sexual partner [9,21].

In a study conducted in Kenya, it was reported that religion and cultural communication factors were the other social-cultural barriers to uptake of assisted partner notification for HIV index testing services [28]. Study respondents argued that church leadership played a role in discriminating HIV infected clients once they knew that a congregant was HIV infected [28]. In the study, it was further reported by several participants that some mechanisms of navigating cultural expectations and morals, and the process of actually communicating their status to their partners posed as potential social-cultural barriers to uptake of assisted partner notification for HIV index testing [28].

1.3.7.3 Economic barriers

In a qualitative study conducted in Uganda, it was observed that economic barriers reduced uptake of assisted partner notification for index testing services [22]. It was observed that some men never

sought HIV testing service after notification as their nature of work precluded them from going to the health facility [22]. Some men did not come for partner testing as a result of the clinic operating hours coinciding with their working time [22]. It was also reported that some men failed to come for index testing services because their work was demanding. In the context that most facilities had long waiting times before getting services, more men viewed this as a time waster against their quest for economic gains [22]. It was also observed that some index clients, notable women were not comfortable disclosing to their sexual partners for fear of losing economic support [5,19,31].

1.3.7.4 Health system barriers

During the literature review, health system barriers were the most common factors affecting the uptake of assisted partner notification for HIV index testing services. The research categorised them into the following; poor relationship between health care workers and clients, facility structural arrangements and inadequate health care worker counselling skills.

1.3.7.4.1 Poor relationship between health care workers and clients

Studies and systematic reviews from Australia, Sub-Saharan Africa, and Europe found out that the poor relationship between health care workers and clients impeded uptake of partner notification for HIV index testing services [5,14,22,24]. The research and systematic reviews reported that some providers were perceived to lack confidentiality as such this resulted in a mistrust by clients who believed that health care workers breached confidentiality and ended up in exacerbated fears of stigma and relationship conflicts [5,14,22,24,]. Some health care workers also highlighted that they received verbal insults and abuse from partners during notification services [14].

1.3.7.4.2 Facility services arrangement

Some facility services arrangements such as inflexible clinic operating hours was a barrier to assisted partner notifications for HIV index testing services [22]. In a study conducted in Uganda, men who had work related demands failed to get index testing services because the clinic operating hours were not suitable for them as they coincided with their working time [22].

1.3.7.4.3 Inadequate health care worker counselling skills.

It has been observed that for successful implementation of index testing programs, health care workers such as HIV diagnostic assistants require adequate knowledge and information which could be obtained through off site trainings, in service trainings and mentorship [32] However, sometime providers lacked these skills. A research conducted in Uganda highlighted that inadequate knowledge, counselling skills and techniques were a major barrier to uptake of assisted partner notification services [32]. Some health care workers lacked posttest and behaviour change counselling skills which were essential for motivation of index clients to bring their sexual partners for HIV index testing services.

1.4 Theoretical Framework

As the study sought to explore factors that influenced uptake of assisted partner notification for HIV index testing among new diagnosed HIV positive adults, the social ecological model (SEM) which draws heavily from the ecological models was used as the conceptual framework [33]. The Ecological models provide comprehensive frameworks for understanding multiple and interacting determinants of health behaviours [34]. In the context of HIV testing services, treatment and care,

socio ecological models have been used to analyze factors influencing the success of treatment after successful HIV diagnosis, linkage, and longitudinal retention in continuous HIV care [35].

C-Change, [33] emphasized that the model examines several levels of influence to provide insight on the factors that act as barriers to a phenomenon as well as finding tipping points that can influence change. The model consists of two parts; the levels of analysis and cross cutting factors. The level of analysis represents both domains of influence as well as the people involved in each level and the cross-cutting factors [33]. They include the individual, interpersonal, the community and the outer enabling environment levels. Each level of analysis and the actors/institutions within each level are influenced by several cross-cutting factors that are also referred as the triangle of influence [33]. The cross-cutting factors include information, motivation, ability to act and norms [33].

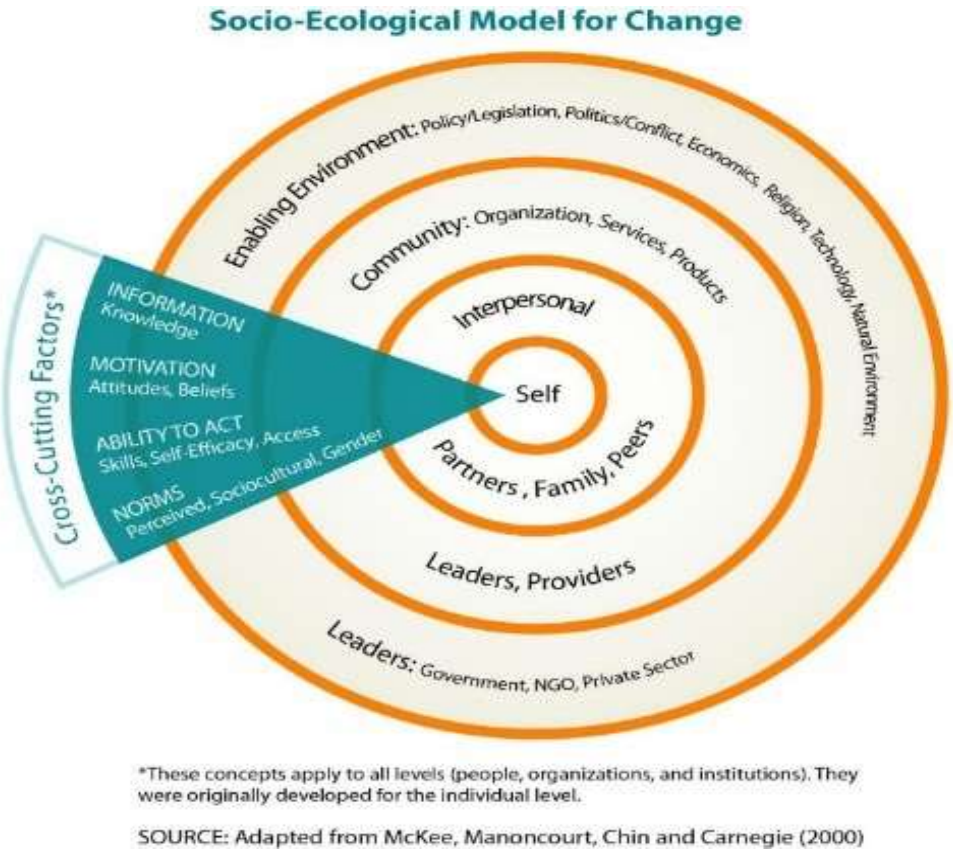

Figure 1: The social ecological model(SEM)

1.4.1 Application of the social ecological model (SEM)

In application of the model to the study, the social ecological model was used to explore and analyse multi-level factors that influenced uptake of assisted partner notification for HIV index testing services. In the context of the research the model supported analysis of facilitators and barriers to assisted partner notification for HIV index testing at the levels of individual, social, institutional and enabling environment.

1.4.1.1 Individual level

The model supported analysis of individual level factors which influenced uptake of assisted partner notification for HIV index testing services. The model helped to explain the dynamics of

knowledge, self-belief, values and perceptions in influencing uptake of assisted partner notification. It also provided insight on the type of strategies, targeting an individual that needed to be implemented in order to increase uptake of HIV index testing services.

1.4.1.2 Social/interpersonal level

At social or interpersonal level, the model espoused on the influence of spouses, family and peers on an individual to accept assisted partner notification for HIV index testing services. The model further explained how gender difference dynamics, sexual relationships and matrimonial issues influenced HIV status disclosure, notification and subsequent linkage to treatment and care.

1.4.1.3 Institutional and community level

At institutional level, the model supported analysis of how health systems, heath care workers and quality of services influenced uptake of assisted partner notification for HIV index testing services. The model also examined how community dynamics such as community local beliefs and practices influenced uptake of assisted partner notification for HIV index testing services.

1.4.1.4 Enabling environment

At the enabling environment, the model supported the analysis of how other policies within the health context affected the active index testing policy and uptake of assisted partner notification for HIV index testing services.

1.5 Significance of the study

As there are few implemented studies that have extended to explore perceptions of sexual partners who did not return for HIV partner testing, this study has the potential to increase the knowledge base as to why sexual partners of HIV index clients do not return for HIV testing after assisted partner notification for HIV index testing services. Implementing findings from this study will support strengthening and identification of new strategies which shall optimise partner testing through assisted partner notification for HIV index testing. It will also improve case identification, treatment and progress towards the attainment of epidemic control in Malawi. Strategies identified could further be adapted by implementing partners working on active index testing in Malawi.

1.6 Objectives

1.6.1 Broad objective

To explore factors that influence uptake of assisted partner notification services in contributing to testing 95% of people living with HIV.

1.6.2 Specific objectives

1. To explore perceptions of new diagnosed HIV infected adults on assisted partner notification for HIV index testing.
2. To assess contextual factors that facilitate uptake of assisted partner notification for index testing services among new diagnosed HIV infected adults
3. To assess factors that impede uptake of assisted partner notification for index testing services among new diagnosed HIV infected adults

4. To assess strategies for optimising uptake of assisted partner notification for HIV index testing services among newly diagnosed HIV infected adults.

CHAPTER 2 : METHODOLOGY

2.1 Introduction

The chapter describes key steps of the study which include study design, research set up, sampling methods, data collection, and data analysis.

2.2 Study Design

As the study sought to explore opinions, perceptions and experiences of providers and clients on APNS, a qualitative study design in a phenomenological tradition was used to explore factors that influence the uptake of assisted partner notification for HIV index testing services among new diagnosed HIV infected adults at Ndirande Health Centre in Blantyre [37].

2.3 Study Place

The study was conducted at Ndirande health centre, a primary health care institution operating under Blantyre district health office. It is located approximately 5 km southwest of Blantyre city, a city with an HIV prevalence of 17.7% [2]. It has a catchment area of 145, 187 people [38] and provides HIV testing and counselling services to an average of 1 740 clients in a month [39]. Available data at Ndirande health centre indicated that from June 2018 to September 2019, 637 new HIV infected (index) clients were identified and confirmed HIV positive [36]. Out of the 637 clients, 84% of the clients accepted partner notification for HIV index testing services [36]. A total of 1064 contacts were elicited, and 990 were notified for HIV index testing services either at the facility or at their homes. However, despite active phone and physical notifications, only 33% of the elicited contacts did return or were reached out successfully with HIV testing services [36].

Operating on an outpatient basis, the facility offers services such as family planning (FP), maternal child health (MCH), antiretroviral therapy (ART), early infant HIV diagnosis (EID), nutrition and rehabilitation, laboratory services, antenatal aare, HIV testing services, Tuberculosis screening, and dental therapy services. The facility is supported by 79 trained medical personnel of various cadres and 20 support staff. They include 2 medical officers, 7 clinical officers, 25 nurses, 8 medical assistants, 1 environmental health officer, 23 health surveillance assistants (HSAs), 6 HIV diagnostic assistants (HDAs), 2 health management information system officers, 4 laboratory technicians, 1 dental therapist and 20 support staff (clerks, patient attendants, cleaners). The selection of the study location was on the premises that the facility had been reporting low partner return after assisted partner notification for HIV testing services (33%), feasibility and accessibility of the place since the researcher supports HTS services at the facility and would have few logistical challenges during implementation.

2.4 Study Population

In the research, the study population included index clients who were seen between June 2018 - December 2019 and confirmed HIV infected and provided with assisted partner notification services. The study population also included sexual partners of index clients who either returned or did not return for HIV partner testing after being notified for partner notification services either by the index clients or health workers. The study population also included facility health workers who have been providing HTS and index testing services at the facility for more than 3 years.

2.4.1 Eligibility criteria

2.4.1.1 Inclusion criteria

1. Newly diagnosed HIV positive adult clients
2. Sexual partners of index clients who either returned or did not return for HIV index testing services after assisted partner notification
3. Health workers involved in providing HIV testing and index testing services for more than 3 years
4. Ability and willingness to give consent for participation in the study.

2.4.1.2 Exclusion criteria

1. Newly diagnosed HIV positive clients below 18 years
2. Sexual partners of index clients who either returned or did not return for HIV index testing services but have not provided consent
3. Index clients who did not give their consent for participation in the study
4. Health workers with less than 3 years' experience in providing HTS and index testing services.

2.5 Study period

Following the approval of the study protocol by College of Medicine Research Ethics Committee (COMREC) [appendix M] in January 2020, the study was conducted for a period of 10 months, February 2020 to December 2020. Data collection and transcription began in February 2020 and ended in June 2020. Analysis and write up began in July and was finalized in December, 2020.

2.6 Sampling method and size

Though literature argues that there is no exact sample that qualitative research should have, rules of the thumb derived from data collection methods and agreed by many authors recommend 12-26 participants [39]. The sample size in this study was 24 participants, dependent on data saturation. Data saturation was attained when the study had enough information as evidenced by the fact that no new information other than what was collected came out from the study participants [40]. When the researcher reached 24 participants , recruitment for the interviews was stopped. As the study sought to have a diverse range of cases and as much insight into the study, maximum variation purposive sampling was used [41,42]. Purposively, participants were selected for the study, and their social demographics such as age, gender, marital status, education, occupation, religion, and the type of notification approach they received either from the index client or the provider were considered. Based on data saturation, the study recruited 24 participants of whom nine were HIV index clients who accepted APNS;10 contacts of index clients, and five health care workers.

Table 1: Nature of study participants

Type of Client	Number	Rationale
Index Client	9	Provided in-depth information on the reasons why index clients notified or denied to notify their sexual partners on APNS
A sexual partner that accepted APNS	6	Provided in-depth information on the reasons why sexual partners accepted APNS and came for testing
Sexual Partners that refused/did not show up after APNS	4	Provided in-depth information on the reasons why sexual partners refused or did not come for HIV testing after APNS
Health Care Worker/ Key Informants	5	Provided key information on service provision, health systems facilitators, and barriers to uptake of APNS

2.6. 1 Identification of study participants

2.5.1.1 Identification of index clients

Clients who were offered HTS in all service delivery points of Ndirande health centre, and then confirmed to be HIV positive (index) were entered in the voluntary assisted partner notification (VAPN) index register. All indices were screened for intimate partner violence (IPV) to determine eligibility for either assisted partner notification for HIV index testing services or passive notification services. Clients screened IPV negative were offered assisted partner notification approaches (CR, DR, and PR) whereas those screened out positive or refuse APNS were offered passive notification approach (FR). Indices were helped by the provider to list all sexual partners

within 12 months and children below 12 years and provide voluntary consent for the providers or the index himself to do the notification within the agreed 2 weeks' time frame [10]

Using maximum variation purposive sampling, 9 prospective index study participants who were confirmed HIV infected between June 2018 and December 2019 were identified from the VAPN index register. Index clients were reached out to physically or through phone and those that agreed to participate in the study were offered an opportunity for discussion at the health facility or at any place of their convenience where details of the study were discussed with them and their consent to participate in the study sought.

2.6.1.2 Identification of sexual partners/contacts

With the support of HTS providers, eligible indices voluntarily elicited their sexual partners (spouses, stable and casual sexual partners) within 12 months and children below 12 years for index testing as outlined in the Malawi ministry of health index testing policy [8]. All sexual contacts and children were entered into the VAPN index register. The index client chose a suitable approach for any of his or her contacts and provided consent to the provider to reach out to his/her sexual partners based on the preferred APNS approach. When contacts returned for partner testing at the facility or if providers reached out to the contact and provided partner testing in the community, their HIV testing outcomes were documented in the VAPN contact register and VAPN index register was also updated at the same time. Clients who did not return after being reached, not reached or refused testing were updated of their outcomes in the VAPN index testing register. Through both the VAPN index and contact registers,10 sexual partners who either returned for HIV testing or refused HIV testing were purposely identified as study participants. Like with the

index study participants, contacts who were enrolled in the study fell within the same period. Sexual contacts who agreed to participate in the study were offered an opportunity for discussion at the health facility or at any place of their convenience where details of the study were discussed with them and their consent to participate in the study was sought.

2.7 Data collection

Semi-structured open-ended in-depth interviews (IDIs) and key informant interviews (KIIs) were used to collect data from the eligible study clients and health workers respectively [37]. Collected data included detailed providers' and clients' accounts, perceptions, opinions, beliefs, and attitudes about assisted partner notification for HIV index testing [43]. Data collection tools were designed in both english and chichewa (see appendices C to G) and pretested at South Lunzu health centre and refined to collect information congruent to the study objectives. Data collection tools had two parts, part A contained demographic data whilst part B contained guiding qualitative questions to elicit facilitating factors and barriers to uptake of assisted partner notification for HIV index testing at various levels as outlined in the theoretical framework.

2.7.1 In-depth interviews

In-depth interviews (IDIs) is a data collection technique used in qualitative research to which it is designed to elicit a vivid picture of the participant's perspective on the research topic [44]. IDIs are conducted face to face and involve one interviewer and one participant in the participant's real-life setting, where a respondent feels free to talk. IDIs are conducted to explore views, experiences, opinions, beliefs, and/or motivations of individuals on specific matters, for example, factors that influence APNS uptake [45,46]. IDIs provide for detailed exploration of a single respondent's

reactions and opportunities to probe beyond a simple answer and clarification of ambiguous replies than a focus group discussion would do [47].

FHI [44] alludes that in-depth interviews are useful for learning about the perspectives of individuals, as opposed to group norms of a community, for which focus groups are more appropriate. IDI are an effective qualitative method for getting people to talk about their personal feelings, opinions, and experiences [45]. IDIs are also especially appropriate for addressing sensitive topics that people might be reluctant to discuss in a group setting [47]. In the study context, the researcher sought to get sensitive HIV related opinions, perceptions, views, and beliefs from respondents who either refused or accepted to be initiated on HIV treatment, IDIs was the ideal method of data collection [45]. In the study, IDIs allowed the researcher to get detailed insights from the respondents as to why they either refused or accepted APNS. As the interviews were conducted face to face between the interviewer and the respondent in their naturalistic setting, IDIs provided an opportunity for the researcher to get a deeper understanding and more information from the little that was known as regards facilitators and barriers to uptake of APNS [45,46].

2.7.2 Key informant interviews

Key informant interviews (KII) are a type of qualitative in-depth interviews with people who are knowledgeable of the subject matter in the community [48]. KIIs involve face to face or phone interviewing of a selected group of individuals who are likely to provide the needed information, ideas, and insights on a particular subject [49]. Kumar, [49] contends that KIIs involve interviewing a selected few numbers of informants who possess information or ideas that can be

solicited by the investigator. KIIs primary goal is to obtain a qualitative description of perceptions or experiences, rather than measuring aspects of the experience [50]

According to Kumar [49], KIIs are used in qualitative studies for a different number of reasons. KIIs are used in studies that seek to get information about a pressing issue or problem in the community from a limited number of well-connected and informed community experts. Kumar [49] further alludes that KIIs are also used to understand the motivation and beliefs of community residents on a particular issue. KIIs allow for open-ended and probing questions, such that they are used to get sensitive information, opinions, and perceptions from people with a diverse background which couldn't be obtained when focus group discussions are used [37].

In the context of the study, the researcher sought in-depth, candid, and sensitive information on the uptake of APNS, such that KIIs were the ideal methods of data collection. In the study, KIIs were used as the approach provided for direct information from the HDAs, who were the knowledgeable people on the subject matter. The KIIs with HDAs provided the researcher with data and insight that couldn't be obtained using other methods such as focus group discussions [48]. KIIs with HDAs offered the researcher information, incidents, and local happenings that wouldn't be revealed in other settings. Secondly, KIIs were used by the researcher as the approach provided the researcher with the flexibility to explore new ideas that were not anticipated during research planning and the original interview guides. KIIs also served the advantage of being the least expensive as they were easy to conduct with a minimal budget, time, and just transport support for the interviewee, which was suitable for this study.

During the data collection, we conducted 19 IDIs with index clients and contacts and five KIIs with health care workers. As opted by study participants, all the IDIs and KIIs were conducted in the vernacular language. All interviews were audio-recorded and were done at the health facility as opted by the study participants. Unique identifiers were ascribed to the interview records to maintain the confidentiality of the clients.

