FACTORS INFLUENCING THE UPTAKE OF COUPLE'S HIV COUNSELLING AND TESTING AMONG MEN IN LIVINGSTONE DISTRICT, ZAMBIA.

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KEY WORDS

- Attitudes
- Barriers
- Cases and Controls**.**
- Couples
- Counselling and testing
- Heterosexual
- HIV
- Knowledge
- Prevention
- Sero- discordant

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
CHCT	Couples HIV Counselling and Testing
DCT	Diagnostic Counselling and Testing
DHO	District Health Office
DNA	Deoxyribonucleic Acid
ERES	Excellence in Research Ethics Science
HBTC	Home Based Testing and Counselling
HCT	HIV Counselling and Testing
INA	Influence Network Agents
IPC	Inter-personal Communication
IRB	Institution Review Board
MoH	Ministry of Health
NAC	National AIDS Council
NASF	National AIDS Strategic Framework
PITC	Provider Initiated Testing and Counselling
PMTCT	Prevention of Mother to Child Transmission
SFH	Society for Family Health
STI	Sexually Transmitted Infections
UNAIDS	United Nations Program on HIVAIDS
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session
WHO	World Health Organisation
ZVCTS	Zambia Voluntary Counselling and testing Services
ZDHS	Zambia Demographic Health Survey

DEFINITION OF KEY TERMS

Cohabiting – When a man and a woman who are not married live together

Couple – A man and a woman who are in a relationship

Confidentiality – A situation whereby all information that is discussed between two or more people is kept as private and not shared with others.

Counselling – A confidential interaction between a counsellor and a clients

Discordant couple – two people in a relationship where one partner is HIV positive and the other is HIV negative

Heterosexual relationship – A male and female sexual relationship

Human immuno deficiency Virus (HIV) - The virus that causes AIDS

Counselling and testing – is a process by which an individual or couples undergoes counselling and testing to enable them to make an informed decision about being tested for HIV after which they develop a risk reduction plan.

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ABSTRACT

Background: HIV counselling and testing is important as a gateway to accessing prevention, treatment, care and support services. Studies have shown that couples who are married or are in a stable heterosexual relationship are at risk of transmitting HIV infection to each other if one partner is infected. The uptake of couples counselling and testing (CHCT) by males in Livingstone is very low despite the fact that they are the decision makers in most homes.

Aim: The aim of the study was to assess the factors determining the uptake of CHCT amongst males in a long term heterosexual relationship who came to a health facility for HIV counselling and testing in Livingstone, Zambia and their perceived benefits of CHCT.

Methodology: A case control study was conducted with cases being men age 21 years and above, who were married/cohabiting or were in a steady heterosexual relationship for six months and more and had jointly tested for HIV as a couple, and controls were men age 21 years and above, who were married/cohabiting or were in a steady relationship for six months and more and came to be tested for HIV alone without a partner. The structured questionnaires were administered to a total of 294 participants (147 controls, 147 cases) who were recruited from three public health facilities and one private facility in Livingstone between August and September 2013.

Results: The only 2 factors independently associated with testing for HIV via CHCT was 'talking about HIV as a couple' which positively affected CHCT and 'had a previous HIV test as a couple' which negatively affected CHCT. Findings indicate that 'talk about HIV as a couple' was a strong independent predictor of CHCT in the multivariate analysis; however it was uncertain whether it was a predictor of CHCT or a consequence of CHCT. It is probable that having already 'had a previous HIV test as a couple' the participants would not see the need for testing via CHCT again. Other factors that were significantly associated with uptake of CHCT on bivariate analysis but were not significant on multivariate logistic regression analysis included those that are associated with a greater likelihood of CHCT: think CHCT is beneficial /useful, know partners HIV status, know positive things about CHCT and talk about sexual issues as a couple. Other factors negatively associated with uptake of CHCT were: ever tested for HIV before, informed partner about HIV status, think partner is at risk of contracting HIV, think self is at risk of contracting HIV, low self risk-rating of HIV infection and marital status.

Conclusion:

The decision for a couple to go for CHCT is probably relatively complex, because most of the factors measured were linked to each other and it was difficult to separate them to identify if a factor on its own was able to influence the uptake of CHCT. However a couple that communicates with each other about HIV issues is likely to be motivated to go for CHCT.

Declaration

I declare that Factors influencing the uptake of couple's HIV counselling and testing among men in Livingstone District, Zambia, is my own work, that it has not been submitted for any degree or examination in any university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Sarah Nyirongo Ngoma

Signed 

Date 25 August 2015

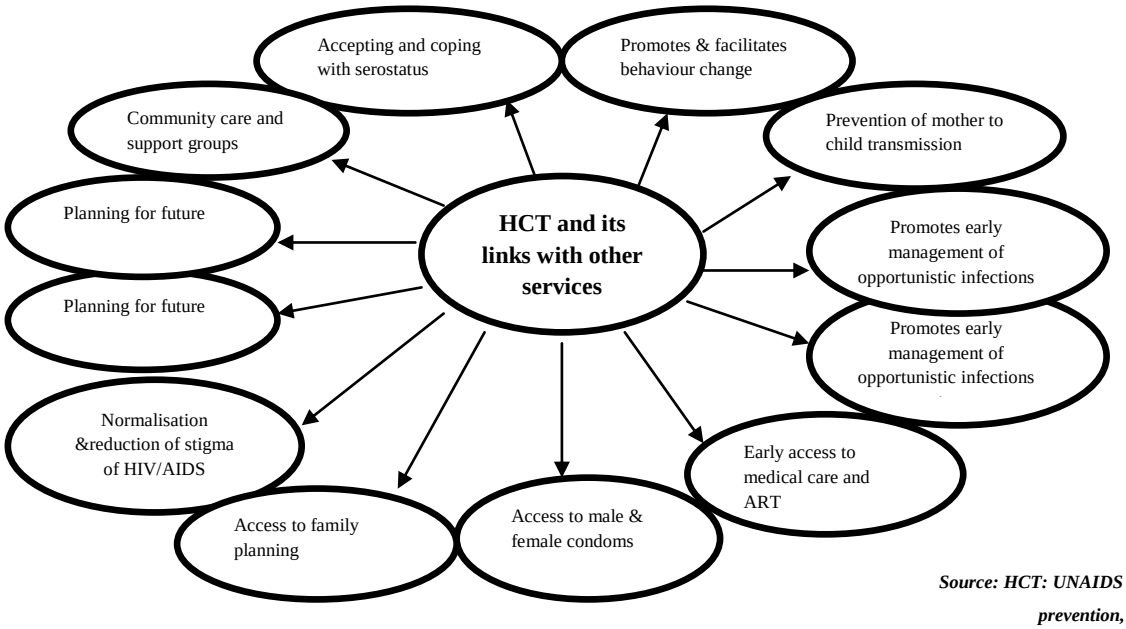
CHAPTER 1 INTRODUCTION

BACKGROUND

New HIV infections continue to ravage the lives of adults and children worldwide especially in Sub-Saharan Africa. It is estimated that 2.7 million new HIV infections occurred in 2008 globally while 1.9 million (68%) new infections occurred among adults age 15-49 years old in Sub-Saharan Africa (SAA) (UNAIDS/WHO, 2009). Zambia is among the heavily affected countries with an HIV prevalence of 14.3% amongst adults aged 15-49 years (ZDHS, 2007). In 2009 there were about 82,681 new infections among adults in Zambia, translating into 226 new adult infections per day. Reports showed that there was a significantly higher HIV prevalence amongst urban (14%) couples (both HIV discordant and concordant positive) compared to rural (5%) couples (UNGASS, 2010).

In response to the epidemic, the National AIDS Council (NAC) conducted consultative meetings with major stakeholders to come up with national priorities for a multi-sectoral HIV and AIDS response. The team came up with four pillars namely; prevention, treatment, care and support and impact mitigation. A priority intervention identified was the acceleration and intensification of prevention to reduce new HIV infections by 50% by 2015 (NASF, 2006-2010). Scaling up HIV counselling and testing (HCT) services was positioned as a key strategy under prevention interventions. HCT is a key entry point to treatment and it links one to prevention and support services as shown in Figure 1.