2.8 Data management

To ensure consistency and quality, audio recorded IDIs and KIIs were listened to 3 times before transcription. Whilst listening to the audios, the researcher translated the content from Chichewa into English and then transcribed the data verbatim. Translated transcripts and audio recorded data were stored in researcher's file and computer protected by password while back-up data was stored in a second computer of the researcher.

2.9 Data analysis

Audio recorded IDIs and KIIs were listened to for a minimum of three times before transcription. Verbatim translated data from chichewa to english was listened to several times to allow for data familiarisation and transcription. Manual data analysis begun with familiarisation with the breadth of the data set and ensured accuracy. The researcher used deductive content analysis with reference to the theoretical framework and inductive content analysis to identify new meanings and categories in the data not incorporated in the theoretical framework [51,52]. Inductively identified themes are strongly linked to the data despite not being linked to the researcher's theoretical interest in the topic [51]. In contrast, deductively identified themes may be less rich in providing overall data description but tend to be driven by the researcher's theoretical framework [51]. The

researcher read the transcriptions, realised concepts, and organised them into codes [36]. A coding frame was developed and included the identified code, descriptor, and example of the descriptor to support the development of categories. Themes were isolated for the categories by examining the relationship and how iterative the categories were [51].

Driven by the knowledge realised through literature review the researcher made most of the themes deductively and fitted them into the predetermined theoretical framework, the social ecological model (SEM). However, few themes were made inductively as the researcher identified them whilst he went through the data many times. Whilst going through the data repeatedly, the researcher identified new emerging data-driven themes that were not predetermined by the SEM. The researcher sorted and organised different and related codes from the coding frame and developed them into broader themes and discarded non-related themes [37]. The researcher ensured there was enough data to support the themes, collapsed themes that looked the same, and reflected quotes from the interviews to support the conciseness of the report [53].

2.10 Data credibility and dependability

The researcher deployed member checking for the participants to support the determination of the accuracy of the data by reading out summaries of the interviews to the study participants to allow them to check if the records matched with what the participants themselves said during data collection [54]. The researcher also ensured data dependability as he kept the detailed records that would provide room for another researcher to conduct a similar study within the same context and replicate results [55]. In the research, transferability was achieved by giving a detailed account of

the methods and setting of the study context to allow researcher who would want to do a qualitative generalisability in other contexts or setup [37].

2.11 Ethical considerations

The study obtained informed consent from all study participants in line with principles of autonomy, beneficence and respect for human dignity [56]. The study ensured confidentiality and privacy of the clients throughout the study by using unique identifiable numbers and not respondents names. The study did not provide monetary incentives, apart for transport reimbursements (Appendix A & B). The study did not encounter any social harm, however, for risk mitigation, the study had HDAs readily available to support with counselling and social harm management in case the need arose. As all study participants were able to read and write, they were offered the consent form to read so that they would understand and be informed of the overall study objectives and benefits. As their rights entailed, participants were informed of their right to withdraw from the study any time they would have intended without any punitive measures against them. Questions were posed in a respectful and non-embarrassing manner and all interviews were conducted at the health facility and over the weekend as determined by the respondents.

2.12 Ethical approval

Ethical approval to conduct the research was provided by college of medicine research and ethics committee (COMREC) [appendix M]. Director of health and social services (DHSS) for Blantyre, approved the the study to be conducted at Ndirande health centre (appendix K).

CHAPTER 3: PRESENTATION OF RESULTS

3.1 Introduction

The chapter presents and outlines all the research findings after data collection and thematic analysis. The research describes factors that emerged following interviews among participants who were tested HIV positive and accepted assisted partner notification services (APNS), sexual partners of index clients who accepted APNS, and health care workers who provide HIV index testing services. The research highlighted the description and perception of APNS, barriers, and facilitators to increased uptake of APNS and suggested strategies for the optimisation of APNS. The key study results have been presented in three categories which are description of APNS; barriers and facilitators to increased uptake of APNS (individual level, interpersonal level, community and organisation levels, and enabling environment) as highlighted in the social ecological model (SEM) and strategies for optimisation of APNS uptake.

3.2 Socio demographic data for study participants

A total of 24 consented respondents were reached in the study. There were five HIV Diagnostic Assistants (HDAs) key informants with more than three years of works experience and 19 clients. Three were males and their age range were from 28-43 years, such that the median age was 41 years. In the client's group, nine were index (HIV positive) clients and 10 sexual partners (contacts) of different indices who accepted APNS. The study had 19 study respondents whose age range was from 33- 48 years. The median age of the study 33 years and the interquartile range (IQR) 29-38 years. In the context of sexual contact response after notification, six clients accepted

APNS and reported for HIV testing, whilst four refused APNS and did not report for HIV testing services.

Table 2: Demographic characteristics of study participants

Variable	Index	Sexual partners (contacts)
Gender		
Male	4	4
Participant's Age		
18-20	0	0
21-30	2	2
31-40	4	6
41-50	3	2
Level of education		
Did not attend school	0	0
Primary	3	3
Secondary	6	7
College	0	0
Residence		
Rural	4	4
Occupation		
Unemployed	0	0
Self-employed	6	8
Employed	3	2
Marital Status		
Single	0	1
Married	7	7
Divorced	1	2
Widow	1	0

3.3 Description and perception of assisted partner notification

In analysing the data, it emerged from IDIs and KII that clients' meaning of APNS was more focused on description, advantages, and disadvantages. Respondents highlighted that APNS involved the index patient disclosing his HIV testing results to a sexual partner with an aim that the partner should also go for testing. A male partner respondent who accepted APNS said:

"As my wife had put it that when you are confirmed HIV positive, the sexual partner, either the husband or the wife in the family is also supposed to be tested for HIV inclusive of children."

From the KIIs, whilst health care workers highlighted on APNS (AIT in Malawi context) being a new policy effected by the ministry of health, it was observed that the meaning of APNS from the health care workers perspective did not differ with the perception of the respondents. Health care workers highlighted index testing involved the index eliciting his/her sexual partners, disclosing his status to them, and support his/her partner to get tested for HIV after the notification. A health care worker key informant said:

"It's a new policy put by the ministry that when someone is tested HIV positive, he should reach out to his sexual partner so that they are notified, offered HIV testing. On assumption that they are tested HIV positive, they should be counselled to start ARVs."

3.3.1 Client and family-centered approach

From the IDIs, many respondents expressed APNS as both a client and a family-centered approach. Respondents highlighted that APNS supports the index to disclose his results to his/her sexual partners. APNS supports sexual partners and their children to get tested for HIV, know their results, and those who test positive are then put on treatment. A female index who accepted APNS said:

"I wanted him to benefit from the treatment so that he may prolong his life. I also brought the children for testing, and they tested HIV negative."

From the KIIs, it was observed that health care workers shared a similar view given by the respondents on the benefits APNS had on the index, his partners, and the community. Health care workers highlighted that index testing maximises HIV testing of a sexual partner and biological children and increases chances of linking those confirmed positive to treatment and care. A health care worker key informant said:

> *"As for the index, he will know his status, support him to disclose his status as well as him knowing the status of his or her partners. Partners who tested positive are linked to treatment where if suppressed, future transmission rates will be reduced"*

3.3.2 Coercive intervention

From the IDIs, it emerged that some respondents perceived APNS as an approach that forces them to have an HIV test when they were not ready and unprepared. From the KIIs, health care workers reported respondents saying that they reach out to notify the clients whilst they are not expecting as such they felt as if they were disturbed. A middle-aged male partner who refused APNS said:

> *"I refused when my wife notified me because it was like am being forced to have the test. Time will come when I will be sick, I will have the test then."*

When the researcher highlighted the opinions of the respondents that APNS was coercive, health workers denied that the approach is coercive. They argued that clients are counselled and offered the APNS on an opt-out basis and that for those that they reached out to, it was done in the context

of taking services to the community where they are needed. A health care worker key informant said:

> *"Some may perceive as if we are forcing them, but the truth is that we do counsel them, offer a test, and highlight to them that we are not forcing them to have a test, but following them because we appreciate that they are busy. They should no have the trouble of coming to the facility, but we take the testing services to them on an opt-out basis."*

3.4 Barriers and facilitators to uptake of APNS

The barriers and facilitators of APNS as revealed from the research findings were further presented using thematic analysis and the social ecological model (SEM). Major themes used to analyse the findings included personal, social, health care worker related, economical, and policy factors. The findings were further categorised into individual, interpersonal, organisational/institutional, and enabling/policy environments levels of the SEM (Tables 4-5).

3.4.1 Barriers to APNS uptake

3.4.1.1 Personal factors

In analysing the study findings, major personal factors that posed as barriers to uptake of APNS included gender, client's knowledge on APNS and HIV, and wrong physical addresses and phone numbers.

3.4.1.1.1 Gender

From the data analysis, gender emerged as one of the barriers to uptake of assisted partner notification for HIV index testing at an individual level. From the KIIs, it was observed that more female index clients had problems with notifying their sexual partners for fear of negative repercussions from their male sexual partners which affected partner return for testing. A middle-aged female index client who refused APNS said:

> *"I looked at how I stay with my husband, the way I know him, It would was better to just stay quite. If I would have informed him of the results, the story would have been very difficult. I am sure the the marriage would have gone into dissolution"*

Health care workers shared the same opinion that women often get problems to notify their sexual partners and come for partner testing. A health care worker key informant said:

> *"From my experience, there is a difference in such that if the index is a male to notify the female partner, the wife accepts the notification and many reports for partner testing but if the index is a female, few men accept the notification. We do observe these trends in the registers each time we review the sex of contacts who came for testing after notification."*

3.4.1.1.2 Clients' knowledge of APNS and HIV

3.4.1.1.2.1 Lack of knowledge on APNS among partners of index clients.

From the IDIs, lack of knowledge on APNS among the indices and partners emerged as one of the key barriers to uptake of assisted partner notification for HIV index testing occurring at the

individual level. From the analysis, it was observed that lack of knowledge of APNS, general HIV transmission, and time to have an HIV test were the key knowledge deficits among the respondents, in particular those that refused APNS. From the IDIs with the respondents, some of the partners who refused APNS disclosed that they lacked adequate information that would have supported their knowledge base and decide on whether to accept APNS or not. A middle-aged man who refused notification from his spouse said:

> *"I just heard about it in passing as such I didn't think much over it. That's why I am saying if I could discuss at length with the provider to get an in-depth understanding of it (APNS), maybe I would. But at the moment, it would be difficult to have this test, let alone treatment."*

From the study findings, clients who refused APNS and some of the index clients who accepted APNS but did not notify their sexual partners were observed not to understand the general transmission of HIV. Some of the male partners believed that because their children were born HIV negative then they were equally HIV negative even though their female partners were HIV positive female. A middle-aged male partner who refused APNS said:

> *"When I saw the results of my child, I concluded that my HIV test should be negative as well since my child was born HIV non-infected. If I were HIV positive, the child should have also been positive."*

From the IDIs, some other clients reported that it wasn't the right time for them to have an HIV test as they felt they were not ready for an HIV test. Both indices and partners who refused APNS seemed not to perceive themselves as being vulnerable as they highlighted that they never saw the reason to have an HIV test and subsequent treatment when they felt healthy. A male partner who refused APNS said:

> *"I would opt to stay the way I am. Moreover, I haven't been ill at all cost, why should I test? I don't see the reason for me to have an HIV test when I am not sick.*

3.4.1.1.2.2 Belief in other HIV medical preventive methods

In analysing the data, belief in other medical preventive methods emerged as the other barrier to uptake of assisted partner notification services occurring at the individual level. From the IDI with one of the clients who refused notification for testing from his spouse, it was highlighted that he had the conviction that he was HIV negative as a result of the circumcision he received a long time back, despite not having an HIV test. A male partner who refused to test said:

> *"I got the HIV preventive circumcision some time back and my sexual behavior had been good. Even though I haven't tested for HIV as of late, I am convinced that I am negative. The HIV positive results are for her."*

3.4.1.1.3 Wrong physical addresses and phone numbers

Wrong physical addresses and phone numbers provided by index clients came out as one of the barriers to the uptake of assisted partner notification services. From the KIIs, it was reported that

some of the index clients gave the provider the wrong locator details, which included phone numbers and physical addresses. Key informants highlighted that some of the index clients gave out wrong phone numbers so that their contacts could not be reached and notified. Health care workers reported that other clients provided wrong locator details as the elicited contacts were casual sex partners or married and would not want the provider to reach the partner whilst others did not know where the sexual contact stayed. It was also reported that wrong details also emanated from frequent relocations of clients from one area to the other, more common in the urban than the rural areas. A health care worker informant said:

> *"They give you the wrong physical address because some of them know that their sexual partner is a married person. So, should they give us the correct locator details, the contact might suspect her. For fear of loss of a relationship or financial support, they give wrong details so that he is not traced, notified, and offered to test."*

3.4.1.2 Social factors

In analysing the study findings, the major social thematic factors hindering the uptake of APNS included disclosure of results to others, state of the relationship, family support, and pattern of notification.

3.4.1.2.1 Disclosure of results to others

Non-disclosure of one's HIV status was a major thematic area affecting the uptake of assisted partner notification for HIV index testing occurring at the interpersonal level. Non-disclosure of results emanated from fear of intimate partner violence, fear of marriage dissolution, fear of loss

of financial support, fear of sexual neglect, fear of blame for the infection, and fear of stigmatisation.

3.4.1.2.1.1 Non-disclosure for fear of intimate partner violence (IPV)

From the study results, gender marginalisation emerged as one of the key factors to support the development of intimate partner violence, a key barrier to uptake of assisted partner notification services at the interpersonal level. From the IDIs, it was reported that some women were victims of gender-based violence (controlling behaviour) as a result of gender marginalization. It was reported by some respondents, in particular partners who refused APNS that they couldn't accept the notification done by their female index spouses as they did not approve them to have an HIV test at the facility. A male sexual partner who refused APNS said:

> *"I didn't allow her to go to the facility for HIV testing, as I discussed with her at length on malaria testing. I only approved of Malaria testing and she ended up doing HIV testing which contributed to the quarrel."*

Both IDIs and KIIs highlighted intimate partner violence as one of the key barriers to uptake of assisted partner notification services. It was observed in the study that forms of IPV mostly occurred to women and included threats of violence, physical beating, sarcasm, and chasing them away the marital home. For the threats, respondents reported that they perceived these threats coming into reality once they disclosed their HIV status. A female index who accepted APNS but never disclosed said:

"He regularly says that I am a prostitute whilst it's him womanizing. So, if he does this when there is no problem, what about bringing him the issue that I tested HIV positive?

From the IDIs, as a result of intimate partner violence, it was observed that many women did not disclose their HIV results for fear of marriage dissolution, loss of economical support, fear of sexual neglect, and being blamed by a sexual partner.

3.4.1.2.1.2 Fear of marriage dissolution

In analysing the interview data, fear of marriage breakdown or resolution emerged as one of the key social barriers to uptake of assisted partner notification services. From IDIs with index clients, partners who accepted and refused APNS, it came out that many women and only one male respondent reported non-disclosure to their sexual partners as a result of fear that their spouses would end the marriage. A female index who accepted APNS and never disclosed to his partner said:

"I was already tested HIV positive at the time I was marrying my husband. I just couldn't disclose to him for fear of being blamed, beaten, and chased away. Up to now, I am yet to disclose."

A male index client who accepted APNS but did not disclose to his sexual partner till she self-discovered said:

"I used to hide the drugs when taking them so that she should not know that I tested HIV positive and I was on treatment. I knew that once I told her she would be angry, break the marriage and leave"

The health care worker's key informant shared the same opinion with respondents that index clients do not disclose their HIV status for fear of being beaten and chased away. Health care workers highlighted that, from their observation issues of intimate partner violence occur more commonly when the female index is to notify the male spouse rather than when the man is the index to notify a female spouse. A male sexual partner who refused APNS said:

"After the notification, the quarrel was so intense that it would have ended me beating her. To avoid this, I only sent her away from me so that she goes to the place where she took the infection."

3.4.1.2.1.3. Fear of loss of financial support

From the data analysis, fear of loss of financial support came out as the other barrier to uptake of assisted partner notification for HIV index testing. From the IDIs with index clients as well as partners who refused APNS, only women reported failure to disclose to their sexual partner for fear of losing economic support. KIIs with heath care workers also pointed at situations where some female index clients who were stable partners of some married men refused to notify their sexual partner for fear of loss of financial support. A female index who accepted APNS and disclosed to his partner said:

"You may have the will to do the notification to your husband, but you might fail as you will end up losing financial support. I tell you, some men are violent, and I am a witness to this."

Their opinion was shared by a health care worker who reported that some women happen to have sexual partners who are already married. Health care workers contended that such women were afraid to disclose their HIV status to the partner for fear of loss of economical support amongst other reasons. A health care worker informant said:

"Sometimes, the sexual partner is a married man. Should they give out correct details and providers reach out to him, he may suspect who have out his name and for fear of loss of economic support, they prefer to give out the wrong address so that we don't reach him."

3.4.1.2.1.4 Fear of sexual neglect

From the IDIs with respondents, some clients highlighted that they failed to disclose their HIV results as their husbands would sexually neglect them. Some index clients also reported having unprotected sex with their sexual partners for fear of the partner getting suspicious and later sexually neglect them. A female index who accepted APNS but did not disclose it to his partner said:

"He would have just stopped having sex with me. He would have justly simply said that since you have already infected me, let us just stop having sex in this family and he continues having sex outside marriage."

3.4.1.2.1.5 Fear of being blamed for the infection

From the IDIs with index clients and partners who either refused or accepted APNS, it was reported that many were afraid of disclosing their results since some of their partners discouraged them from their risky sexual behavior. Such being the case, some index clients did not notify their sexual partners of their HIV testing results for fear of being blamed by a sexual partner for infecting them. It was also reported that some of the partners refused to go for testing as they blamed their index for infecting them. Two female partners who self-discovered their partners' HIV status said:

> *"More men often know that it's them infecting the spouse, as such, they try to look confused or surprised and in turn do not or delay the disclosure to the extent that you discover for yourself as it happened in my case."*

> *"He later told me after I discovered that he was afraid I would blame him and remind him of what I advised him when he was cheating on me for a sex worker whom people already claimed she was HIV infected."*

3.4.1.2.1.6 Fear of stigmatisation.

Stigmatisation emerged as one of the key barriers to uptake of assisted partner notification to HIV index testing at the interpersonal level. From the KIIs and IDIs, stigmatisation was observed to have emanated from individual perception and the family or community.

3.4.1.2.1.2.6.1 Stigmatisation from individual perception

From the IDIs, both partners who refused APNS as well as those that accepted APNS highlighted the existence of self-stigmatisation as a barrier to APNS uptake. It was learned that some

respondents were afraid that they would become the center of attraction and gossip after being seen coming out of the HIV testing room. However, from other respondents who accepted APNS, whilst admitting self-stigma, realized later that it was just one's perception and imagination that people would know their results. A female index who accepted APNS said of his partner:

> *"When I notified my partner, he refused saying, if he tested and confirmed HIV infected, how would he go to the facility to get the drugs? He has a lot of friends there and they would see him that he has tested positive and going to HIV treatment room."*

From the IDIs, other respondents disclosed that they were afraid of the perceived meaning of an HIV positive result once they are communicated. Many of them expressed fear of coping with the HIV positive results which in their perception would mean loss of their economic pursuits, overall failure to attain their plans, and impending death. Other respondents also highlighted that they were afraid that when tested and diagnosed positive, they would be enrolled on HIV treatment as such they wouldn't want to be on treatment for fear of the drugs causing reduced sexual drive in them. Some of the respondents attributed this as one reason some of the contacts tend to hide when health care workers trace them actively for community partner testing. A male partner who refused APNS said:

> *"I have never dared to have the test. I know it would be difficult to accept the results. I would be very disappointed to the extent that I will lose much of my weight."*

3.4.1.1.2.6.2 Perceived and experienced discrimination

Stigma from perceived and experienced discrimination was also highlighted by both index and partners who refused as well as those that accepted APNS. From the IDIs, some respondents wanted to have the results to themselves first before they could either disclose or seek supportive HIV services. Other respondents reported experiencing discrimination at the hands of their fellow friends, family, or community. One health care worker informant agreed with the perception having observed that some clients make wrong conclusions in situations where a health care worker physically escorts a client for support services whether confirmed positive or negative. A male and female partner who accepted APNS said:

> *"You are chatting on a different story, but all of a sudden they bring an issue like this one contrary to the subject under discussion and go to an extent of using discriminatory words against a friend."*

> *"Women tend to mock each other if you are HIV positive at the water drawing points. It's not mere thinking and imagination, but experiencing it and hearing from them saying so."*

3.4.1.2.2 State of relationship

From the IDIs, unstable marriage or relationship came out as one of the key barriers to uptake of APNS at the interpersonal level. From the IDIs with both clients who accepted and refused APNS, it was highlighted that unstable relationship or marriage resulted in some respondents failing to notify their partner on the need for index testing. They feared that it would result in gender-based violence issues, such as loss of a marriage. This observation was also highlighted by key informants who commented that such marriages were observed to have no openness and trust

between the sexual partners. A female index client who accepted APNS and but not disclose it to the partner said:

> *"I looked at the way we stay in the family. He always accuses me that I am a prostitute yet is he going out with sex workers. Surely, the marriage would have gone into dissolution if I had notified him of my HIV results and on the need for partner testing."*

Similarly, it was also observed that new marriages and casual relationships were barriers to uptake of assisted partner notification. From the IDIs, it was reported by some index clients that it was difficult for them to notify the partner in a new relationship since the relationship wasn't stable and would end up in dissolution. Some indices also highlighted that they never saw the importance of taking the trouble to do notification to a casual partner when they could just end the relationship. Two index clients who accepted APNS but never disclosed it to their partners said:

> *"At the time I tested HIV positive, I had just married my wife. We were planning to go to the marriage counselor. So, for me to disclose my results, it was very difficult as she would have been disappointed and end the relationship"*

> *"We are not yet married, she is just a girlfriend staying in Dedza. Why should I have the trouble of notifying her? After all, I can just end the relationship."*

3.4.1.2.3 Pattern of notification

Coerced notification and testing emerged as one of the barriers to uptake of assisted partner notification for HIV index testing services. From the IDIs, it was observed that some of the index

clients failed to convince their sexual partners through counselling so that they accept APNS and go for testing. It was observed that, rather than seeking support from health care workers, they seemingly and persistently forced their sexual partners to accept APNS and go for testing which resulted in gender-based violence. A female index who accepted APNS said:

> *"I informed him several times to go to the facility for testing and he kept denying that it's the same old disease and that people used to lose weight in the past. I thought I couldn't cope as he was making my life miserable. We quarreled and I decided he had to leave. My perception was that he had intentions already to leave."*

3.4.1.2.4 Family and peer support

Negative family and peer influence came out as some of the barriers to uptake of assisted partner notification for HIV index testing services. From IDIs, it was observed that some of the indices refused to go for HIV testing and/or were influenced against notifying their sexual partners by their peers. It was learnt that some peers advised their friends not to seek HIV testing services through self-test as they were not reliable. A female index client who accepted APNS said of his sexual partner:

> *"He had friends who used to discourage him not to test. Even when I gave him the HIV self-testing kit to test himself, he refused and said that those kits lie. His friend told him that they give false-positive results"*

3.4.1.3 Health worker-related factors

From the data analysis, the major health-related thematic areas hindering the uptake of APNS at the organisational level included inadequate information provided by health care workers, lack of provider knowledge, skills and attitudes, suboptimal provider-client relationship, and inadequate funds for health care workers to conduct home testing.

3.4.1.3.1. Inadequate information provided on APNS by health care workers

Inadequate information on APNS emerged as one barrier to uptake of assisted partner notification services. From IDIs with respondents who accepted APNS and those that refused APNS, it was highlighted that some of the clients did not accept APNS and return to the facility for testing because they had little information to support their decision making. A male partner who refused APNS said:

> *"I just heard about it in passing that if you are diagnosed with HIV, the partner needs to go to the facility for testing. Apart from that, I didn't hear much. Maybe if someone would have talked to me convincingly about it."*

3.4.1.3.2 Lack of provider knowledge, skills, and attitudes

Lack of provider knowledge, skills, and attitudes was reported as one key barrier to uptake of assisted partner notification for HIV index testing services. From the KII, it was reported by some health care workers that providers who don't have the right knowledge, skills, and attitudes risk giving index clients and partners inadequate information who in turn may not perceive the benefits. This may result in either the index failing to notify the contact or the contact not returning for testing. It was also highlighted by the key informants that providers with less knowledge and skills

risk giving wrong notification methods to the index which ultimately would increase the risk of intimate partner violence occurrence. One of the health care worker informants said:

> *"If the provider is not knowledgeable, he fails to provide adequate and comprehensive counselling. He may also provide a method that requires tracing and home testing when it was not necessary to do so, which in the end puts the client at risk of intimate partner violence."*

Perceived lack of confidentiality emerged as one of the barriers to uptake of assisted partner notification and linked to health care providers who lacked knowledge, skills, and attitudes. From the IDIs, it was highlighted by respondents that they sometimes feared that health care workers would not keep their HIV results confidential when diagnosed positive. Clients further highlighted that such fear existed in a situation when the husband wanted to have a test at a facility where the wife was also enrolled on ART. A male partner who refused APNS said:

> *"I did not want to test at this facility because my wife takes ART at this same facility such that I was afraid that health care workers would tip my wife that your husband came for testing and these are the results."*

3.4.1.3.3 Sub-optimal client-provider relationship

The sub-optimal client-provider relationship was highlighted as one of the barriers to uptake of assisted partner notification services. From the KII, it was reported by health care workers that some of the clients did not return for partner testing as a result of provider-specific attitude,

friendliness, and reception. Health care worker key informants highlighted that few of the elicited sexual partners they traced in their homes reported that they sought HIV testing services at another health facility as a result of some specific health care workers having poor attitudes and disrespect. A health care worker key informant said of the client:

> *"The index accepted APNS and did notify the sexual partner. However, as a result of poor provider attitudes, the clients went to another facility, which wasn't even closer to where they stay"*.

3.4.1.3.4 Inadequate funds to support home tracing and testing

In analysing the data, inadequate funds to support home testing emerged as one of the barriers to uptake of assisted partner notification for HIV index testing services. From the KIIs, it was reported that most of the sexual partners they reached out to for testing in the community, came from places that were located far away from the facility. Health care workers also highlighted that even in the community, the villages from which clients came from were located far from each other, such that most often the transport became insufficient to reach out to all contacts, and as a result, they failed to either reach out to them for home testing or notify them for facility testing. This has at times dissatisfied the index clients. A health care worker key informant said:

> *"We agree with the index on a date that we shall reach out to him for partner testing. We sometimes fail because the transport money we are provided with cannot take us to the intended village. When you give an excuse to the index clients, you disappoint and demoralise them."*

3.4.2.3.1.5 Heavy workload for providers

In analysing the data, the heavy workload for providers of index testing services was highlighted as one of the barriers to uptake of assisted partner notification for HIV index testing services. From the KIIs, it was reported by health care workers that on several occasions, some as a result of competing priorities they failed to conduct home tracing and testing. Some of the health care worker key informants reported that the process of providing and enrolling a client for APNS takes longer such that on a day where there are competing demands, the workload for providers becomes intense to the extent that other competing priorities are shelved. A health care worker key informant said:

> *"Sometimes we have a lot of duties to carry out. We may schedule a time to reach out to the contacts through home testing, but there emerge other competing priorities which may make one fail to carry out home tracing and testing activity."*

From the KIIs, it was also highlighted that as a result of the heavy workload for APNS providers, some of the providers do not follow the standard operating procedures or guidelines for the provision of active index testing which make the index client uncomfortable and end up in poor elicitation of contacts to be reached for either facility or home testing. A health care worker key informant said:

> *"There are some providers who do short cuts, which the general HIV testing services guidelines, inclusive of index testing don't allow providers to do so. Often you fail to elicit more contacts for testing if guidelines are not followed."*

3.4.1.4 Geographical Factors

From the data analysis, it was observed that geographical factors were one of the barriers to uptake of assisted partner notification for HIV index testing services at the organisation level. These factors included inaccessibility to the health facility and the proximity of clients' houses.

3.4.1.4.1 Inaccessibility to the health facility

Inaccessibility to the health facility emerged as one of the barriers to uptake of assisted partner notification services. From the IDIs it was reported that some of the partners failed to come to the facility for testing as a result of the long distance to the facility. Other respondents added that it's not all the time that they have money to get a motorbike transport such that footing for such a long distance was a problem and as a result some failed to go to the facility for testing. From the KIIs, whilst heath care workers admitted that some clients do not report for partner testing when notified by the index as a result of the distance, they health care workers always asked if the partner would not return for the same reason so that health care workers could plan to offer the test to the partner at home. One health care worker key informant said:

> *"Some clients do come from places that are far as such they may not send their contacts to the facility for testing. However, we do anticipate this and provide an opportunity for the index during counselling that as health care workers we could reach out to them in the community for home testing."*

3.4.1.4.2 Proximity of contact' house to the neighbours' houses in the community.

From the data analysis, the proximity of a contact's house to that of his or her neighbours in the community came out as one of the barriers to uptake of assisted partner notification for HIV index

testing services. From both KII and IDI, partners who accepted APNS highlighted that sometimes they refuse to test as a result of perceived lack of confidentiality emanating from the closeness of the contact's house to that of his neighbour's in the community. Such an arrangement was also observed to be a potential source of self-stigmatisation and discrimination. From the KII, health care workers highlighted that at times, they have failed to provide testing services for fear of breaching clients' privacy and confidentiality as some of the houses were too close to each other. In such situations, health care workers often rebook an appointment or invite the client for facility testing. A female partner who accepted APNS said:

> *"Our houses are too close, with doors facing each other. When the health care worker tests you, even if you are tested negative, the neighbors make false stories and gossip that you were tested and diagnosed positive"*

3.4.1.5 Policy related factors

From the study findings, COVID 19 pandemic impact on HIV testing services was one of the key thematic areas looked at as a barrier to the uptake of APNS at the enabling environment/policy level.

3.4.1.5.1 COVID 19 pandemic

From the data analysis, the current COVID 19 pandemic was reported as one of the barriers to uptake of assisted partner notification for HIV index testing services. From the KII, it was highlighted that COVID 19 impacted negatively on HIV testing services as few people sought HIV testing services in the outpatient departments. Health care workers also commented that some strategies for the optimization of HIV identification such as screening for the eligible clients to be

tested were suspended by the Ministry of health in the wake of COVID 19. Of key importance to the uptake of APNS, health care workers highlighted that the current guidelines in wake of COVID 19 pandemic, suspended community follow up and home index testing, an approach which health care workers used to reach out to more contacts, notify them, provide HIV testing and increase uptake of APNS. A health care worker informant said:

> *"Since the suspension of home testing, we no longer diagnose more HIV positive index clients, from whom sexual partners are elicited for home testing. Even a few that accept APNS, if their contacts don't show up, we can't follow them up in the community."*

From the IDIs with the respondents, it was learned that some of the partners who came for index testing services were denied entry to meet health care workers at the entry gate by guards who thought that the clients had come for voluntary counselling and testing (VCT), given that the guidelines for COVID19 had suspended VCT. A female partner who accepted APNS said to one health care worker informant:

> *"I came to the health facility to be supported with testing services as notified. I was told by the guards at the gate that the facility is not providing HIV testing services"*

Table 3: Barriers to uptake of assisted partner notification for HIV index testing

Barriers to uptake of APNS			
Theme	Sub theme	Barrier	Level of model
Personal factors		Gender	Individual
	Knowledge of APNS and HIV	Lack of knowledge of APNS and HIV	
		Wrong belief in other HIV preventive measures	
		Wrong physical addresses and phone numbers	
Social factors	Disclosure of results to others	Non-disclosure for fear of IPV	Interpersonal level
		Non-disclosure for fear of marriage dissolution	
		Non-disclosure for fear of loss of financial support	
		Non-disclosure for fear of sexual neglect	
		Non-disclosure for fear of being blamed for the infection	
		Non-disclosure for fear of stigmatisation	
	State of relationship	An unstable or casual relationship	

	Pattern of notification	Coerced notification	
	Family/Peer support	Negative peer and family influence	
Health system factors	Health care worker related	Inadequate information on APNS by health care workers	Organisational level
		Lack of provider knowledge, skills and attitudes	
		Sub optimal provider-client relationship	
		Inadequate funds to support home tracing and testing	
		Heavy workload for the health care workers	
Geographical factors		Unaccessibility to the facility	Organizational level
		Proximity of houses in the community	
Policy related Factors		COVID 19 impact	Enabling environment

3.4.2 Facilitators to uptake of APNS

3.4.2.1 Personal factors

In analysing the study findings, the major thematic areas viewed as personal factors that facilitate the uptake of APNS at the individual level of the model included age, gender occupation, education, client profiling client sensitisation at facility, and knowledge of APNS and HIV (Table 5).

3.4.2.1.1 Age

From the KII, it was highlighted that age was a facilitator to increase uptake of APNS. During the study, it was observed that older people with their stable relationships reported for testing after notification mostly due to their stable relationship unlike young men who have unstable relationships. The young men, among others, cited reasons like distance and lack of commitment to their relationships.

> *"From my observation, unlike most young men who have unstable relationships, most of our contacts who usually return for testing are older men which I believe results from their stable marriages."*

However, from the IDIs, study respondents did not report age influencing their decision to accept or deny APNS.

3.4.2.1.2 Gender

From the analysis, gender emerged as one of the facilitating factors to the uptake of APNS. From both KIIs and IDIs with both partners who refused APNS and those that accepted APNS, it was

highlighted that many of the respondents commented that most often when the index doing the notification is a man, the female partner returns for testing. However, this is not the same case if the index client doing the notification is a female, men rarely show up. Health care workers also highlighted that their program reports often show uptake of partner testing after APNS higher in women than men. A male partner who refused APNS said:

> *"Men deep down from their heart know that they are guilty of infecting the woman, that's why they act in defense by refusing or delaying reporting for partner testing. In situations where a man easily accepts notification, know that he is innocent."*

From the IDIs, it was observed that female index clients shared the same observation as male index clients; that male sexual partners tend to refuse testing after being notified. A female index client whose sexual partner refused notification said:

> *"More men refuse to go for testing after notification than women. It's not only evident from my husband but also from several people I know in the village. We had someone who also refused HIV testing after notification by his wife, he later died. The wife accepted testing and is alive on treatment."*

Some male respondents argued that even though more men did not show up, they were willing to but in most health care settings, most services that require HIV testing at the entry point, such as antenatal clinic, maternity, and family planning target women A male partner who accepted APNS said:

"Of course, more men seemingly don't want to test, but we should also consider that there are many services for women such as ANC, which will almost require a woman to get tested for HIV."

3.4.2.1.3 Occupation

From the study, it was also highlighted that occupation played a role in influencing partners to report for facility testing. It was reported from the KII that more women often come for testing because they are not formerly employed as such they have time to come to the facility for testing when notified. Most men are engaged in economic activities such as formal employment and businesses, and often say that they are busy with work when you visit or call to notify them of the need for partner HIV testing. A female index client who accepted APNS said of his partner:

"There came health care workers and asked him to be around for partner testing, but he denied saying that he would be at work and not home."

However, health care workers, further highlighted that in such instances, they have requested permission from the clients if they could conduct a workplace HIV testing to them. A health care worker key informant said:

"There have been instances where I was offered an opportunity by a male partner who allowed me to go to his workplace for testing, which I did successfully."

3.4.2.1.4 Level of Education

In analysing the data, education emerged as one of the factors facilitating the uptake of partner notification and testing. From the KIIs and IDIs, health care workers observed that those educated were able to take information as provided to their sexual partners whilst those with minimal education such as primary school levels had challenges to take the content as it was delivered. In some cases, health care workers reported issues of intimate partner violence as a result of their challenges in doing the notification. However, some respondents, notably those that refused to disclose their status to partners argued that having education alone did not translate successful notification as there were other challenges they faced with a different partner. A male partner who refused APNS said:

> *"In my perspective, put aside the issue of school or education, the issue of HIV is a different story". When told that you are HIV positive, you start thinking of your future, your work and the plans you had. You think that are you going to finish them."*

However, from the demographic data analysis, there was not much significant evidence that education facilitated the acceptance of APNS.

3.4.2.1.5 Knowledge of APNS and HIV

3.4.2.1.5.1 Perceived feeling of being sick

A perceived feeling of being sick emerged as one of the key factors to facilitate uptake of APNS. From the IDIs, it was observed that respondents who had some knowledge of the importance of APNS highlighted the need of accepting notification, testing, and starting treatment to alleviate illness. Both clients who accepted as well as those that refused APNS expressed that when the

notification for HIV testing is done when one sick, there is an increased probability that the partner will accept notification and testing as the individual perceives the benefit from the perceived severity of the disease. A female partner who accepted APNS said:

> *"At the time my husband notified me, I was suffering from pneumonia without improvement. I thought of having the test so that if I would be positive, I should benefit from HIV treatment."*

A male partner who refused APNS said:

> "*I know that one day I will be sick and it will be a must to get tested for HIV. When that time comes, I will accept to be tested."*

3.4.2.1.5.2 Client sensitisation

Clients' sensitisation was highlighted as one of the factors to facilitate uptake of assisted partner notification for HIV index testing. From the IDIs, it was highlighted by both index clients who accepted APNS and partners who refused APNS that some of them did not have adequate information on APNS and its benefits until they were told by health care workers and friends. From the IDIs, some of the index clients commented that facility and community sensitisation community on the importance of partner notification and testing would increase their knowledge on APNS and increase chances of acceptance by partners to test. A female index who accepted APNS said:

"You may need to come through the village headmen and make people aware of the policy and importance of partner home testing."

3.4.2.2 Social factors

In analysing the study findings, the major thematic areas that emerged as factors facilitating the uptake of APNS at the interpersonal level included state of the relationship, disclosure, the pattern of notification, and family/peer influence.

3.4.2.2.1 State of relationship

The stability of the relationship came out as one of the key factors to facilitate the uptake of APNS. From the KII and IDIs with both clients who accepted and refused APNS, the stability of relationship or marriage emerged as a key facilitating factor to the uptake of APNS. In the study, it was observed that many of the sexual partners who were in stable relationships or marriage were able to do a successful notification and partners returned to the facility for testing or invited health care workers for home testing. Many of the clients, including health care workers expressed that openness and trust which exists in stable families was one key tenet to a successful notification. A middle-aged female partner who accepted APNS said:

"I wasn't afraid of notifying him of my HIV results just as he is not afraid of me. This is not just any relationship but marriage for more than 15 years. I knew he would understand me once I explain and give him the partner notification slip the counsellor gave me"

3.4.2.2.2 Disclosure of status

3.4.2.2.2.1 Self-reflection

In analysing the data, self-reflection was highlighted as another facilitating factor for uptake of assisted partner notification for HIV index testing. From the IDIs with study respondents, it was observed that some male partners accepted notification and testing as they reflected and accepted their risky past behavior as a source of infection in the family rather than blaming the female index for bringing the infection. A male partner who accepted APNS said:

> *"I had no reason to deny testing nor getting angry at her because I knew my wife had no relationship outside marriage. I looked at my conduct, realised my mistakes, and knew that the problem was brought by me."*

3.4.2.2.2.2 Fear by an index that partner will discover results

Fear that the index clients had that their partners would self-discover their HIV status facilitated disclosure of their HIV status to the sexual partners. From the IDI with the two female indices, they perceived that more acts of gender-based violence would have been elicited from their husbands if they had not disclosed and let their sexual partners discover for themselves as time went by. One of the female indices who accepted APNS highlighted:

> *"I thought you needed to disclose your HIV status to your partner rather than the husband to discover for himself because marriage may likely end with self-discovery than your disclosure."*

3.4.2.2.3 Pattern of notification

From the data analysis, the way the partner does the notification was highlighted as one key factor to facilitate uptake of assisted partner notification for HIV index testing. From both KII and IDIs, respondents highlighted that patience, place, and timing were key elements of a successful approach to the partner notification process by the index. Some health care workers agreed with the clients' perspective that the manner the index does the notification either facilitates or bars the partners from coming for partner testing. A female index client who accepted APNS said:

> *"If you have patience, the sexual partner understands and accepts. I approached my husband with patience and respect and I believe that was why he understood me and accepted partner testing."*

3.4.2.2.4 Family support

Positive family and peer influence came out as some of the key factors to facilitate uptake of assisted partner notification for HIV index testing services. From both KII and IDIs, it was observed that some of the indices were supported in getting a test and disclosing their results to their sexual partners by both friends and family members. It was further observed that some of the indices were influenced by the behaviour displayed by other indices who already tested, notified their sexual partners, and started treatment. A male index client who accepted APNS said:

> *"In my thick of things, I thought about those families that are positive and are already taking drugs. Then I said to myself, why don't I accept my results, notify my wife and then be on treatment?"*

3.4.2.3 Health care worker-related factors

The major thematic areas that emerged as factors facilitating the uptake of APNS at the organisational level included provider health care worker training, optimal provider-client relationship, and health care worker supported notification.