Figure 1: HCT an entry point to prevention, treatment care and support



Source: HCT: UNAIDS gateway to prevention, June 2002

Enabling individuals to undergo HCT to know their HIV status links them to a wider range of prevention, treatment, care and support services (United National Population Fund (UNFPA), 2002). The services include; easier access to male and female condoms, access to prevention of mother to child transmission services for those who are pregnant, and family planning services for women who are of child bearing age and not pregnant but want to prevent pregnancy. If an individual has a sexually transmitted infection (STI), he/she is referred for screening to receive early medical care. Clients who test HIV positive have access to early management of opportunistic infections and are assessed for commencement of antiretroviral therapy (ART) if they meet the eligibility criteria (CD4 count less than 350 c/µl or if the patients is in stage 3 of disease progression). HCT enhances access to community support and care and related services such as linkage to support groups where people living with HIV (PLWHA) share their experiences on accepting and coping with their serostatus, hence, self and community stigma is reduced. As a result of HCT individuals are able to plan for their future regardless of their HIV status as they will see the need to adopt safer behaviour in terms of remaining negative if the result is HIV negative, or to avoid infecting others if the result is HIV positive. The Ministry of Health (MoH) increased voluntary HIV counselling and testing (HCT) outlets from 500 facilities in 2005 to 1,102 in 2009 (NASF, 2011-2015). Realising that the commonest mode of transmission in Zambia is through unprotected heterosexual transmission (ZDHS, 2002 & ZDHS, 2007) and also that HIV prevalence was high (18%) among pregnant women (most of whom were married), it was deemed imperative to introduce couple HIV counselling and testing (CHCT) services. CHCT was promoted at some of the antenatal clinics starting with clinics in Lusaka. However, the uptake was very low because men found it strange to visit antenatal clinics with their wives, as previously women had always attended antenatal clinics alone. In 2002, the MoH rolled out antiretroviral therapy (ART) in all public health facilities at a subsidised fee in order to allow more individuals and couples access to the services, but only those who could afford to pay benefited. In 2005 government reviewed the program and came up with the campaign of universal access to ART, thus the subsidy fee was abolished and ART was given for free to all eligible clients. The introduction of diagnostic counselling and testing (DCT), as a routine service for clients who presented with possible clinical signs of HIV infection at the out-patients department (OPD), improved the uptake of HCT by men. HCT departments were established in all public health facilities to allow those men and women who do not come with ailments to OPD, but want to know their serostatus to access the service. The Ministry of information, together with the central board of health promoted CHCT and ART services

through mass media campaigns and through the community neighbourhood health committees. Some non-governmental organisations (NGOs) which received funding from United States President's Emergency Plan for AIDS Relief (PEPFAR), Center for Disease Control (CDC) and other funders, started providing couples counselling and testing through government health facilities, stand alone sites and via community outreach (WHO, 2005). Despite the above interventions, only about 12% of Zambian men who are married/cohabiting had tested and knew their HIV status compared to 20% of married/cohabiting women by 2007 (ZDHS, 2007).

Evidence from the Zambia HIV Prevention Response and Modes of Transmission Analysis Report (NAC MoT, 2009) revealed multiple and concurrent partnerships (MCP) as one of the key drivers of the epidemic in Zambia. A study by Allen *et al,* (2008) showed that a significant proportion of new infections (60%) are through unprotected heterosexual transmission among married and cohabiting couples. Sero-discordance was found to be high among heterosexual couples as the study revealed that 23% of couples tested were discordant (one partner is HIV negative, the other is HIV positive) (Allen *et al*, 2008). Discordant results may happen due to prior infection of one partner, infidelity by one of the partners, ignorance of self or partner's status and low risk perception. (Kaiser *et al*, 2011). In response to the study results, the NAC included couples counselling and testing services in the HIV prevention strategy, though it was not one of the priority interventions in 2009. Individual HIV counselling and testing remains the most important prevention intervention in Zambia as demonstrated by most public and private HCT providers.

The prevalence of discordance in the general population among married and cohabiting couples in Africa ranges from 3% to 20% with an annual incidence of HIV infection for negative partners in discordant couples ranging from 10% to 20% (Carpenter *et al*, 1999, Gray *et al*, 2001 Kabatesi *et al, 2002* and Hugonnet *et al,* 2002). Evidence from a study conducted in Rakai Uganda to examine viral load and heterosexual transmission of HIV type 1 among counselled couples in a stable sexual relationship, revealed a seroconversion rate of 11.8 per 100 person-years in HIV negative partners (Quinn *et al*, 2000), while the study in Mwanza Tanzania showed 10 per 100 person years in HIV negative females and 5 per 100 person –years in HIV negative males (Hugonnet *et al*, 2002. The high risk among discordant couples could be attributed to; frequent unprotected sexual acts especially in steady relationships, lack of knowledge about partner's HIV status, forced unprotected sex with an infected partner, low levels of condom use in long term relationships and low risk perception (Zambia Sexual and Behaviour Survey, 2003). In Lusaka, DNA sequencing confirmed that 87% of new HIV infections are acquired from the spouse (Allen

et al, 2003). HIV transmission is also dependant on the whether the partner has genital ulcerations and a high viral load (Gray *et al*, 2001).