3.4.2.3.1 Health care worker training

From the KIIs, quality of health care workers training was highlighted as one of the key factors to facilitate uptake of APNS, in particular, there are adequate health care workers with knowledge, skills, and confidentiality

3.4.2.3.1.1 Confidentiality

From the analysis, health care worker confidentiality emerged as one key facilitating factor to the uptake of assisted partner notification services for HIV index testing. From the IDIs, it was observed that many index clients and partners who sought partner HIV testing services highlighted the need for confidentiality. Many respondents highlighted that they wanted index testing services which would be confidential whether the notification is conducted in the home or health facility, which they later appreciated. It was also learned from some of the index clients that what motivated them to allow health care workers to do the notification on their behalf was that their identity would be kept confidential and not be disclosed to the partner. A male partner of a female index who accepted APNS said:

> *"When they came to provide testing to me, except for my family members, my neighbors didn't know what I was discussing with the provider"*

3.4.2.3.1.2 Health care worker knowledge, skills, and attitudes

In analysing the data, knowledge, skills, and attitudes that the health care worker has was highlighted as one of the key facilitators to uptake of assisted partner notification for HIV index testing. From the interviews conducted with the key informants, health care workers highlighted that through training, they have the knowledge and skills to provide motivational counselling, provide the right notification methods, reduce the risk of intimate partner violence and increase partner return. Through training, health care workers have good attitudes towards APNS which makes them reach out to more contacts when they go for community index testing. A health care worker informant commented:

> *"Our providers are well trained such that we don't have clients refusing to return for partner testing as a result of poor attitudes from the providers."*

3.4.2.3.2.1.3 Availability of trained index testing providers

From the data analysis, increasing the number of available trained index testing providers was highlighted as one of the facilitators to uptake of APNS. From the KIIs, it was reported by health care workers that on several occasions they have failed to conduct home tracing and testing as a result of few trained index testing providers who mostly are HIV diagnostic assistants (HDAs). Though health surveillance assistants (HSAs) are trained to provide HTS, they are not trained to provide active index testing. A health care worker key informant said:

> *"Sometimes we have a lot of duties to carry out. We may schedule a time to reach out to the contacts through home testing, but there emerge other competing priorities which may make one fail to carry out home tracing and testing activity. It would have been good if the*

number of index testing providers was increased. We have other HTS counsellors who provide HTS, but are not trained in index testing."

3.4.2.3.2 Optimal provider-client relationship

From the data analysis, the optimal provider-client relationship came out as one of the factors to facilitate uptake of APNS. From the IDIs, it was observed that clients were more comfortable to undergo index testing counselling with providers who were friendly and respectful. From the KII, health care workers highlighted that the optimal provider-client relationship provides the advantage for the provider to know more about the partner, provide motivational counselling and again have the client explain with honesty and trust more about his elicited sexual partners who would be notified for partner testing. A female contact who accepted APNS said:

"When the health care worker reached me, he came as if he had come for a chat. I never expected that he would talk about HIV testing. He approached me with respect, chatting and then talked about HIV testing"

A health care worker key informant said:

"*We ensure to be friendly and put trust in them which is key to this relationship right before the test. By the time we are disclosing the results, we are just continuing the relationship. It doesn't end when exiting the room, but we maintain it till to the community which gives us the edge of following them up into the community."*

3.4.2.3.3 Health care worker supported notification

From the data analysis, health care worker notification of the contact was mentioned as one key factor for facilitating increased uptake of assisted partner notification for HIV index testing. From the KIIs, it was learned that for index clients who were not comfortable disclosing their HIV results to their partners, health care workers offered support to the index and reached out to their sexual partners whilst maintaining their confidentiality. From the IDIs with clients who accepted APNS and those that refused APNS, both groups admitted and appreciated the impact health care worker notification does in situations where they fail to disclose their HIV status to the partners. Furthermore, observation in the voluntary assisted partner notification (VAPN) registers revealed that many sexual partners were reached with HIV partner notification and testing through provider referral (method of notification by health care workers). Two male index clients who accepted APNS but did not notify their wives said:

> *"It was difficult to explain to my sexual partner. I thought if I could have sought help from health care workers, unfortunately, I didn't till she discovered on her own"*

> *"Like in my case, I envisaged my wife being calm in the presence of health care workers and would have understood and gone for testing."*

3.4.2.4 Geographical factors

3.4.2.4.1 Provision of home HIV testing

Provision of home index testing services for those partners who come very far from the health facility was highlighted as one of the key factors to facilitate uptake of APNS at the organisational

level. From both the KIIs, health care workers said that some of the contacts who come far are reached with index testing services right in their home through an initiative supported by health care workers. A health care worker informant said:

> *"If contacts come from far, we also counsel them on the need for home testing, assuming that the index accepts that his sexual partner is tested at home".*

3.4.2.5 Policy factors

The major thematic area that emerged as a facilitating factor to the uptake of APNS at the enabling environment included the issuance of partner notification slip and option for a preferred place of testing provided for in the new Active index testing policy.

3.4.2.5.1 Issuance of partner notification slip

From the study findings, the issuance of partner notification slip was highlighted as one of the factors to facilitate uptake of assisted partner notification for HIV index testing services. From the IDIs, study respondents highlighted the key role the partner notification slip played during the disclosure period. Some clients highlighted that the notification slip complemented some areas of importance that the index forgot to mention during disclosure. Other index clients observed that the partner's notification slip highlighted the importance of the subject matter the index client discussed with the health care worker as such motivated the contact to come to the facility for testing. A female index client who accepted APNS said:

"My husband did not seem to understand and agree with me when I notified him by word of mouth. When I produced the notification slip, he believed my results accepted and asked me to accompany him for testing"

3.4.2.5.2 Preferred place of testing

From the data analysis, the preferred place of testing was one of the major factors mentioned to facilitate uptake of assisted partner notification for HIV index testing. From the KIIs and IDIs, it was highlighted that some clients accepted notification and testing because the APNS approach provided for testing at a client's preferred place. It was observed that whilst some clients opted for home testing, other clients preferred testing at a different facility other than the facility where the index was tested for different reasons which included privacy and confidentiality. A male partner who accepted APNS said:

"I wanted him to come home and test me whilst I am home so that I can have my HIV testing results right away from my home than a facility."

Table 4: Facilitators of uptake of assisted partner notification for HIV index testing

Theme	Sub theme	Facilitator	Level of model
Personal factors	Personal	Age	Individual
		Gender	
		Occupation	
		Education	
	Knowledge of APNS and HIV	Perceived feeling of being sick	
		Client sensitisation	
Social factors	State of relationship	Stability of marriage or relationship	Interpersonal level
	Disclosure of status	Self-reflection	
		Fear by index that partner will discover	
	Family support	Positive family/peer influence	
		Pattern of notification	
Health care worker related	Health care worker training	Confidentiality	Organisational
		Health care worker knowledge, skills and attitudes	
		Availability of trained index testing providers	
		Optimal provider relationship	

		Health care worker supported notification	
Geographical factors		Provision of home HIV testing	Organisation
Policy related factors		Issuance of partner notification slip	Enabling environment level
		Preffered place of testing	

3.4.5 Strategies currently used to optimise uptake of APNS/AIT

In analysing the study findings that facilitated uptake of APNS and those that impeded uptake of APNS, health care workers highlighted strategies that are currently being used to optimise uptake of assisted partner notification for HIV index testing services. They included: provision of adequate funds to support home tracing and testing, use of provider referral notification approach, conducting demand creation services, screening for intimate partner violence, home partner testing and skills training of providers (Table 5).

3.4.5.1 Provision of adequate funds to support home tracing and testing

From the KIIs, health care workers reported that most of the sexual partners they reached out to in the community came from places that were located far away from the facility. They also highlighted that even in the community, the villages from which clients came from were located far from each other, such that most often the transport they were provided with became insufficient to reach out to all contacts, and as a result notification of home testing or facility, testing was not done. Two health care worker key informants said:

"The transport we are supported with is not enough to see at an average, 5 households. You go to Manase and you are told that the partner is in Mpemba at the home of his second wife. When you reach there the transport money is finished without even meeting the contact and provide index testing services."

"Contact self-return for testing at the facility is not good. Here, we need management to improve the home tracing transport allowance so that we can reach out to all contacts every day. We are talking of taking services to them which would improve uptake of active index testing."

3.4.5.2 Provider referral notification approach

Provider referral was reported by health care workers as one of the key strategies being used to increase uptake of APNS/AIT. It was learned from IDIs with index clients who notified their sexual partners that health care worker notification supported some of them who were not comfortable to do the notification and took the onus off from them as sole people responsible for notification. It was further highlighted by index clients that health care worker notification supported the reduction of intimate partner violence in women. A health care worker key informant said:

"When you go through the registers, it is evident that many sexual partners were reached with HIV partner notification and testing services through provider referral and not contract referral or dual referral. We are confident this is the right way to go"

3.4.5.3 Conducting demand creation services

Conducting demand creation services was one of the strategies health care workers used to create community awareness about APNS/AIT. From the IDIs, it was reported that lack of information on assisted partner notification was a key barrier to uptake of assisted partner notification services. Furthermore, it was highlighted by both index clients who accepted APNS and partners who refused APNS that some of them did not have adequate information on APNS and its benefits. Whilst health care workers reported demand creation activities for APNS/AIT being done at facility level, other index clients suggested planned efforts to reach out to the community so that the community is sensitised on the importance of partner notification and testing. A female index who accepted APNS said:

> *"You may need to come through the village headmen and make people aware of the policy and importance of partner home testing."*

From the KIIs, health care workers agreed with the opinion of some of the respondents on the need to engage the community fully with sensitisation and demand creation activities. A health care worker key informant said:

> *"We need to support demand creation activities. For us to reach out to all eligible contacts, we need the community to know the importance and benefits of partner tracing and testing services, just as the community knows about partners' notification in Tuberculosis (TB) and sexually transmitted infections (STI) programs.*

3.4.5.4 Screening for intimate partner violence

Screening for intimate partner violence (IPV) was highlighted as one of the strategies which health care workers are used to increase uptake of assisted partner notification services. From KIIs, health care workers reported that they administer IPV screening questions which focus on physical harm, threat of harm and sexual violence to all indices before they accept APNS/AIT. This also helped them assess if the client could do the notification himself without their support. A health care worker key informant said:

> *"We agree with the index to notify his sexual partner, but sometimes the partner does not turn up as a result of non-disclosure by the index for fear of being beaten. In this case, we do minimise IPV risk by screening all indices for intimate partner violence before they accept APNS."*

Whilst in agreement with what health care workers do, IDIs with some female respondents revealed that some female repsondents were of the opinion that whenever a female client is diagnosed HIV positive, health care workers should not allow the woman to disclose to her husband herself, but should get the phone contact of the husband and reach out to him on the phone, book appointment and support the notification process. A female contact who accepted APNS said:

> *"If a married wife comes alone to test and she is diagnosed HIV positive, the health care worker should get contact details of her husband and reach out to him after some two days,*

invite him to the hospital or pay him a home visit for notification rather than leave the wife to do the notification."

Health care workers agreed with the observation from the clients. However, they commented that they already provide room to support the notification for those not comfortable doing the notification through the use of provider referral. A female health care worker informant said:

"Some indices are afraid of their sexual partners, particularly those with lack of openness in their family for fear of IPV. We help the index who has accepted APNS to notify their sexual partner by doing the notification ourselves at home or facility."

3.4.5.5 Home partner tracing and testing

Home partner tracing and testing was reported by health care workers as one approach which they used to reach out to more eligible contacts to increase APNS uptake. From the KIIs, health care workers highlighted that based on their experience and supported by evidence in APNS registers, more sexual partners were tested when health care workers actively reached out to the sexual partners for testing in their homes than when they reached out to partners through phone and inviting them for facility testing. One health care worker informant said:

"Most of the contacts who do not return to the facility after two weeks are found when we conduct home tracing as stated in the policy. It is a better option to home testing for all contacts and offers facility testing for those that would opt so."

3.4.5.6 Skills training of index testing providers

Provider AIT skills training was reported by health care workers as one of key strategy being used to increase uptake of assisted partner notification services. However, health care workers reported that there are still some providers who are not trained such that training more providers to conduct active index testing would enhance uptake of APNS/AIT. They further highlighted that such training would equip them with client motivation skills which would enhance index acceptance of APNS, contact elicitation, partner testing and ultimately increasing uptake of assisted partner notification for HIV index testing. A health care worker informant commented:

> *"We need updated index testing knowledge through training, standard operating procedures, and peer sessions so that providers have the right skills to provide quality index testing and motivational counselling to the clients."*

Table 5: Strategies being used for optimisation of assisted partner notification for HIV index testing

Strategies for optimisation of APNS uptake	Provision of adequate funds for home testing
	Optimisation of provider referral notification approach
	Conduct demand creation activities
	Screening for intimate partner violence
	Optimisation of partner home testing
	Training of Active index Testing providers

CHAPTER 4: DISCUSSION

4.1 Introduction

This chapter discusses the findings that emerged from the study. The study sought to assess barriers and facilitators to uptake of assisted partner notification for HIV index testing services among newly diagnosed HIV positive adults at Ndirande health centre. The study showed that lack of knowledge, wrong physical addresses, lack of provider knowledge, the proximity of houses, and COVID 19 pandemic were the barriers to uptake of APNS. Knowledge of APNS, stability of marriage, gender, health care worker training, health care worker notification, home tracing, and testing were the key facilitating factors to the uptake of APNS. The study also came up with suggested strategies for optimisation of assisted partner notification services (APNS). The study discussed the results categorised as perceptions of APNS, facilitators and barriers to uptake of APNS at individual, social and health systems contexts.

4.2 Barriers to APNS uptake

4.2.1 Individual level barriers

Study results showed that individual perception of APNS being coercive was one of the barriers to uptake of assisted partner notification services for HIV index testing. Clients reported that health care workers reached out to them either through phone or at home at a time when they were not ready for HIV testing. In the study, even though health care workers highlighted that the pattern of services was provided on opt-out basis, some clients still perceived it as coercive as they were either called or reached at home and being offered APNS whilst they were not prepared. Our study findings are consistent with findings reported in a qualitative study conducted in low- and middle-

income countries where it was reported that adolescent girls faced coercion to notify their sexual partners by health care workers due to unequal power dynamics in the provider-client relationship [57,59].

The study results revealed that lack of individual knowledge on HIV and index testing services was a barrier to uptake of assisted partner notification services. Some male clients refused partner HIV testing services as they felt that they did not have HIV since their children were born HIV negative whilst others refused APNS as they were offered HIV testing whilst they were not sick. Our results where clients reported feeling to be in good health resonates well with the constructs of perceived vulnerability and susceptibility, as highlighted in the health belief model [33-35]. Our study finding builds on results for a study conducted in Burkina Faso, Uganda, Tanzania, Zambia, and Kenya where lack of knowledge among indices and sexual partners was reported as a key barrier to uptake of APNS occurring at the intrapersonal level [19,22,58-60]. To improve clients' knowledge on relatively new concept of assisted partner notification for HIV index testing, our study suggests engagement of the clients on APNS through sensitization in facility-level morning health talks targeting high HIV yield service delivery points, counselling sessions, and community health gatherings as previously reported in guidelines, journals and studies in Mozambique where clients' engagement at facility and community levels resulted in clients perceiving APNS as safe and effective when provided at the facility and in the community [29,65,86,87].

Our findings revealed that wrong client physical addresses and phone numbers were barriers to assisted partner notification services. In the study, it was observed that some clients gave either wrong physical address or phone contact so that health care workers should not reach out to them.

The study further observed that some of the partners who provided wrong details, when traced and reached by health care workers at home, disowned their identification details and created false relocations so that health care workers should not offer them APNS for fear of losing economical support amongst other reasons. Our findings are consistent with results reported in a randomised control trial and a qualitative study conducted in Malawi and Uganda where sexual partners gave wrong physical addresses so that they should not be followed up [17,32,71]. Building on what was recommended in Kenyan training manual for intensified APNS, where reduced suspicion during elicitation and improved trust between health care worker and provider and ultimately enhanced notification process [85], our study suggests integrating client profiling techniques during the HIV risk assessment which minimises clients' suspicion, improve trust and reduce the risk of clients giving wrong physical address for their contacts during APNS counselling process.

The study results showed that beliefs in other HIV medical preventive methods were a barrier to uptake of APNS. Some clients refused HIV partner notification and testing services as a result of being previously circumcised, such that they couldn't get HIV despite having a penetrative sexual relationship with an HIV infected partner. As a policy, voluntary medical male circumcision (VMMC) was adopted in Malawi in 2012 [61], and its communication strategy highlights a protective effect of 60% [63]. Going through this finding, our study learns the gaps that exist in terms of knowledge on HIV prevention among clients emanating from a lack of comprehensive and adequate information. The study finding relate to a similar finding which was reported in a systematic review where sexual dramatic evidence of the protective effect of circumcision showed in a study of Ugandan discordant couples. In the study, no new infections occurred among any of the 50 circumcised men over 30 months [61].

4.2.2 Social barriers

The study results revealed that non-disclosure of one's HIV status to the sexual partner was the major barrier to uptake of assisted partner notification services. The study further revealed that the manner and timing of the disclosure of the results were a barrier to uptake of assisted partner notification services for HIV index testing services. Our study showed that intimate partner violence manifested itself through fear of marriage dissolution, loss of financial support, fear of sexual neglect and fear of being blamed for the HIV positive result. The research builds on the fact that non-disclosure for fear of intimate partner violence remains one of the major barriers of APNS as reported in many qualitative studies conducted in Sub Saharan Africa and systematic reviews [5,9,17-22,27-29,57,65,68,69,91]. As highlighted in other studies, our study revealed that optimising use of the screening tool on all eligible clients when offering active index testing/APNS would reduce the risk and occurrence of IPV and facilitate uptake of APNS as reported in studies conducted in Sub Saharan Africa and Australia [9,14,21,24]. Furthermore, supported by knowledge and skills through training, health care workers should actively look for IPV, mitigating its impact and offer proper first line support management for cases of intimate partner violence.

Related to the same, the study results also showed that some women refused partner HIV testing services as they needed to consult their husbands first on the decision to have an HIV test for fear of marriage dissolution. Some men also refused partner HIV testing after their spouses notified them because the partner did not approve for the wife to get tested for HIV. The study findings highlight, two important areas, the impact of gender marginalization in the families and the influence of family members as regards decision making for the adoption of new behaviour as highlighted in the social-ecological model and social cognitive theory. The findings are similar to previous results reported in a qualitative study conducted in Malawi where gender marginalisation

was singled out as a barrier to APNS [9,19-22,69]. Building on studies conducted in Malawi, Kenya, Uganda and Tanzania where dual and provider referral methods were reported to improve trust and notification amongst spouses through improved communication skills [9,19-22,89], our study further revealed the importance of direct provider notification instead of the female index herself doing the notification to her husband through contract referral in reducing IPV risk. Further more, providers may support disclosure of partner results through intensification of facilitated dual referral which provides for partners to be counselled together as a couple. Such approach may facilitate trust, disclosure and acceptance of results with reduction in the risk of IPV.

The study results showed that fear of stigmatisation and discrimination was a major barrier to uptake of assisted partner notification services. In the study, it was observed that stigmatisation arose from fear of being seen coming out of HIV testing rooms and therefore becoming a centre of attraction among the peers and community, fear of the HIV positive result and the drugs they would be enrolled on. Once they were communicated about the result, clients would have problems coping with the results which would also mean failing to attain their desired plans in life, a construct of self-actualisation as highlighted in Abraham Maslow's hierarchy of needs theory [26,34]. Related to stigmatisation, the study results showed that perceived and experienced stigma was a key barrier to the uptake of assisted partner notification services. Some clients reported experiencing discrimination by peers and family members. Perceived stigma followed stigmatisation where it was observed at the facility that other clients made wrong conclusions of an individual’s HIV status when health care workers physically escorted a client either when positive for linkage to treatment services or being referred for VMMC when HIV negative. The study findings are consistent with what other qualitative studies conducted in Sub-Saharan Africa

reported where stigmatisation and discrimination were major barriers to uptake of APNS at family, institutional, and community levels [21,27-29,31,57,59,91].

The study results highlighted that unstable marriage or relationship was a hindrance to the uptake of assisted partner notification services among newly diagnosed HIV positive adults. As previously reported in studies and systematic review conducted in Sub Saharan Africa and Australia [9,19-21,23-25], our study observed that lack of openness and trust which reportedly existed in unstable relationships resulted in a sexual partners failing to disclose their HIV status for fear of reprisals from their sexual partners [9,15,19-21,23-25,27]. Related to this were casual sex relationship and new marriages which our study findings reported risked IPV if the index disclosed his HIV results to the new partner. Our findings resonate with findings reported in qualitative studies in Sub Saharan Africa and systematics reviews where nature of relationship, marriage instability and lack of trust existing among couples affected uptake of APNS [21,23-24,27-29,59]. Our study reveals that exploration of stability of relationship in the context of disclosure and likelihood of potential risk gender-based violence would be an essential component of the IPV screening process. In such areas of threat, health care workers should offer a provider referral notification approach, where health care workers will take the onus off the female index as the sole responsible person doing the notification.

Some clients in our study refused HIV partner testing services as a result of family and peer influence as their friends and family members discouraged them to seek HIV partner testing services. Although HIV self-testing provides an opportunity for conducting testing in private and reducing the fear and stigma from being seen walking around the corridors of HIV testing rooms

at the facility, other clients in our study discouraged their friends from testing on the perspective that HIV self-testing kits were not reliable as they would give a false HIV positive result. This result highlights the magnitude of how peer opinions influence individual decisions for behaviour adoption at the interpersonal level of the SEM as well as in the reciprocal determinism of the socio-cognitive theory as also reported in qualitative studies conducted in Tanzania, Kenya & Uganda [19,21-22,31,68].

4.2.3 Health care worker-related factors

As reported in other qualitative studies conducted in Kenya, Malawi, Uganda, Mozambique, and South Africa, our study results showed that lack of provider knowledge, skills, and attitudes was one of the key barriers to uptake of assisted partner notification at the institutional level [14,17,21,22,32]. It was revealed in the study that, as a result of limited knowledge, some providers who were not trained in APNS/AIT service provision failed to give index clients adequate counselling information which they would have used to make an informed decision as well as supporting them to motivate their sexual partners to access partner HIV testing. These findings were also reported in studies conducted in Sub Saharan Africa where inadequate counselling information emanating from lack of provider knowledge contributed to low return of partners for HIV testing after notification by the index [14,17,21,58].

Our study also observed that index testing providers who were not knowledgeable enough were perceived to lack confidentiality as well as risking clients to IPV as they offered wrong APNS approaches to indices doing the partner notification. Our study learned that some clients refused APNS as they did not want to receive partner HIV testing at the same facility where the sexual

partner was enrolled on treatment as they had assumed that inadequately trained health care workers would still disclose their private and confidential results to the sexual partner. Our findings are consistent with systematic reviews and qualitative studies conducted in Sub Saharan Africa where lack of provider knowledge and skills was highly reported as one the key barrier to APNS uptake [5,14,17,21,22,31,32,58,60,64,65].

The study results also revealed that sub-optimal client- health care worker relationship contributed to low uptake of assisted partner notification for HIV index testing services. Health care workers' poor attitudes and disrespectfulness were observed to have resulted in clients refusing to return to the facility for partner HIV testing as well as testing at another facility. Our findings are consistent with systematic reviews and qualitative studies conducted in Kenya, Uganda, Zambia where bad attitudes of health care workers, inclusive of lack of confidentiality were reported as key barriers to uptake of assisted partner notification services. [5,22,28,29,31,57,60]. While existing literature supports good health care worker's morals and practical support as essential to the good provider-patient relationship [78], the study is of the opinion that effective management and supervision should target patient-provider relationship and patient-centered care, essential for quality health services which if optimised, has the potential to bring out the good relationship between health care workers and clients. Such good relationships should uphold high standards of confidentiality, key principle of ANPS throughout the process of index testing services.

Inadequate funds provided to health care workers to support physical tracing of contacts and provision of home partner testing was shown to be one of the major barriers to uptake of APNS in the study. Health care workers reported that most of the partners they tracked in the community to

provide APNS through provider referral approach, came from places that were very far such that they couldn't reach out to them as transport funds were not sufficient. In the active index testing (AIT) policy for Malawi, home testing was provided for through the provider referral (PR) approach, to notify the partner on behalf of the index and offer index testing services in the community [8]. A number of qualitative studies reported an increased number of partners reached and tested when PR was offered. The study observed that without funds to support home testing, uptake of APNS will significantly drop. Our study results are consistent with findings reported in quantitative and qualitative studies conducted in Malawi, Kenya, and Cameroon where limited funding to support home tracing strategy greatly reduced follow-ups, notification, and identification of cases through APNS [9,11,14,17,70,71,76].

The study results also showed that the heavy workload for providers trained to offer APNS/AIT was a barrier to uptake of APNS among the newly diagnosed HIV positive adults. Health care workers reported competing priorities coupled with an inadequate number of trained providers which resulted in the cancellation of some home visits which further frustrated the clients who were expecting to be supported with testing services in the community. Our study also observed that the index testing enrollment took longer, such that where providers were few, there was increased long waiting times for index clients which would have risked clients getting frustrated, denying APNS, and not returning with the partner to the facility for testing. Our results build on what was reported in systematic reviews and qualitative studies conducted in Sub Saharan Africa where the availability of adequately trained health care workers was key to a successful implementation of APNS [5,14,21,22,64,65].

4.2.4 Geographical factors

The study results showed that inaccessibility to the health facility was one of the barriers to uptake of assisted partner notification services among newly diagnosed HIV positive adults. As most clients were tested in the community through home testing, long distance affected their reporting to the facility for confirmatory testing, a finding also reported in studies conducted in Malawi and Tanzania [19,58]. This situation was further complicated by the fact that neither HIV testing nor ART guidelines provide for confirmatory testing and treatment initiation in the community respectively [6,66]. The proximity of houses was revealed in the study as one of the barriers of uptake of assisted partner notification for HIV index testing services because it compromised confidentiality, as required in the provision for APNS guiding principles and reported in studies conducted in Malawi, Zambia and Kenya [10,59,77]. Our study suggests that integration of APNS and HIV self-testing which provides for HIV self-testing for contacts not comfortable with conversation testing in the community [79,80,81] should extend to include situations in the community where privacy and confidentiality would be compromised such as in high density areas.

4.2.5 Policy related factors

The study results showed that COVID 19 pandemic was one of the barriers to uptake of assisted partner notification for HIV index testing services. As a result of COVID 19 pandemic in a country with already a fragile health system, there was reduced volume of clients attending the facility with subsequent reduction of identification of cases. Our study observed that many sexual partners who were elicited during the height of the pandemic in Malawi were not reached out to with partner testing as the COVID 19 guidance from the Ministry of Health suspended community testing

services which included assisted partner notification services/active index testing [72]. Furthermore, as providers no longer conducted home tracing, number of contacts tested for HIV through APNS declined which led to poor clinical and programmatic outcomes [72-76].

The study observed that although telephonic follow-ups were the alternative to reach out to the contacts and sustain the results, the outcomes were very poor as most of the contacts did not have phones or their phone couldn't be reached as a result of network challenges. Even though tracing of contacts through mobile phone and other social media platforms have previously been reported to have been successful in facilitating notification and HIV testing in Europe, China and USA [91,92], their effectiveness in Malawian context and other African countries was poor given the low percentage of phone ownership and network coverage challenges [92]. Available program reports from Malawi communications regulatory authority (MACRA) and a study on communications conducted in Malawi highlighted that due economic challenges affecting both urban and rural Malawians, mobile phone ownership staggered at 42.5% [82] and that mobile network coverage ranged from 74-80% with fluctuations in terms of strength at variable peak hours [90].

Across Sub Saharan Africa, further disruption of services as a result of COVID 19 pandemic negatively affected functionality of health systems, as there was depletion of resources to curb the emergency, diversion of health workforce, suspension of services, reduced health-seeking behaviour, unavailability of supplies, deterioration in data monitoring and funding crunches [73,75,83]. It also highlighted the impact of factors in the enabling environment such as policy negatively affecting new behaviour adoption, in this context partner notification services as

espoused in the socio ecological model [33]. In the context of Malawi, our study also observed that as provider-initiated testing and counselling (PITC) was restricted only to high-yield service delivery points [72-75], optimisation of HIV self- testing approach was used so as to sustain the demand for testing whilst decongesting the facilities and reduce risk COVID 19 transmission. HIVST was integrated with AIT/APNS where newly diagnosed HIV positive clients of whom providers envisaged would not return with the partner for APNS even after a follow-up phone call, an HIVST was provided to the index to give his contact to self-test [81]. Our findings are consistent with program reports and studies conducted in Kenya, Malawi and Zimbabwe where HIV testing coverage of partners eligible assisted partner notifications services drastically went down following reduced client volume at the facility which resulted in low identification of index clients for ANPS through clinic-based testing, a backbone for successful APNS program [72-75].

4.3 Facilitators to APNS uptake

4.3.1 Individual factors

The study results showed a positive perception of APNS facilitated uptake of assisted partner notification among newly diagnosed HIV positive adults. The study observed that APNS was a client and family centered, targeted and efficient testing approach as it maximised testing of sexual partners and biological children of the index clients. As reported in many of systematic reviews and quantitative studies conducted in Sub Saharan Africa, APNS was key to augmentation of HIV testing, linkage to treatment and care services [9,11-14,17,19,27,64,65,76]. Our study showed that gender was a predictor to acceptance of assisted partner notification services. Our findings are consistent with qualitative studies conducted in Uganda [20], where the results highlighted men

were afraid to go for HIV index testing services, even if it is alongside their sexual partner [19,20,24,59,71,76].

Study results indicated that occupation was a facilitator to uptake of assisted partner notification services. It was reported that many of the partners of the male index clients reported to the facility were women. Our study findings are similar to results reported in qualitative studies conducted in Tanzania and Uganda, where the nature of occupation for some clients such as fisher folks was prohibitive for them to report to the facility for HIV index testing after being notified by the sexual partner [19,32]. It was also reported that education facilitated uptake of assisted partner notification services. Clients who were educated were able to understand the information their sexual partner brought which was followed by complying with the instructions consequently taking up the service. Our findings are consistent with qualitative studies conducted in Sub-Saharan Africa, where lack of education and knowledge were reported to have facilitated uptake of APNS at the intrapersonal level [5,17,21,19,22,28,58-60,64,65]. From those with knowledge, it was observed the feeling of being sick motivated some clients to accept HIV partner notification and testing services. The study observed that perceived severity and benefits, as highlighted in HBM [33] emanated from the knowledge of APNS and HIV which the clients had and this influenced and facilitated uptake of APNS. Our results build on what was previously reported in studies conducted in Malawi, Kenya and Uganda where it was reported that individual knowledge and education facilitated index acceptance and partner return for facility and community assisted partner notification for HIV index testing services [17,22,28-29].

4.3.2 Social Factors

Stability of relationship facilitated uptake of assisted partner notification services. Furthermore, the study results highlighted that the friendship, openness, and trust which existed in stable marriage facilitated timely, patient, and mutual disclosure among sexual partners, of which some were reported to have received dual referral partner notification services [10]. In a mixed-methods study conducted in Tanzania, it was reported that stably married index clients were 2.5 times likely to be successful in notifying their partners and return for index testing, highlighting the fact that stable marriage or relationship is a predictor of successful APNS. Our study findings are consistent with findings reported in qualitative studies conducted in Sub Saharan Africa and systematics reviews where marriage stability, openness, and trust existing among couples reduced risk of IPV, facilitated disclosure, and increased uptake of APNS [9,19,21,23-24,27-29,59].

Clients who were in stable relationships or marriage were reported to have openness and trust between sexual partners such that they were able to disclose their HIV results to their sexual partners without fear of reprisals or intimate partner violence. Our study observed that contrary to unstable marriages which were an observed risk of intimate partner violence, marriage stability facilitated disclosure and reduced risks of intimate partner violence. Our findings are consistent with studies conducted in sub Saharan Africa where it was reported that married index clients with stable relations were 2.5 times more likely to disclose and successful in referring their sexual partners for HIV testing services, suggesting that stable relationship was a determinant and predictor to notification, disclosure and acceptance of APNS [9,19,21,24,27,29].

The study results revealed that self-reflection facilitated uptake of assisted partner notification services. Admission of one's past risky behaviour as source of infection in the relationship made others take the responsibility and accepted the notification rather than assigning blame on the wife for bringing the infection. Relatedly, fear of the partner discovering himself and subsequent risk of gender-based violence influenced disclosure and uptake of APNS . The study observed that fear of the partner to self-discover was observed to occur in families where openness and trust existed, unlike in unstable relationship where disclosure in this context resulted in gender-based violence. Our findings resonate well with results that were reported in a qualitative study conducted in Australia and Uganda [24,28].

Positive family and peer influence on an individual facilitated uptake of assisted partner notification for HIV index testing services. In the study, some clients were supported by their family members and peers to access HIV testing services and later do the notification to their sexual partners. Furthermore, some friends who were already on HIV treatment facilitated testing and notification through client modeling which ended up influencing the partner to accept the notification, testing, and later linkage to HIV treatment and care. This finding highlights the magnitude of how interpersonal relationships such as peer and family relations positively influence individual decisions for behaviour adoption in society as highlighted in the socio-ecological model [33]. The findings in this study resonates well with results reported in qualitative studies that were conducted in Tanzania, Kenya & Uganda [19,21,22,31,68].

4.3.3 Health care worker related factors

Health care worker training in APNS or AIT was one of the major facilitators to uptake of assisted partner notification services. The study observed that such training equipped health care workers with the knowledge, skills, attitudes, and resources to appropriately offer the right notification approach, reduce risk of violence through intimate partner violence screening and comprehensive counselling information to support clients' disclosure to their partners. Our findings are consistent with systematic reviews and qualitative studies conducted in Sub Saharan Africa where effective and culturally competent training for health care workers and lay cadres resulted in the successful and ethical implementation of partner notification programs [5,14,17,21,22,31,32,58,60,64,65,76,77].

The study results revealed that optimal client- health care worker relationship contributed to increased uptake of assisted partner notification for HIV index testing services. Our findings are consistent with systematic reviews and qualitative studies conducted in Kenya, Uganda, Zambia where provider respect, friendliness and confidentiality were reported to facilitate uptake of assisted partner notification services [5,22,28,29,31,57,60,77]. Provision of health care worker notification or provider referral greatly facilitated uptake of assisted partner notification services. Our findings build on results reported in systematic reviews and qualitative studies conducted in Cameroon, South Africa, Malawi, and Kenya [5,9,24,28,32,71,76], where health care worker notification reportedly maximized case identification than dual and contract referral methods. Index clients who were not comfortable to disclose their HIV status to the sexual partner were offered support by health care workers. Our study observed that when health care workers screened index clients for intimate partner violence and kept anonymity of the index, it resulted in reduced

risk of intimate partner violence, maximisation of the numbers of sexual contacts elicited, reached and tested in the community through provider referral.

4.3.4 Geographical factors

Our findings that provision of HIV testing services in the home and use of phone call to the partners facilitated uptake of assisted partner notification for HIV index testing build on what qualitative studies conducted in Zambia, Malawi and Kenya reported, where home tracing and testing was convenient for those coming too far from the facility and yielded more identified cases [59, 76]. The study observed that reaching out to sexual partners of the index resulted in more contacts being notified and tested through APNS.

4.3.5 Policy related factors

The provisions in the active index testing policy for the Malawi HIV program allows for issuance of partner notification slip and options for a client to choose a preferred method for AIT/APNS [8]. The study results revealed that issuance of partner notification facilitated uptake of assisted partner notification services. The study findings are consistent with the results reported in a randomised control trial where issuance of partner notifications slip or invitation cards resulted in increased return of male partner for HIV testing at the facility [12,22,24,90]. Our study suggests intensifying and sustaining the provision of partner notification slip to the index clients who opt for contract referral and dual referral approaches of APNS as the notification slip were observed to support the index successfully disclosing their HIV status to the partner.

4.4 Strategies for APNS optimization

The study highlighted service delivery approaches being used to increase uptake of assisted partner notification for HIV index testing services from the perspectives of index clients who accepted APNS, sexual partners who accepted and health care workers providing active index testing services. Though the study builds on what previous research has reported on strategies for increasing APNS, it further includes perspectives of sexual partners who refused APNS to come up with suggested strategies for optimization of assisted partner notification for HIV index testing services.

Provision funds to support home tracing and testing was reported as a one of the key strategies to optimize APNS. The study revealed that more partners notified about APNS were tested in the community such that funds to support index testing providers travel to the community was essential to increased APNS uptake. The study findings are consistent with what was reported in studies conducted in Malawi, Tanzania and Cameroon where provision of adequate funds to support home tracing increased notification and identification of cases through APNS [9,11,14,17,70,71,76]. Whilst health care workers suggested an increase in the home tracing transport allowance so that they could reach sexual partners that stay very far from the facility and ultimately attain over 90 % notification and testing of the elicited partners, our study further suggests strengthening systems that support provision of adequate funding to allow health care workers reach out to more contacts that leave far away from the health facility. Such client centered approach would support optimisation of APNS uptake and case identification as it provides for health care workers to take the services to those that need them in the community.

Our findings that provider referral or health care worker notification was one of the key strategies to increase uptake of APNS/AIT builds on what systematic reviews and studies conducted in Sub Saharan Africa reported, where health care worker notification reportedly maximized case identification than dual referral and contract referral [5,9,24,28,32,71,76]. Our study revealed provider referral supported some of the indices who were not comfortable to do the notification on their own such that the approach took the onus off from them as sole people responsible for notification. As reported in qualitative and randomised control trials conducted in Kenya and Cameroon [14,71,84] where provider referral approach maximised APNS acceptance and testing, our study suggests optimisation of health care worker notification approach (provider referral) over other contract and dual referral as the approach supports the index's disclosure of results with reduced risk of IPV whilst maximising APNS acceptance among index clients and case identification amongst the partners reached with HIV testing.

Demand creation was reported by health care workers in this study as one of the strategies used to increase uptake of assisted partner notification services. The study results showed that sensitization on APNS and demand creation increased clients' knowledge on APNS ultimately increasing the likelihood of the index client doing the notification. The study results are consistent with findings reported in Malawi, Kenya and Mozambique where demand creation in community gatherings increased clients' engagement at community levels and resulted in clients perceiving APNS as safe and effective [29,65,86,87]. Whilst health care workers suggested engagement of the clients on APNS through morning health talks and counselling sessions at the facility, the study further suggests that policy makers work on developing effective communication strategy which would provide a guiding framework and support health care workers with standardized messages and

approaches for sensitization and demand creation activities for both facility and community, essential to reduce fears and increase acceptance and uptake of APNS.

Screening for intimate partner violence (IPV) was highlighted in the study as one of the strategies used to increase uptake of assisted partner notification services. The study reported that health care workers administer IPV screening questions which focus on physical harm, threat of harm and sexual violence to all indices before they accept APNS/AIT to reduce probability IPV occurrence after notification. Whilst multiple systematic reviews and studies in Africa reported risk and occurrence of IPV mostly among women [5,9,17-22,27-29,57,65,68,69] and highlighted the impact of screening tools in reducing risk and occurrence of IPV [9,14,21,24], our study suggests strengthening the use of IPV screening tool for all index clients before APNS acceptance. Further more, just as reported earlier on in studies conducted in Sub Saharan Africa [21,23-24,27-29,59], our study observed that the likelihood of IPV occurrence was in unstable marriages such that our study further suggests that the process of administering IPV screening should integrate assessment of relationship stability in order to increase sensitivity of the screening tool in reducing IPV risk and ultimately optimising APNS.