Prospective CHCT counsellors undergo an intensive standardised couple counselling training course before they are allowed to conduct counselling for couples. The process of couple counselling involves two people (woman and man) voluntarily being counselled together regarding HIV infection and its implications. They jointly receive pre-test counselling and sign a testing consent form before blood is drawn for testing. Blood is collected through a finger prick or vein and tested using the national HIV rapid testing algorithm. Results are provided jointly immediately they are ready, thereafter, joint post test counselling is conducted and finally the couple is allowed to draw up an action plan together. Coupling the couples together is an important intervention in reducing new HIV infections through shared responsibility.

The lack of male involvement in HIV prevention activities inhibits female participation (Leonard, Mane &Rutenberg, 2001). Males, although most of them tend to be unfamiliar with prevention programs, could play a big role in influencing their female partners to take up testing because they are perceived as decision makers in the home. The full involvement of males in joint prevention activities such as CHCT would also enhance prevention of HIV transmission through adoption of preventive behaviours such as use of condoms, increased uptake and adherence to antiretroviral treatment in discordant couples and preventing mother to child HIV transmission in pregnant women (Nyblade& Field-Nguer, 2001). CHCT, if conducted by skilled counsellors, is able to provide better decisions for the partner who is HIV negative to remain negative and assists the one who tests HIV positive to reduce the risk of transmitting the virus to the negative partner, thus it can avert up to 60% new infections if increased regular condom use results from the joint counselling (Kelley *et al*, 2011).

Study setting

Livingstone, a city situated in the southern part of Zambia and about 500km from the capital city Lusaka has a total population of 142,034 with 78,830 adults above 18years of age, and of these, 38,627 (49%) are men (CSO, 2010). Livingstone is also a tourist capital attracting more than 500,000 tourists per year. The city has the highest rate of HIV/AIDS in the country, estimated at 27% (the country's average is 14.3%) (ZDHS, 2007).Livingstone shares borders with Zimbabwe, Namibia and Botswana and is a main entry point into these countries by road. The high HIV prevalence is attributed to increased poverty at the household level leading to increased unprotected sex. The commonest mode of transmission is heterosexual, especially among the reproductive age group of 15–45 years and women are more vulnerable than men (UN-HABITAT, 2009). A study conducted by Fisher (2003) identified the predominant key drivers of

the HIV epidemic in Livingstone to be transactional and commercial sex work among young women and men (usually patrons of bars and nightclubs with truck drivers and tourists as common potential clients), alcohol and drug abuse, early marriages, low condom use, multiple and concurrent partnerships and cross border trading.

HIV counselling and testing services in Livingstone are provided by qualified counsellors in two big Non-Governmental Organizations (NGOs), five urban government clinics and 12 rural government clinics. The models of delivery include; fixed sites where clients can seek services and through home-based and mobile testing. HCT providers/counsellors visit a community and move from house to house educating members on the importance of HIV testing; and those who are willing to be tested are provided with the services. CHCT is provided free of charge in all the facilities in Zambia thus, no fee is paid for the service. Results of a case study published by the Society for Family Health (SFH) in 2010, revealed that out of a total of 11,458 adults who received HCT in 2010, only 9% tested as a couple in Livingstone, 11% had discordant test results, 5% concordant positive and 84% concordant negative (SFH MIS, 2010). Data from Livingstone on CHCT collected by the Society for Family Health, who are the main providers of CHCT services in Livingstone, showed that only 1% of the men in Livingstone tested for HIV with their female partner in 2010 and in 2011(SFH MIS, 2010; SFH MIS, 2011). It is not clear why the uptake is this low among males.

Some studies have revealed some of the perceived benefits of CHCT for males such as: the belief that testing is a preventive health measure if conducted as a prerequisite before marriage; that CHCT is a means to reaffirm one's commitment to the relationship; that CHCT is a way of confirming suspected HIV negative serostatus (Maman, 2001)), and that CHCT is good for prevention of HIV transmission between partners (Kelley *et al*, 2011).

Strategies to increase demand for males to go for CHCT in Livingstone have been tried before such as mass media campaigns under the slogan “Get tested together, get tested today”, which had been running since 2009. Campaigns were running through local and national media including the national television, as well as national and local radio stations broadcasted in different languages. National HCT promotion months (June for HCT day and in December for world AIDS day) are used to intensify campaigns each year. The introduction of interpersonal communication (IPC) activities such as one to one and small group discussions was also promoted, so that communication assistants could directly talk to couples. Printed information such as leaflets and fliers with information on CHCT is distributed in the community, while CHCT billboards are placed in strategic places like bus stops and markets to create awareness.