Home partner tracing and testing was reported by health care workers as one strategy being used to reach out to more elicited contacts with partner HIV testing services to increase APNS uptake. As reported in studies conducted in Kenya, Malawi and Zambia [59,76,90] where tracing of consented partners physically in their homes and through phones resulted in increased number of contacts being tested for HIV, our study revealed that many of sexual partners could be reached with partner HIV testing if health care workers actively reached out to them in their homes than

being reached out to through phone and inviting them for facility testing. Further to this, our study suggests that optimisation of home tracing and testing over facility testing such that home testing should be prioritised and offered to all contacts and only offer facility testing for those that would opt to. Where possible, such home testing initiative should be supported by timely and adequate provision of funds to support providers conduct adequate provider referral home visits for partner testing.

Provider AIT skills training was reported by health care workers as one of key strategy being used to increase uptake of assisted partner notification services. Building on what was reported in systematic reviews and qualitative studies conducted in Sub Saharan Africa where health care worker training resulted in successful implementation of partner notification programs [5,14,17,21-22,31-32,58], this study observed that provider training equipped health care workers with client motivation skills which would enhance index acceptance of APNS, contact elicitation, partner testing and ultimately increasing uptake of assisted partner notification for HIV index testing. Further to this our study suggests training of more providers to conduct active index testing would enhance the number of contacts being reached with index testing services. Such training if integrated with additional skills for reduction of IPV would catalyse uptake of APNS.

4.5 Study limitations

Tracing of elicited contacts was a challenge in situations where a contact was found to have relocated from the initial physical address provided in the records such that recruiting them as study participants slightly prolonged the study period. Whilst health care worker notification through home testing resulted in increased uptake of assisted partner notification for HIV index

testing, quite a substantial number of contacts who were reached and tested positive, were observed not linked to HIV treatment and care, affecting the percentage achievement of linkage to treatment among new HIV diagnosed positives through home index testing. Our study did not extend to explore the factors that contributed to client's failure to be linked to treatment. Our study suggests a future qualitative research be conducted in this area in order to explore factors that contribute to low linkage to treatment among new HIV positive clients diagnosed through index testing in the community. Despite the limitations, our study extended to reach out to and find opinions and perceptions of sexual partners of indices who refused to come to the facility for testing, a major limitation in one of the key previous qualitative studies conducted in Malawi [9]. Our study adds to the body of language by highlighting individual and social factors that were prohibitive to the uptake of assisted partner notification services among the sexual partners who refused assisted partner notification for HIV index testing services.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter highlights the conclusion and recommendations drawn after assessing barriers and facilitators to uptake of assisted partner notification for HIV index testing among newly diagnosed HIV positive adults at Ndirande health centre.

5.2 Conclusions

Descriptive qualitative research was conducted to assess barriers and facilitators to uptake of assisted partner notification for HIV index testing among newly diagnosed HIV positive clients at Ndirande health centre. Whilst individual-level barriers to the uptake of APNS included lack of knowledge on APNS & HIV, gender, wrong belief in other HIV preventive measures and wrong physical addresses and phone numbers, the facilitators to APNS uptake were age, gender, occupation, education, perceived feeling of being sick and client sensitization. Socially, non disclosure for fear of intimate partner violence, peer and family influence, instability of relationship or marriage, coerced notification were barriers to APNS whilst fear by the index that partner will self discover one's HIV status, positive family and peer influence and openness and trust that existed in stable marriages facilitated disclosure and reduced IPV.

The health system operations, organisation, and human-resource-related issues affected the uptake of APNS. Barriers at health systems included inadequate information on APNS by health care workers, lack of provider knowledge, skills and attitudes, sub optimal provider-client relationship, inadequate funds to support home tracing and testing, heavy workload for the health care workers,

unaccessibility to the facility, proximity of houses in the community and COVID 19 impact. In the context of COVID 19, the aspect of redirecting resources towards the COVID-19 response affected the implementation of this programme in Malawi. Facilitators to APNS uptake at health systems included health care worker knowledge, skills and attitudes, availability of trained index testing provider, health care worker supported notification and provision of home HIV testing.

Suggested strategies for optimization included optimisation of provider referral notification approach, conducting demand creation activities, screening for intimate partner violence, optimisation of partner home testing, training providers in active index testing and issuance of partner notification slips. To achieve optimal uptake of APNS there is a need to strengthen the health system operations and leveraging the strategies that are currently working while researching for more contextualised implementation strategies. In the study, non-disclosure of HIV testing results for fear of IPV was the major prohibitive factor to the uptake of APNS such that as a strategy for optimization, health care workers should actively screen and look for IPV, particularly in clients with unstable relationships and optimize health care worker notification approach which reduces IPV occurrence, support disclosure, and increase APNS uptake.Our study suggests future qualitative research be conducted to explore factors that contribute to low linkage to treatment among new HIV positive clients diagnosed through index testing in the community.

5.3 Recommendations

The study assessed facilitators and barriers to uptake of assisted partner notification services among newly diagnosed HIV positive adults at Ndirande health centre. Based on study findings that were examined thematically at personal, social, health care worker related, geographical and

policy levels, for optimisation of assisted partner notification for HIV index testing, the researcher recommends:

(i) As there is always an increased risk of intimate partner violence (IPV) when offering assisted partner notification services, health care workers should actively look out for IPV risk by screening clients using IPV risk assessment tool and offer APNS only to indices ascertained to be eligible for active index testing with an aim of reducing IPV occurrence among indices and contacts accepting APNS.

(ii) Health care workers and other key facility stakeholders to strengthen the provision of information, education and communication at facility and community aiming at sensitizing and empowering individuals and communities so that they have meaningful awareness of HIV active index testing benefits at individual, family and community levels which is essential to increase uptake of APNS whilst reducing family and community initiated stigma and discrimination.

(iii) Health care workers to optimise home testing to clients who live far from facility and also those that opt to be tested in the community through provider referral. Such method has potential to reach out to more of the elicited contacts than both dual and contract referral. Where possible, programs to support health care workers with adequate provision of funds to ensure adequate number of home testing visits are conducted.

(iv) Training of health care workers in enhanced active index testing skills package which will equip APNS providers with knowledge and appropriate skills in motivational counseling, contact elicitation and profiling which are essential to motivate indices towards APNS

acceptance, increased elicitation of contacts, reduce intimate partner violence, increase notification and case identification.

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APPENDICES

Appendix A. Informed Consent English Version 1.0 8th January, 2020

Study Title: Factors influencing Uptake of Assisted Partner Notification for HIV index testing Among New diagnosed HIV positive adult clients

Principal Investigator: Paul C Puleni

Date: 8th January, 2020.

Introduction

Hello. You are humbly being requested to participate in the study that is exploring factors that influence uptake of assisted partner notification for HIV index testing services among new diagnosed HIV infected adults. Your selection as a potential participant is based on the fact that you were diagnosed to be HIV infected within the past 18 months and accepted assisted partner notification services (APNS) or you are a sexual partner of an index client who accepted APNS and either returned for partner HIV testing services or you refused or yet to return for testing or finally you are the HIV Diagnostic Assistant (HDA) who provides assisted partner notification for HIV index testing services at this facility. Kindly read this informed consent form which has adequate and comprehensive information as regards the study before agreeing to be enrolled in this study. This research is being done as partial fulfillment of a Master of Public Health (MPH)Degree at the College of Medicine, Malawi.

Be notified that the investigator for this study is Paul C Puleni. We would like you have a complete understanding of what this study is all about before deciding to be part of the study. Such being the case, we would like you to know the study background, purpose, methods, potential benefits and risks, compensation, confidentiality and what your responsibilities as a study participant will be during the time you are in the study. Based from your understanding, you will make your decision whether to be in the study or not. If your decision is to be part of the study, you will be required to sign the consent form of which one copy will be left with us and the other will be returned by yourself.

What is the Study?

In sub Saharan Africa where most of the HIV burden is, a considerable number of HIV patients who are living with HIV virus are yet to be tested and confirmed so that they are put on treatment and realize the potential benefit of HIV treatment. Malawi, is one country in the sub Saharan region where this problem is magnitude. Malawi has been implementing passive notification for HIV index testing services since 2013. However, only few PLHIV have been reached out to with the services. Several studies have shown that assisted partner notification for HIV Index Testing services have potential benefits to the index client and partners of the index client.

For the index client, assisted partner notification services for HIV index provide support to PLHIV to assist them in getting their partner(

s) and children tested for HIV. For the partners, APNS maximizes the proportion of partners/children who are notified of their exposure to HIV and further allows HIV-exposed partners and children to get tested for HIV. Further to this, they promote acceptance of HIV results and increase the number of sexual partners and children being linked to HIV treatment and care. As a consequence, low notification by index clients, risks late HIV diagnosis and increases risk of HIV transmission, morbidity and mortality. For the partner, reduced notification for both sexual partners and children results in reduction in proportion of sexual partners being tested, diagnosed, linked to treatment and ultimately increasing the risk of HIV transmission, morbidity and mortality.

Determining factors that influence uptake of assisted partner notification for HIV index testing services among new diagnosed HIV infected adults provides the advantage of identifying barriers and facilitators to uptake of APNS at individual, family and community level.

Aim of the Study

The aim of the study is to explore factors that influence uptake of assisted partner notification for HIV index testing services among new diagnosed HIV positive adult clients at Ndirande Health Centre.

Participation in the Study

You are being informed that your participation is not on the basis of coercion but voluntary and your choice. This means that, we expect you to follow your responsibilities in the study and that should you want to withdraw your participation from the study, this is a possibility and it will

neither affect your attending to services nor quality of the service that you are accorded with at the facility. Whilst in the study, you are free to ask any questions you might have about the study.

Procedure

Having accepted to participate in the study, you will be asked a few questions using an interview guide. You will be expected to provide to the study team with true responses. The interview will not take much of your time and will be conducted once. You will decide on which day and place you will be comfortable with to have you interviewed. The study team will maintain your privacy and confidentiality at any place that you will choose.

Benefits and Risks of the Study

By participating in the research, you will gain valuable knowledge on the benefits of APNS. You will also provide us with information on how best to accept notification and ultimately HIV testing services. Your opinions and perception provided are a benefit to those who are still denying to access HIV testing services through APNS.

The study envisages no risk to your participation save for where you did not tell your partner that you accessed HIV testing services and either started treatment or not. However, this is offset by the fact that your partners will be contacted after your consent.

Compensation

This research does not provide you with neither rewards nor monetary incentives for participating except for K 3 000 to support transport reimbursements and refreshments for the study participants during the interviews.

Confidentiality

We are assuring you that confidentiality and privacy throughout the study period and thereafter are paramount to this study. We shall not use your names in our recordings for your anonymity. All study materials such as tapes and transcripts will be kept locked save for access by the researcher, supervisors, the research committee and key officers for Blantyre district health office.

Data Management

We would like to assure you that all data which shall be collected in this study, will be accessible only by the investigator, supervisor or the Research Ethics Committee. Your data will be kept for a minimum of 5 years after which it shall be destroyed. The dataset will be in password-protected computer data base and informed consent, transcripts and any other source documents will be kept in a lockable filing cabinet.

Contacts Details in case of further questions and clarifications

If you have questions concerning the study now or later, you will contact the Principal Investigator, Paul C Puleni, MPH student at College of Medicine. My phone number is 0 999 540 989. Or, you may contact my study supervisor, Dr Linda Nyondo-Mipando of College of Medicine on 0 999 44 1 212. If for other questions, you want clarification other than from the investigator on concerns such as your participation, rights and risks, you may further need to contact the College of Medicine Research and Ethics Committee (COMREC) on + 265 (0) 1 871 911 or write to The College of Medicine Research and Ethics Committee, P.O.BOX 360, Blantyre, Malawi.

Signature Page:

I declare that I have read and understood all the adequate information about this study. I have been provided with the opportunity to ask questions as well as being provided with comprehensive responses to my satisfaction for all the questions I asked. I voluntarily consent to enroll in the study as a study participant. I accept being audio-recorded and understood that I have the right to end the interview/recording at any time, and choose not to answer particular questions that are asked of me. I have been made fully aware of any potential risks associated with this research and the information provided. My signature indicates my willingness to participate in the research.

By signing below, I consent to participate in the study

_____ _____

Name of Participant Signature or thumb print of participant

Date: _____

_____ _____

Name of Witness Signature or thumb print of the witness

Date_____

_____ Signature: _____

Name of person administering the consent Date:_____

Appendix B. Informed Consent Form Chichewa Version 1.0 8th January, 2020

Dzina La kafukufuku: Kufufuza zikufukwa zimene zimapangitsa kupititsa patsogolo ndondomeko yodziwitsa ndi kuyeza HIV mmagazi a abwenzi wogonana nawo pakati pa anthu akulu amene anapezeka ndi kachilombo ka HIV

Wofufuza: Paul C Puleni

Tsiku: 8th January, 2020**.**

Mawu Oyambirira

Muli kunfunsidwa kutenga nawo mbali mukafukufuku amenene akufufuza zikufukwa zimene zimapangitsa kupititsa patsogolo ndondomeko yodziwitsa ndi kuyeza HIV mmagazi a abwenzi wogonana nawo pakati pa anthu akulu amene anapezeka ndi kachilombo ka HIV. Munasankhidwa kutengapo mbali chifukwa chokuti munapezeka ndi kachilombo ka HIV mmagazi mwanu miyezi 18 yapitayo; kapenanso kuti ndinu mkazi kapena mwamuna wamunthu amene anapezeka ndi kachilombo ka HIV ndipo iyeyo adavomereza ndondomeko yokudziwitsani zoyeza magazi anu koma inuyo mutadziwitsidwa simunavomere kapenanso simunabwere kudzayezetsa ngati muli ndi kachilombo ka HIV; kapenanso kuti ndinu wogwira ntchito yachipatala amane mumapereka uphungu wakuyeza HIV ndinso kupereka ndondomeko yodziwitsa ndi kuyeza HIV mmagazi a abwenzi wogonana nawo pakati pa anthu akulu amene anapezeka ndi kachilombo ka HIV. Kafukufukuyu akupangidwa ngati mbali imodzi ya maphunziro anga a ukachenjede amene ndikuchitira ku sukulu ya College of Medicine, Malawi. Ine amene ndikutsogolera kafukufukuyi, dzina langa ndi Paul C Puleni. Tikufuna kuti mumvetsetse kuti kafukufukuyi akufufuza chiyani musanaganizirepo zotenga mbali. Pachifukwa ichi tidzakufotokozerani chiyambi cha kafukufukuyi, cholinga chake, ndondomeko, phindu ndi kuopsya kwake, chiongola dzanja, kusunga chinsinsi ndiponso udindo wanu panthawi imene mukuchita nawo kafukufukuyu.

Chiyambi cha kafukufukuyu

Kumaiko ambiri amene ali kunsi kwa chipululu cha Sahara, anthu ambiri amene akuganiziridwa kuti ali ndi kachilombo ka HIV, sanayezetsedwe ndi kutsimikizizidwa kuti ali ndi ka chilomboko komanso nkupeza nawo mwayi yoyamba mankhwala a ARV ngati atapezeka ndi HIV. Dziko lino la Malawi, ndi limodzi limene vuto ili, lili lalikulu zedi. Kuno ku Malawi, ndondomeko zodziwitsa wokondeka wa munthu amene ali ndi kachilombo ka HIV zinayamba mchaka cha 2013 komano sizinapindule kwambiri chifukwa padalibe kuthandizirapo pena paliponse kuchokera kwa abwenzi ogonana nawo kapenanso apo achipatala. Akafukufuku ambiri amene anapangidwapo kale anawonetsa kuti ndondomeko yodziwitsa wogonana nawo kuti akayezedwe magazi, imene achipatala kapena abwenzi akutenga nawo mbali imakhala ndi ubwino wambiri.

Kwa munthu amene adayamba kupezeka ndi kachilomboko, ndondomekoyi imathandizirapo kuti abwenzi ake ogonana nawo kapenanso ana afikiridwe ndikuziwitsidwa za chithandizo choyeza ka chilombo ka HIV mmagazi mwawo. Izi, zimathandiza chiwerengero cha abwenzi ogonana nawo komanso ana amene afikiridwe ndi thandizo lakuyeza HIV mmagazi mwawo komanso kuvomereza zotsatira zakuyeza magaziwo. Ndondomekoyi, imathandizanso kuti anthu amene apezeka ndi kachilombo ka HIV, ayambe kumwa makhwala a ma ARV munthawi yoyenera.

Anthu amene amakana kubwera kudzayezetsa magazi awo pamene atadziwitsidwa zakufunika koyezetsa HIV ndi abwenzi wogonana nawowo kapenanso achipatala, ali ndi chiopsyezo chofalitsa kachilomboko, kudwaladwala kapenanso apo kumwalira kumene. Chifukwa chaichi, kuchita kafukufuku wopititsa patsogolo ndondomeko yodziwitsa ndi kuyeza HIV mmagazi a abwenzi ogonana nawo pakati pa anthu akulu amene anapezeka ndi kachilombo ka HIV, ali ndiubwino wotidziwitsa zifukwa zimene zimapangitsa kuti abwenzi agonana nawo abwere kapena kukana kuzayezetsa magazi mwaiwo wokha, pabanja komanso dziko.

Cholinga cha Kafukufuku

Cholinga chachikulu cha kafukufukuyi, nkufufuza zikufukwa zimene zimapangitsa kupititsa patsogolo ndondomeko yodziwitsa ndi kuyeza HIV mmagazi mwa abwezi wogonana nawo pakati pa anthu akulu amene anapezeka ndi kachilombo ka HIV.

Ndondomeko yochita nawo Kafukufukuyu

Muli kudziwitsidwa kuti, kutenga nawo mbali mukafukufuku ameneyu sikokakamiza, koma ufulu wanu kutero. Tili ndi chiyembekezo kuti mukalowa nawo mukafukufukuyi, mudzayenera kuyankha mafunso amene tidzakufunseni mowona bwino. Mafunsowa tidzakufunsani munthawi yochepa komanso mudzakhala ndi ufulu wofunsa mafunso. Nkutheka kuti mukhonza kuganiza kuti musatengepo mbali pa kafukufukuyi, izi sizidzakhudzana ndi chisamaliro chipene mumalandira kuchipatala kuno nthawi zonse.

Phindu ndi Chiopysezo pa Kafukufuku

Pakutengapo gawo mu kafukufuku ameneyu, tili ndichiyembekezo kuti mudzapindula pakuzindikira ubwino umene ulipo kudzera mundondomeko yoyeza HIV abwenzi wogonana nawowo. Mudzatinthandiziranzo potipatsa maganizo anu amene, adzathandiza kuti tiafikire anthu amene akukanabe kuyezetsa HIV ndi uphungu woti avomereze kuyezetsa HIV mmagazi mwawo komanso apo kuyamba kumwa mankhwala a ARV ngati iwowo atapezeka ndi ka chilombo ka HIV.

Pakadali pano, tilibe chiyembekezo chilichonse chakuoopsya kwa kafukufukuyi kuposela kuti mwina zotsatira zanu simunauze wokondeka anu. Mchifukwa chake, mudzatilamula nokha ngati mudzaone kuti ndi chanzeru kuti ticheze ndi okondeka anu pa nkhani ya kafukufukuyi.

Chiongola Dzanja

Pakutenga nawo mbali mukafukufuku ameneyu, sipadzakhala chiongola dzanja china chili chonse kapena apo ndalama ini iliyonse yoti munthu alipidwe. Pozindikira kunena kuti, kukambirana kukhonza kudzakhala malo amene munthu wasankha tidzabwenzeretsedwa ndalama yokwana K 3000 yimene mudzagwiritsa nchito pobwera kuno komanso kubwerera kunyumba**.**

Kusunga Chinsinsi

Tikukutsimikizirani kunena kuti zotsatira za kafukufukuyi zisasungidwa mwachinsinsi. Pakucheza nanu, sitidzafunsa mayina anu ayi. Katundu wogwiritsidwa ntchito pa kafukufukuyi azasungidwa malo otetezeka kuti anthu okhawo woyenera, monga wondiyang’anira ine ofufuzane, madotolo

aakulu oyendetsa zipatala za Blantyre, komanso bungwe la boma lounika maufulu anu mukafukufuku la College of Medicine Ethics and Research Committee (COMREC) athe kuona.

Kusunga ndi Kufafaniza Zonse Zofufuzidwa

Monga mmene tafotokozera pa ndime ya pamwambapo, zonse zimene zizafufuzidwe zidzaonedwa ndi ofufuza yekha, omuyang'anira komanso bungwe la boma loyang'anira ufulu wa anthu otenga nawo mbali mukafukufuku. Zotsatiza zimenezi zizasungidwa kwa zaka zisanu mwachinsinsi mu makina otetezedwa ndipo zonse zolemba mmapepala, zizatsekeredwa mu sefa ndi kiyi kuti okhawo oyenera kuona, athe kutero.

Mutafuna kutipeza ndi mafunso

Ngati mutakhala ndi mafunso, pakadali pano kapena mntsogolo, ndifunseni ine wotsogolera kafukufukuyi, Paul C Puleni, amene ndikuchita maphunziro aukachenjede pa sukulu ya College of Medicine. Mukhonzanso kundipeza poyimba lamya pa 0 999 540 989. Komanso mukhonza kuwayimbira lamya amene akundiyan'ganira kuchita kafukufukuyi, Dr. Linda Nyondo-Mipando a ku College of Medicine pa 0 999 441 212. Nkuthekanso kuti muli ndi mafunso ena opyolera ife makamaka pa nkhani ya maufulu anu pakafukufuku, adziwitseni a COMREC poyimba pa nambala iyi; + 265 (0) 1 871 911 kapena kuwalembera kalata pa keyala iyi; College of Medicine Research and Ethics Committee (COMREC), P.O. Box 360, Blantyre, Malawi.

Chitsindikizo

Ndikukutsimikizirani kunena kuti, ndafotokozeredwa tsatanetsatane wakafukufukuyi ndiponso kupatsidwa mwayi wofunsa mafunso ndikuyankhidwa momveka bwino. Mwaufulu wanga, ndapereka chilolezo kunena kuti nditenga nawo mbali mukafukufukuyu komanso zolankhula zanga zisungidwe mu tepi imene ofufuza akusungiramo nkhani zakafukufukuyi. Ndatsimikiziridwanso kuti, ndili ndi ufulu nthawi inali iliyonse kusiya kafukufukuyi komanso kusankha mafunso oti ndiyankhe mosakakamizidwa. Ndauzidwa ubwino ndi chiopsyezo chimene chingapezeke pa kafukufukuyi ndipo nditakhutitsidwa, ndalola kutenga nawo mbali mukafukufukuyi.

Chisindikizo changa kukusonyeza kuti ndavomereza kutenga nawo mbali mukafukufuku ameneyu.

_____ _____

Dzina La wotenga nawo mbali Kutsindika

Tsiku: _____

_____ _____

Dzina La mboni Kutsindika kwa mboni

Tsiku_____

_____ _____

Dzina la wotsogolera kafukufuku Kutsindika

Tsiku: _____

Appendix C: Interview Guide For Index Clients English Version 1.0 8th January, 2020

Note: Interviewer will greet the respondent. The purpose of the study will be communicated to the respondents and the researcher will guarantee the study participants of their confidentiality. Consent will be sought from them and either read to them or provided to them to read. After participants have read and understood, they will be requested to append their signature voluntarily.

Ensure Respondent sign the ICF.

b) Topic Guide:

It has been observed that, there is a reduction in the number of sexual partners/contacts of the index clients who return for partner HIV testing services at the facility or accept notification and be tested in the community after being actively reached out to by HIV Diagnostic Assistants providing assisted partner notification for HIV index testing services.

Name of interviewer.....

Date of the interview.....

Interview code.....

Socio-demographic information

a) Sex Male Female

b) Age 18 –20 yrs 21 -30 yrs. 31- 40 yrs. 41-50 yrs. >50 yrs.

c) Marital status Married Single Divorced Other

d) Education None Primary Secondary University or college

e) Occupation: Employed Self-employed Farmer

f) Residence Rural Urban

g) Date HIV Index Testing was offered…….

h) Date Index client was expected to notify partner……

i) Date contact expected to return to the facility…….

h) Date contact returned to facility……

b) Topic guide

1) Explain in details what you understand by HIV index testing services

[Allow respondent to explain then prob for knowledge].

2. You were tested for HIV and your results came out that you are HIV infected. Tell me how you felt when you were told that you are HIV infected [Probe for happiness, sadness, acceptance, anger, feeling of betrayal, hopelessness]

A. individual Factors

1. You were offered and accepted assisted partner notification (APNS) for HIV index testing. Tell me the reasons, why you did accept? [Probe for knowledge, individual beliefs, fear of not being assisted at the facility]

11. What do you think are personal factors that facilitate or hinder an individual to accept APNS when confirmed HIV infected [probe whether age, gender and education play a role in accepting or denying APNS]

11. I would like to understand your perspective on the benefits of APNS. [probe for knowledge, opinions and values]

1V. I would like to also understand your perspective on the consequences of APNS [probe for opinions, values, perceived risks and reasons why individuals do not accept APNS]

B. Social Cultural Factors

I. Since the day of your diagnosis, it was expected that you would inform you sexual (spouse and stable) partners on your HIV results. Tell me whether you did inform your sexual partner(s) or not?) [Allow client explain and probe for reasons and beliefs and ask Why for each point]

11. Do you stay with your sexual partner [Probe if nature of relatioships influence notification]

111. It was expected that you would notify your partner(s) about APNS so that she/he accesses HIV testing services

(a) For the index who disclosed their HIV status

(i). What were the reasons for telling your sexual partner (s) about your HIV status? [Probe for social relationship, values on notification, personal conviction for decision to notify and accept APNS]

(ii). How did you feel explaining to your sexual partner about the need to go for HIV index testing at facility or home? [Probe for influence of social relations on APNS, fear of unknown, tenstion within himself]

(iii) Do you have friends that were already tested for HIV and accepted APNS? [Probe whether peers influence decision to accept or refuse APNS]

(iv) What were your feelings or reaction after notifying your sexual partner about APNS [probe for happiness, self blame, stress]

(v) What was the reaction of your sexual partner (s) when you informed her about need for HIV index testing services [Allow client to explain and probe for domestic violence, marriage dissolution, sexual neglect, stigma and discrimination]

(vi) Why do you think other people notifiy their sexual partner (s) on the need to have HIV Active Index testing? [Allow client explain and look peer thoughts and opinions]

(b)For the index who did not disclose their HIV status

(i). Why didn't you tell your sexual partner (s) about your HIV status? [Probe for IPV, sexual neglect, marriage dissolution, stigma and discrimination]

(ii) Do you have friends that were already tested for HIV and refused APNS? [Probe whether peers influence decision to accept or refuse APNS]

(iii) What type of reactions do you envisage to have when you notify your sexual partner (s) about your HIV status and on the need for him/her to get tested [Allow client to explain and probe for domestic violence, marriage dissolution]

(iv**)** What additional support would you have wanted to support disclosure and linkage to treatment [probe for whether provider referral, partner notification slips, couple counselling would support disclosure]

(iv) What do you feel is the significance of APNS in improving your sexual partner(s) lives [Allow client explain and probe for values]

C. Community Factors

1.What are your thoughts about the perceptions of the community on APNS [Probe knowledge and understanding of APNS in the community, ability of indices and contacts to avail themselves for APNS]

2. What are the community's perceptions on people who accepted notification [Prob for community stigmatization and discrimination]

3. What are any shared religious beliefs about HIV active index testing services [probe for influence of religion, how congregants perceive those who accepted notification and treatment]

4. What are the cultural values in the society about APNS [probe whether culture facilitates or impedes notification]

D. Health Systems

I. How is your relationship and interaction with staff at this health facility? [Prob for provider client relationship, attitudes, behaviour]

II. What kind of support do you get from the staff working at this facility? [Probe whether the nature and quality of the support would influence client to accept or refuse APNS?

111. Could you please explain in detail how the counseling sessions went during the day you were being tested for HIV and informed about APNS? [Probe for quality of counselling, knowledge of counsellors, confidentiality]

1V. From the counselling session, were you satisfied by the service provided to you by health care workers on APNS [Probe for adequacy of information on APNS]

Do you have any question for me?

Thank you very much.

Appendix D: Interview Guide for Index Clients Chichewa. Version 1.0 8th January, 2020

Note: Wofufuza adzapereka moni kwa kilayanti. Chifukwa chopangila kafukufukuyi chidzafotokozeredwa komanso kuwauza zamaufulu awo monga kusunga chinsinsi. Kalata yopempha chilolezo chawo idzawerengedwa. Pokhapokha makilayanti akadzamvetsetsa, adzapemphedwa mwa ufulu wawo kuti asindikize dzina kuti alololeza kuwafunsa mafunso akhudzana ndi kafukufukuyu.

Wonetsetsani kuti kilayanti wasayina ICF.

b) Topic Guide:

Pa ndondomeko yovemerezeka ku chipatala, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV amayenera kufikiridwa ndi kudziwitsidwa ubwino wodzayezetsa HIV mmagazi mwawo. Pakadali pano, chiwerengero cha abwenzi ogonana nawowa, chimene chimabwera kuchipatala chitadziwitsidwa za kufunika koyeza magazi ndi achipatala kapenanso bwenzi lawolo, ndichochepa kwambiri. Anthu amene anapezeka ndi HIV atakudziwitsani zoyeza magazi anu, inuyo mutadziwitsidwa simunavomere kapenanso simunabwere kudzayezetsa ngati muli ndi kachilombo ka HIV kuno kuchipatala kapenanso apo kuvomereza kudzayezedwera kumudzi konko.

Dzina La Wofufuza.....

Tsiku Lofufuza.....

Intaviyu Code.....

Socio-demographic information

a) Sex Mwamuna Mkazi

b) Zaka 18 –20 yrs 21 -30 yrs. 31- 40 yrs. 41-50 yrs. >50 yrs.

c) Marital status Ndili pa banja Sindinakwatire Ukwati udatha Zina

d) Sukulu Sindinaphunzire Pulaimale Sekondale Koleji

e) Ntchito: Ndili pa ntchito Bizinesi Mlimi

f) Kokhala Kutauni Kumudzi

g) Tsiku limene Uphungu udaperekedwa…….

h) Tsiku limene patinala anadziwitsidwa……

i) Tsiku limene patinala amayembekezedwa kubwera ku chipatala…….

h) Tsiku limene patinala anabwera ku chipatala……

Mafunso oyambilira

1) Fotozani mwatsatanetsatane chomwe mukutolapo pa ndondomeko yowafikira, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani zomwe adziwa].

2. Munayezetsapo ndi kutsimikizidwa kuti muli ndi kachilombo ka HIV mmagazi mwanu. Tandifotokozereni mmene munalandilira uthenga wakuti muli ndi kachilombo ka HIV [Fufuzani nsangala, nkwiyo, kuvomereza, nkhawa]

A. Individual Factors

1. Fotokozani zifukwa zimene munavomereza kutengapo mbali pa ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani zomwe akudziwa, zikhulupiliro, mantha]

11. Fotokozani zifukwa zimene zingamupangitse munthu kuti avomere kapena akane kutengapo mbali pa ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani ngati zaka, genda kapena maphunziro angapangitse munthu kukana kapena kuvomera ndondomekoyi]

111. Tandifotokozereni ubwino umene ulipo kudzera mundondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani zomwe munthu adziwa, maganizo komanso zimene akonda]

1V. Tandifotokozereni nkhawa kapena kuyipa kumene kungakhalepo kudzera mundondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani magananizo, zikhulupiliro, ziwopsyezo]

B. Social Cultural Factors

I. Kuchokera patsiku lomwe munatsimikizidwa kuti muli ndi kachilombo ka HIV, tidayembekeza kuti muwadziwitsa akazi/amuna anu kapenanso abwenzi ogonana nawo pa zotsatila za magazi anu. Tandifotokozeri, kodi munawauza? [fufuzani zifukwa and maganizo a zilizonse zomwe adachitazo]

11. Kodi mumakhalira nyumba imodzi ndi akazi anu/abwenzi anu [Fufuzani ngati kuzama kwa ubwenzi kukutengapo mbali pa nkhani yodziwitsa zakuyeza HIV]

111. Tidali ndi chiyembekezo kuti muwadziwitsa akazi anu kapenanso abwenzi ogonana nawo pa zotsatila za magazi anu.

(a) Kwa iwo amene adafotokoza zotsatira za kuyeza HIV mmagazi mwawo

(i). Kodi munali ndi zifukwa zotani zimene zidakupangitsani kuti muwadziwitse akazi/amuna anu kapena abwenzi agonana nawo za zotsatira zanu zakuyeza HIV mmagazi mwanu. [Fufuzani kuzama kwa ubwezi, kuyikapo ntima pa chidziwitso, kudzikhulupilira kuti ayenera kufotokoza]

(ii) Tandifotokozereni ngati muli ndi anzanu amene adavomereza kukayeza magazi atadziwitsidwa ndi abwenzi awo [Fufuzani ngati chinzake chimatengapo mbali pa maganozo oyezetsa HIV)

(iii). Tandifotokozereni, kuti mumkamva bwanji mumtima mwanu mmene munkawauza okondedwa anuwo pa kufunika kopita kuchipatala kuti akayezetse HIV? [Fufuzani kuzama kwa ubwenzi, mantha, kuguguda mumtima]

(iv) Tandifotokozereni, kuti mudamva bwanji mumtima mwanu mutatha kuwadziwitsa abwenzi ogonana nawowo za kufunika kopita kuchipatala kuti akayezetse HIV? [Fufuzani nsangala, kudzitsutsa mumtima, nkhawa]

(v) Kodi abwenzi anuwo anachilandira bwanji chidziwitso choti ali kuyenera kukayezetsa HIV? [Fufuzani nkhanza za mbanja, kusokonera kwa ukwati/ubwenzi, kusala kugonana, kusalidwa]

(vi) Kodi inuyo mukuganiza kuti ndi zifukwa zanji zimene zimapangitsa anthu ena amene adapezeka ndi HIV kuti awadziwitse abwenzi agonana nawo kuti nawonso akayezetse HIV? [Fufuzani kuzama kwa chikondi, maganizo]

(b)For the index who did not disclose their HIV status

(i). Kodi ndizifukwa zanji zimene zidakupangitsani kuti musafotokozere abwenzi anu ogonana nawo zakuti muli ndikachilombo ka HIV komanso kuti iwowo akayezetsenso. [Fufuzani nkhanza za mbanja, kusokonera kwa ukwati/ubwenzi, kusala kugonana, kusalidwa].

ii) Tandifotokozereni ngati muli ndi anzanu amene adakana kukayeza magazi atadziwitsidwa ndi abwenzi awo [Fufuzani ngati chinzake chimatengapo mbali pa maganizo oyezetsa HIV)

(iii) Kodi munasowa chithandizo chanji chimene chikadakuthandizani kuti muthe kuwadziwitsa abwenzi anu ogonana nawo kuti akayezetse HIV? [Fufuzani ngati amafuna chithandizo cha wachipatala, chithandizo cha kalata, uphungu woperekedwa pamodzi ngati banja, kuyenderedwa kuti ayezedwere kunyumba]

(iii) Mumaganizo mwanu, muli kuonapo ubwino wanji umene ndondomeko imeneyi ikuthandizira kusintha moyo wa abwenzi anu [Fufuzani za mmene angayamikire ndondomekoyi, mavuto amene ndondomekoyi ingabweretse]

C. Community Factors

1.Tandifotokozereni maganizo anu kuti anthu mmudzi muno amakamba zotani pandondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani kumvetsetsa kwa anthu mmudzimo, kumasuka kwa ma patinala kuti ayezetse, kubisa pokhala]

2.Kodi anthu a mmudzi muno amawawona bwanji anthu amene adavomera ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV kuti iwonso ayezetse [Fufuzani kusalidwa and kunyogodola]

3. Tandifotokozereni, pali zikhulupiliro zanji za mmipingo pankhani ya ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [

Fufuzani gawo limene mpingo ukutengapo popititsa ndondomekoyi mbuyo kapena patsogolo, anthu amumpingowo amawaganizira bwanji anthu amene anavomera ndondomekoyo]

4. Fotokozani pali zikhulupiliro zanji zachikhalidwe cha mmudzi muno pankhani ya ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV [Fufuzani gawo limene zikhulupiliro za chikhalidwe zikutengapo]

D. Health Systems

I. Kodi ubale wanu ndi anthu wogwira ntchito yopereka uphungu pachipatala pano ndi wotani [Fufuzani ngati anthu amakana kubwera kuchipatala chifukwa cha khalidwe la anthu wogwila ntchito yachipatala]

II. Tandifotokozereni, mmene mumawonera chithandizo kuchokera kwa aphungu pachipatala pano [fufuzani kolite ya chithandizo chimene amapatsidwa]

111.Tandifotokozerenin mwatsatanetsatane mmene uphungu udayendera panthawi imene adakuyezani HIV komanso kukupatsani ndondomeko yowafikira ndi kuyeza HIV, abwenzi anu amene mumagonana nawo [Fufuzani kolite ya uphungu, luso ndi kudziwa bwino ntchito kwa aphungu, kusunga chinsinsi, kulemekezedwa]

1V. Kudzera muuphungu umene mudapatsidwawo, kodi mudakhutsitsidwa nawo [Fufuzani ngati kukwanira kwa nkhaniyo kuti ndi mbali yopititsa patsogolo kapena kubweza ndondomeko]

Kodi muli ndi mafunso oti mundifunse?

Zikomo kwambiri.

Appendix E: Interview Guide Sexual Partner/Contact of an Index Client English Version

1.0 8th January, 2020

Note: Interviewer will greet the respondent. The purpose of the study will be communicated to the respondents and the researcher will guarantee the study participants of their confidentiality. The consent will be sought from them and either read to them or provided to them to read. After participants have read and understood, they will be requested to append their signature voluntarily.

Ensure Respondent sign the ICF.

b) Topic Guide:

It has been observed that there is a reduction in the number of sexual partners/contacts of the index clients who return for partner HIV testing services at the facility or accept notification and be tested in the community after being actively reached out to by HIV Diagnostic Assistants providing assisted partner notification for HIV index testing services.

Name of interviewer.....

Date of the interview.....

Interview code.....

Socio-demographic information

a) Sex Male Female

b) Age 18 –20yrs 21- 30 yrs. 31- 40 yrs. 41-50 yrs. >50 yrs.

c) Marital status Married Single Divorced Other

d) Education None Primary Secondary University or college

e) Occupation: Employed Self-employed Farmer

f) Residence Rural Urban

g) Date HIV Index Testing was offered…….

h) Date Index client was expected to notify partner……

i) Date contact was expected to have returned to facility……

h) Date contact returned to facility…….

b) Topic guide

1) Explain in details what you understand by HIV index testing services [Allow respondent to explain then prob for knowledge].

2. You were notified by your sexual partner who got tested for HIV and he/she was confirmed HIV infected. Tell me how you felt when you were notified that your sexual partner is HIV infected and that you need to go to the facility for partner HIV testing [Probe for happiness, sadness, acceptance, anxiety, anger, feeling of betrayal, happiness]

A. individual Factors

For the sexual partner that accepted APNS

(i)You were notified by your sexual partner/provider that you needed to have partner HIV testing services. Tell me, what are the reasons that made you accept? [Probe for knowledge and individual beliefs, individual perception of health, APNS benefits, pressure, trust, coercion]

For the sexual partner that refused APNS

(ii) You were notified by your sexual partner/provider that you needed to have partner HIV testing services offered and refused assisted partner notification (APNS) for HIV index testing. Tell me, the reasons that made you refuse? [Probe for knowledge, individual beliefs, perceived risks, social pressure, lack of trust]

11. What do you think are personal factors that facilitate or hinder an individual to accept APNS when confirmed HIV infected [probe whether age, gender and education play a role in accepting or denying APNS]

11. I would like to understand your perspective on what you think are the benefits of APNS. [probe for opinions, values]

1V. I would like to also understand your perspective on what you think are the consequences of APNS [probe for opinions, values, risk of disease perception]

B. Social Cultural Factors

I. It is expected that when an index client is informed about his/her HIV status, he would notify his or her sexual partner(s). Tell me what are the reasons index clients are afraid of informing their partner about APNS for HIV index testing services? [Allow client explain and probe for whether social relationship like marriage influences disclosure and partner testing, loss of marriage, support, Intimate Partner Violence, Sexual neglect]

11 What additional support would you have wanted to support disclosure and linkage to treatment [probe for whether provider referral, partner notification slips, couple counselling would support disclosure. partner testing and ultimate linkage to treatment]

C. Community Factors

1.What are your thoughts about the perceptions of the community on APNS [Probe knowledge and understanding of APNS in the community, ability of indices and contacts to avail themselves for APNS]

2. What are the community's perceptions on people who accepted notification [Prob for community stigmatization and discrimination]

3. What are any shared religious beliefs about HIV active index testing services [probe for influence of religion, how congregants perceive those who accepted notification and treatment]

4. What are the cultural values in the society about APNS [probe whether culture facilitates or impedes notification]

D. Health Systems

I. How is your relationship and interaction with staff at this health facility? [Probe for whether sexual partners refused APNS because of provider client relationship]

II. How do you access HIV services when need arise [Probe whether distance from the facility is a barrier for the sexual partner to have APNS at the facility]

111. Could you please explain in detail how the counseling session went during the day you were notified about APNS by a health care worker APNS? [Probe for quality of counselling, information provided, knowledge of counsellors, confidentiality, privacy]

1V. Would you explain what your perception is when health care workers provide assisted partner notification for HIV index testing [Probe for coercion, policy awareness in facilitating and impeding uptake of APNS].