Despite all the above approaches and benefits of CHCT, male uptake of couple HIV counselling and testing in Livingstone remains low. It was therefore important that potential factors that could be influencing male uptake of CHCT services such as attitude, knowledge, behaviour, stigma, social and cultural norms, as well as the accessibility and benefits of CHCT were investigated.

Statement of the problem

Only 1% of men in Livingstone tested as a couple between 2010 and 2011, despite intensified awareness campaigns conducted through mass media, information, education and communication (IEC) and community sensitization (SFH MIS, 2010). Therefore a study was necessary to assess the factors affecting the uptake of CHCT and the perceived importance of CHCT amongst men in a long term relationship and to understand why the uptake was so low.

Purpose

The purpose of the study was to investigate the low uptake of couples counselling and testing among men in Livingstone and to compare the perceptions among men who had tested as a couple and those men who had tested as individuals.

CHAPTER 2 LITERATURE REVIEW

This literature review is organised in ten sections which covers various aspects of HCT, CHCT and specifically focuses on the benefits of and factors influencing the uptake of couple counselling and testing.

2.1Value of HIV counselling and testing as an entry point to HIV care and treatment

Early diagnosis of HIV infection through taking an HIV test is the first step to accessing care and treatment, yet data from 12 sub-Saharan Africa countries collected through population-based surveys between 2005 and 2007 revealed that a median of only 20% of people living with HIV knew their HIV status (NAC, 2010; WHO/UNAIDS/UNICEF, 2007). HCT provides essential knowledge and support to individuals at risk of contracting HIV and enables uninfected individuals to remain negative, while infected individuals are helped to plan for their future (Medley, Garcia-Moreno, McGill &Maman, 2004). HCT also provides a key entry point to prevention, treatment, care and support services for HIV (Girma and Enquiselassie, 2009) as provision of antiretroviral treatment requires identification of HIV infection in an individual (Gong, 2010). HCT will enable people who test HIV positive to access early HIV specific care, treatment and other support services (Kadri and Pradeep, 2010).

Provider initiated testing and counselling (PITC) introduced at nine primary health care facilities in Zambia resulted in a doubling of the uptake of HCT. Out of those who accepted testing, 21% tested positive and 38% of those who tested HIV positive enrolled in HIV care and treatment within 6 days after testing (Topp et al, 2011) meaning that individuals who received HCT were likely to access HIV care services such as treatment, care and support.

The introduction of client initiated HIV testing, where an individual actively seeks testing services on their own, as well as the expansion of HIV counselling and testing services in 2007-2008, resulted in an increase in uptake of HCT in low and middle income countries (UNAIDS/WHO, 2009). This in turn increased the number of people (if eligible) accessing HAART thereby reducing chances of transmitting the virus.

A study conducted in rural Western Kenya to establish if clients who tested HIV positive through home based testing and counselling (HBTC) had sought HIV care services within 6 months of diagnosis revealed that, out of the total clients referred for care and treatment services, 41% reported being enrolled in HIV care within 6 months of HBTC (Amollah, 2011). Amolloh's study also found that factors associated with care enrolment included being female, having disclosed the status and poor health status. Gong (2010) affirms that not all individuals who test

HIV positive will be motivated to seek further services, especially if they are still feeling strong and /or have a low risk perception.

2.2 Value of HIV counselling and testing as a prevention activity

The HIV counselling process helps someone to evaluate their risks of transmitting or contracting HIV, promotes preventive behaviour and provides an opportunity for individuals to be educated on the importance and methods of preventing an HIV infected person from transmitting the virus to a sexual partner, thereby preventing HIV negative individuals from being infected (Lampty, Wigley, Dara & Collymore, 2002). Prevention is enhanced, supported and encouraged by HCT.

Naidoo and Wills (2000) argues that knowledge about something as well as giving accurate messages targeted at individuals who are at risk can promote behaviour change in an individual. It is believed that those who receive information on prevention during a counselling session are more likely to implement HIV prevention interventions, thereby reducing risks of HIV infections. For instance, individuals who may have thought they were at high risk of being HIV infected but tested HIV negative, are likely to reduce the risks of contracting HIV infection by 60% due to the fact that they may adopt safer sex behaviour (Gong, 2010). However, it is also believed that it is very difficult to convince someone to change their behaviour if he/she has a low risk perception regarding HIV infection (Lampty, Wigley, Dara &Collymore, 2002).