V. From the counselling session, were you satisfied by the service provided to you by health care workers on APNS [Probe for adequacy of information and timing of service provision in facilitating and impeding uptake of APNS]

Do you have any questions for me?

Thank you very much

Appendix F: Interview Guide Sexual Partner/Contact of an Index Client- Chichewa

Version 1.0 8th Janaury, 2020

Note: Wofufuza adzapereka moni kwa kilayanti. Chifukwa chopangila kafukufukuyi chidzafotokozeredwa komanso kuwauza zamaufulu awo monga kusunga chinsinsi. Kalata yopempha chilolezo chawo idzawerengedwa. Pokhapokha makilayanti akadzamvetsetsa, adzapemphedwa mwa ufulu wawo kuti asindikize dzina kuti alololeza kuwafunsa mafunso okhudzana ndi kafukufukuyu.

Wonetsetsani kuti kilayanti wasayina ICF.

b) Topic Guide:

Pa ndondomeko yovemerezeka ku chipatala, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV amayenera kufikiridwa ndi kudziwitsidwa ubwino wodzayezetsa HIV mmagazi mwawo. Pakadali pano, chiwerengero cha abwenzi ogonana nawowa, chimene chimabwera kuchipatala chitadziwitsidwa za kufunika koyeza magazi ndi achipatala kapenanso bwenzi lawolo, ndichochepa kwambiri. Anthu amene anapezeka ndi HIV atakudziwitsani zoyeza magazi anu, inuyo mutadziwitsidwa simunavomere kapenanso simunabwere kudzayezetsa ngati muli ndi kachilombo ka HIV kuno kuchipatala kapenanso apo kuvomereza kudzayezedwera kumudzi konko.

Dzina La Wofufuza.....

Tsiku Lofufuza.....

Intaviyu Code.....

a) Sex Mwamuna Mkazi

b) Zaka 18 –20 yrs 21 -30 yrs. 31- 40 yrs. 41-50 yrs. >50 yrs.

c) Marital status Ndili pa banja Sindinakwatire Ukwati udatha Zina

d) Maphunziro Sindinaphunzire Pulaimale Sekondale Koleji

e) Ntchito: Ndili pa ntchito Bizinesi Mlimi

f) Kokhala Kutauni Kumudzi

g) Tsiku limene Uphungu udaperekedwa…….

h) Tsiku limene patinala anadziwitsidwa……

i) Tsiku limene patinala amayembekezedwa kubwera ku chipatala…….

h) Tsiku limene patinala anabwera ku chipatala…….

Name of interviewer.....

Date of the interview.....

Interview code.....

Socio-demographic information

b) Mafunso oyambilira

1) Fotozani mwatsatanetsatene chomwe mukutolapo pa ndondomeko yowafikira, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani zomwe adziwa].

2. Munayezetsapo ndi kutsimikizidwa kuti muli ndi kachilombo ka HIV mmagazi mwanu. Tandifotokozereni mmene munalandilira uthenga wakuti muli ndi kachilombo ka HIV [Fufuzani nsangala, nkwiyo, kuvomereza, nkhawa]

A. individual Factors

For the sexual partner that accepted APNS

(i)Munafotokozeredwa za ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV ndi abwenzi anu. Tandifotokozereni zifukwa zimene zinakupangitsani kuvomera ndondomekoyi [Fufuzani za zomwe adziwa, zikhulupiliro za iye mwini, maganizo ake pa uphungu woyeza HIV, ubwino, kukakamizidwa]

For the sexual partner that refused APNS

(ii) Munafotokozeredwa za ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a amunthu amene anapezeka ndi kachilombo ka HIV ndi abwenzi anu. Tandifotokozereni zifukwa zimene zinakupangitsani kukana kuvomereza ndondomekoyi. [Fufuzani zomwe adziwa, zikhulupiliro za iye mwini, kuopsya kwake kwa ndondomeko, kusakhulupilirana]

1. Tandifotokozereni mmaganizo anu, kodi ndizifukwa zanji zimene zimampangitsa munthu amene ali ndi kachilombo ka HIV kuti avomere kapena kutengapo mbali pandondomeko yokadziwitsa abwenzi amene amagonana nawo kuti nawonso adzayezetse HIV [Fufuzani ngati zaka, genda, maphunziro zikutengapo mbali]

11. Tandifotokozereni ubwino umene ulipo kudzera mundondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani zomwe munthu adziwa, maganizo komanso zimene akonda]

111. Tandifotokozereni nkhawa kapena kuyipa kumene kungakhalepo kudzera mundondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani magananizo, zikhulupiliro, ziwopsyezo pa matenda]

B. Social Cultural Factors

I. Pali chiyembekezo choti pamene munthu watsimikizidwa kuti ali ndi kachilombo ka HIV, amakadziwitsa abwenzi ake ogonanan nawo kuti nawonso adzayezetse HIV. Tandifotokozereni mmaganizo anu kuti ndi zifukwa zanji zimene zimapangitsa kuti munthuyo afotokoze kapena kukana [Fufuzani kuzama kwa ubwezi ngati kukutengapo mbali, kuopa banja kutha, nkhanza za nyumba, kusalidwa kugonana]

11.Kodi munasowa chithandizo chanji chimene chikadakuthandizani kuti muthe kuwadziwitsa abwenzi anu ogonana nawo kuti akayezetse HIV? [Fufuzani ngati amafuna chithandizo cha wachipatala, chithandizo cha kalata, uphungu woperekedwa pamodzi ngati banja, kuyenderedwa kuti ayezedwere kunyumba]

C. Community Factors

1.Tandifotokozereni maganizo anu kuti anthu mmudzi muno amakamba zotani zandondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani kumvetsetsa kwa anthu mmudzimo, kumasuka kwa ma patinala kuti ayezetse, kubisa pokhala]

2.Kodi anthu a mmudzi muno amawawona bwanji anthu amene adavomera pandondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani kusalidwa and kuwanyogodola]

3. Tandifotokozereni pali zikhulupiliro znji za mmipingo pankhani ya ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV? [Fufuzani gawo limene mpingo ukutengapo potititsa ndondomekoyi mbuyo kapena patsogolo, anthu amumpingowo amawaganizira bwanji anthu amene anavomera ndondomekoyo]

4. Fotokozani pali zikhulupiliro zanji zachikhalidwe cha mmudzi muno pankhani ya ndondomeko yowafikira ndi kuyeza HIV, abwenzi wogonana nawo a munthu amene anapezeka ndi kachilombo ka HIV [Fufuzani gawo limene zikhulupiliro za chikhalidwe zikutengapo]

D. Health Systems

I. Kodi ubale wanu ndi anthu wogwira ntchito yopereka uphungu pachipatala pano ndi wotani [Fufuzani ngati anthu amakana kumbwera kuchipatala chifukwa cha khalidwe la anthu ogwira ntchito ya chipatala]

II. Kodi mumayenda bwanji kufika kuno pamene mwafuna kupeza nawo chithandizo kuchokera kuchipatala kuno [Fufuzani ngati mtunda ulipo kuchokera kwawo kufika kuno kungapangitse kuvomera kapena kukana ndondomeko]

111. Tandifotokozereni, mwatsatanetsatane mmene uphungu udayendera panthawi imene adakuyezani HIV komanso kukupatsani ndondomeko yowafikira ndi kuyeza HIV, abwenzi anu amene mumagonana nawo [Fufuzani kolite ya uphungu, luso ndi kudziwa bwino ntchito kwa aphungu, kusunga chinsinsi, kulemekezedwa]

1V. Tandifotokozerani mmene mudawonera maperekedwe a uphungu ndi ndondomeko yowafikira ndi kuyeza HIV, abwenzi anu amene mumagonana nawo. [Fufuzani kukamazizidwa, kudziwa zandondomeko pakati pa ma kilayanti ngati kukupititsa patsogolo kapena kubwenza nkhaniyi mmbuyo].

V.Kudzera muuphungu umene mudapatsidwawo, kodi mudakhutsitsidwa nawo [Fufuzani ngati kukwanira kwa nkhaniyo kuli ndi mbali yopititsa patsogolo kapena kubweza ndondomeko]

Kodi muli ndi funso lina lili lonse?

Zikomo kwambiri

Appendix G. Interview Guide for HIV Diagnostic Assistant (HDA) - English Version 1.0

8th January, 2019

Interviewer will greet the respondent. The purpose of the study will be communicated to the respondents and the researcher will guarantee the health care workers of their confidentiality. The consent will be provided to them to read and later provided to them to append their signature voluntarily.

Ensure Respondent sign the ICF.

Name of interviewer: .....

Date of interview: .....

Interview code: .....

Age of the respondent: .....

Sex of the respondent: .....

Experience in Years: .....

Date received trainings in HTS: .....

Training and experience in APNS/AIT

.....
.....
.....
.....

b) Topic Guide: Programmatically, it has been observed that is there is a reduction in the number of sexual partners/contacts of the index clients who return for partner HIV testing services at the facility or accept notification and be tested in the community after being actively reached out to by their sexual partners and trained HIV Diagnostic Assistants providing assisted partner notification for HIV index testing services.

(A) APNS/Active Index testing service provision

1. Would you please explain to me what you understand by Assisted Partner Notification/HIV Active index Testing? [Probe for provider knowledge]

11. Would you explain what it takes to provide APNS so that there is an increased number of sexual partners returning for HIV partner testing after being notified either by the index or health care worker provider [Allow respondent to respond and probe for providers experience, knowledge, workload]

111. From your experience, would you share what would be the factors that facilitate uptake of APNS [Allow respondent to explain and you can probe on the following]:

- How family and social support influence decisions of disclosure and HIV partner testing
- Attitudes towards HIV active index testing/APNS
- Patient-provider relationship, confidentiality (facility and provider related)

2) How can you compare/differentiate these factors among?

- Men and women
- Young and elders
- New and older patients
- according to their educational levels:

1V. From your experience, would you share what would be the factors that act as barriers to uptake of APNS/HIV Active index Testing [Allow respondent to explain and you can probe on the following]:

- How family and social support influence decisions of being linked to treatment
- Attitudes towards providers providing APNS
- Patient-provider relationship, confidentiality (facility and provider related)
- Influence of costs/distance to clinic
- Waiting time for the patients

2) How can you compare/differentiate these factors among?

- Men and women:
- Young and elders:

- New and older patients
- Educational levels
- where they are living

B. APNS policy and protocol

1. What do you understand about theActive index Testing/APNS policy for Malawi [Probe for providers knowledge on policy]?
2. What do you think are the benefits and disadvantages of APNS/Active Index Testing services? [Probe for providers knowledge]
    a. Individual
    b. Sexual partner
    c. Community/ country

4. What are your procedures when a client is confirmed HIV positive and you would want him/her to accept APNS and bring sexual partner for testing (Probe for)

- Details on information given to the index and contacts concerning benefits of APNS/Consequences of refusing APNS
- How AIT/APNS is integrated in HTS
- Listing and profiling of sexual partners
- Quality of the counselling service that would enhance index client realize the benefit and make a decision to inform partner for HIV Active testing services/APNS.
- Quality of the counselling service that would enhance the sexual partner realize the benefit and make a decision to accept HIV Active testing services/APNS.

5. Which problems are you facing concerning provision of APNS/Active Index testing? [Probe for]

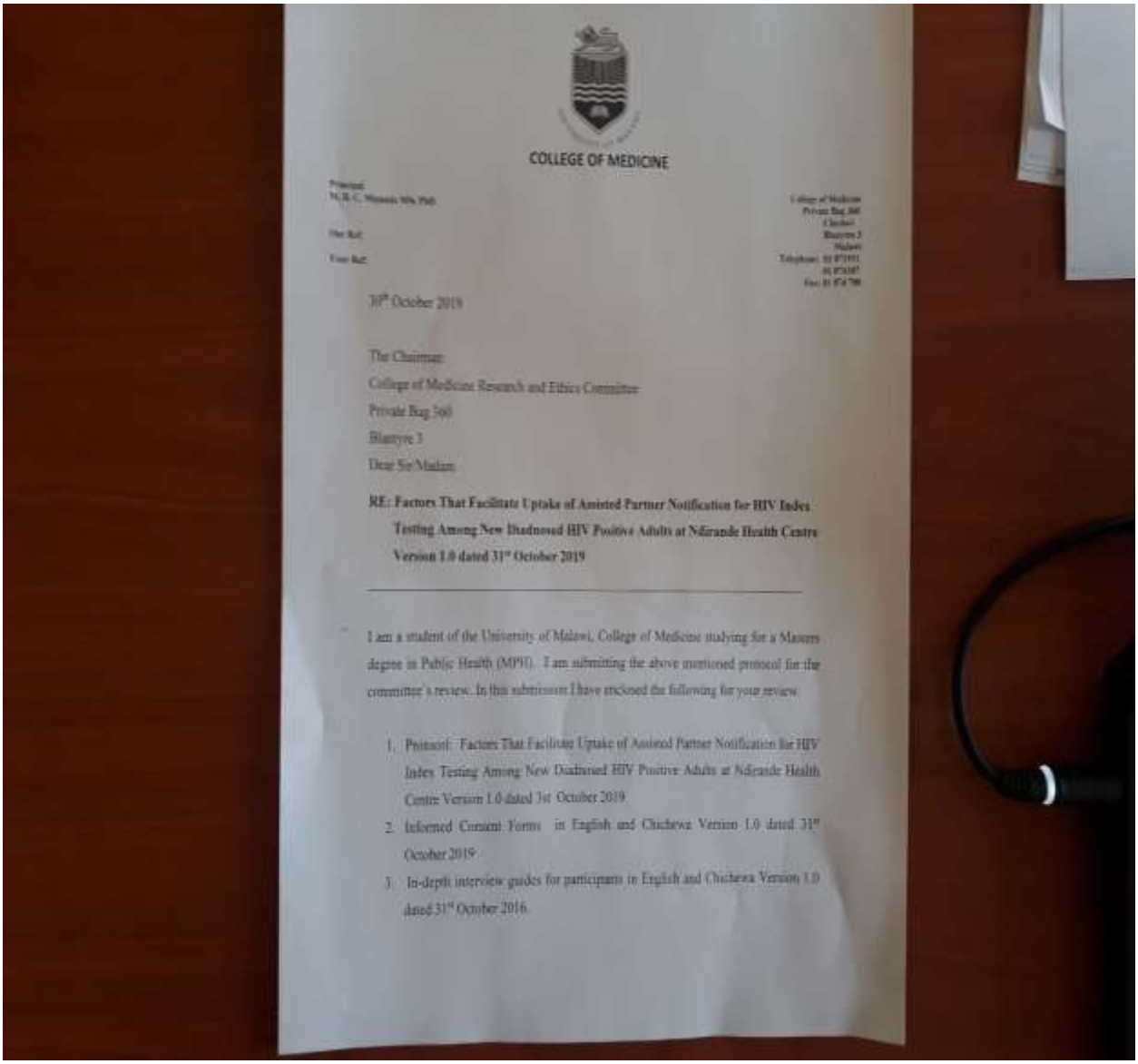
- Type of problem (counselling for partner return for testing, tracing of contacts to be reached with testing)
- How often are these problems faced?
- What mechanisms have they put in place to help solve these problems]

6. What strategies have been put in place to support and facilitate uptake of APNS/Active Index Testing?

7. Given a chance, what suggestions would you want to add as strategies to increase uptake of HIV Active index Testing/APNS

8. From your experience, what do you think is the perception of health care workers and community on this new policy of AIT/APNS [Probe for acceptance of the policy by both provides and community, community stigmatization, coercion, privacy]

Appendix J : Introductory Letter



COLLEGE OF MEDICINE

30th October 2019

The Chairman
College of Medicine Research and Ethics Committee
Private Bag 360
Blantyre 3
Dear Sir/Madam

RE: Factors That Facilitate Uptake of Assisted Partner Notification for HIV Index Testing Among New Diadnosed HIV Positive Adults at Ndirande Health Centre Version 1.0 dated 31st October 2019

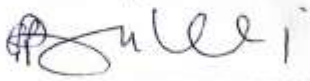
I am a student of the University of Malawi, College of Medicine studying for a Masters degree in Public Health (MPH). I am submitting the above mentioned protocol for the committee's review. In this submission I have enclosed the following for your review:

1. Protocol: Factors That Facilitate Uptake of Assisted Partner Notification for HIV Index Testing Among New Diadnosed HIV Positive Adults at Ndirande Health Centre Version 1.0 dated 1st October 2019
2. Informed Consent Forms in English and Chichewa Version 1.0 dated 31st October 2019
3. In-depth interview guides for participants in English and Chichewa Version 1.0 dated 31st October 2016

4. Curriculum Vitae of the Principal Investigator- Paul C Puleni
5. Curriculum Vitae of the Study Supervisor- Dr Linda Nyondo-Mipando
6. Letter of Support from the Department of Public Health Department
7. Letter of Support from Blantyre DHO

Thank you in advance for the committee's review. Please do not hesitate to contact me should you have any questions about this submission or if there is other information we can provide to facilitate the review.

Yours faithfully,



Paul C Puleni (MPH 2018/2020)
Principal Investigator

Appendix K : Letter of support from Blantyre District Health Office

Ref No: BT DHO/MED/9

18th October, 2019

The In-Charge
Ndirande Health Centre
P/Bag 66
BLANTYRE

Dear Sir/Madam

AUTHORISATION TO CONDUCT RESEARCH AT NDIRANDE HEALTH CENTRE

Authority has been granted to Mr. Paul Puleni to conduct a research on **Factors that influence uptake of assisted partner notification for HIV index testing among new diagnosed HIV positive adult clients :** Ndirande Health Centre.

Any assistance rendered will be highly appreciated.

Yours Faithfully,

Dr. Gift Kawalzira
DIRECTOR OF HEALTH AND SOCIAL SERVICES

Appendix L: Letter of support from Public Health Department

COLLEGE OF MEDICINE
Public Health Department

TO: Chairperson, COMREC

FROM: MPH Tutor

DATE: October 16, 2019

SUBMISSION OF MPH RESEARCH PROPOSAL

Please find enclosed research proposal from our MPH student Paul Puleni, version I, entitled, **"Factors That Influence Uptake of Assisted Partner Notification for HIV Index Testing services among New diagnosed HIV positive Clients: Ndirande Health Centre."**

The proposal was reviewed by the Public Health Research and Postgraduate Committee and was approved for submission to COMREC. The thesis supervisor of this student Dr. Linda Nyondo- Mipando has endorsed the submission.

Thank you.

Dr. Susan Carnes Chichlowska
MPH Tutor

Appendix M: COMREC study approval letter

CERTIFICATE OF ETHICS APPROVAL

This is to certify that the College of Medicine Research and Ethics Committee (COMREC) has reviewed and approved a study entitled:

P.12/19/2898 - FACTORS THAT INFLUENCE UPTAKE OF ASSISTED PARTNER NOTIFICATION FOR HIV INDEX TESTING SERVICES AMONG NEW DIAGNOSED HIV POSITIVE ADULTS AT NDIRANDE HEALTH CENTRE by PAUL C PULENI

On 23-Jan-20

23-Jan-20

Approved by College of Medicine Research and Ethics Committee (COMREC)