People who are HIV positive, who have not tested for HIV, and hence do not know that they are infected, are less likely to take precautions to prevent spreading the HI virus to others. Therefore, if they got tested and knew their status, they are likely to take precautions against spreading the virus (Kadri& Pradeep, 2010).

Heaton and Falola, (2008) states that many different factors affect how knowledge is disseminated, how people will receive this knowledge; how they will internalize this knowledge, utilize it in their everyday lives and how they approach health-service provision. In other words, Heaton and Falola argue that a person can choose what to believe in from knowledge received and that is what will influence their behaviour. This concept can be supported by the findings from a study on HIV testing and sexual behaviour by Gong (2010) which revealed that people who believed they were at low risk of contracting an STI, had a six-fold increase in contracting a STI following an HIV positive test, which indicates ongoing risky sexual behavior. This means that despite the fact that information on HIV and risk reduction was received during the HCT session, the results did not agree with their beliefs. It is therefore probable that individuals choose what to believe in and it is likely that HIV testing only affects behaviour if one receives new information (Gong, 2010).

However, this assumption is contested as shown in the study conducted in Kenya, Tanzania and Trinidad to determine the value of HCT in reducing unprotected sex among individuals and couples, where there was a 35% reduction in unprotected sexual intercourse for men who received HCT with their partners compared to a 13% reduction among individuals who just received health information without HIV testing. As for individual women there was a 39% reduction in those with HCT, compared to a 17% reduction among those who just received health information without HCT (Coates & The Voluntary HIV-1 CT Efficacy Study Group, 2000). In this case HCT had more impact with regards to sexual behaviour change than education on its own.

A study conducted in Zimbabwe revealed that women who tested HIV positive reported increased consistent use of condoms with their regular sexual partners, but not with the irregular partners, compared to the individuals who tested HIV negative. The study further revealed that individuals who tested negative were more likely to indulge in more risky behaviours such as concurrent partnerships. The subsequent HIV incidence was the same between the tested and those not tested (Sherr *et al, 2007*). These findings means that HCT had very little or no effect as far as HIV prevention is concerned because there was no behaviour change. Change of behaviour is very difficult and this could be due to poor quality of counselling which may have affected the outcome, as it was revealed in the same study that only about 51% of the participants who had HCT received pre-test counselling. The rest were tested without pre-test counselling despite it being part of HCT process and according to national guidelines (Sherr *et al,* 2007). Other barriers to behaviour change include: failure to negotiate for safer sex with sexual partners after VCT; both partners not aware of their status making it difficult for them to use long term protection; failure to disclose the status due to fear of gender violence, rejection and stigma especially in women; and HIV positive women who undergo HCT failing to educate their partners on preventive measures even if they did not know their status (UNAIDS, 2001).

A study was conducted by Platter (2010), to explore the effects of risky beliefs associated with the experience of testing HIV negative among young (18-21 years) university students in Botswana. The study compared the HIV-related beliefs between students who tested for HIV infection and those who had never done an HIV test. Findings were that students who had done an HIV test and tested HIV negative were more likely to believe that they were in control of HIV and, they trusted their partners so much that they did not see the need to use a condom even if they did not know their partner's HIV status, because they believed that their partners were also HIV negative. The students were less likely to think that they could expose themselves to the risk

of contracting HIV infection. The belief of using their HIV negative test results to build trust on their partners would result into risky sexual behaviours. Additionally, this outcome would mean that knowledge gained or information given during counselling did not have any effect on the behaviour of the students. This belief could affirm the fact that HCT only affects people's behaviour if it provides new information which helps update their beliefs about their HIV status (Sanderson, 2004; Gong, 2010). The above findings show that people can develop false beliefs about themselves that they are safe and are not at risk of HIV infection when they test HIV negative even if they do not know their partner's status. Individuals are more likely to adopt safer sex behaviour if they believe that the benefits of adopting such will outweigh the risks (Alberta Health Services (2010).

The fact that not all individuals who test HIV positive will show signs of illness means that some individuals may go on living a risky life and not worry about infecting others and or re-infecting themselves. While research suggests that appropriate HCT can lead to adoption of safer behaviour among the HIV positive individuals (Bunnell et al, 2006), behaviour change should be seen as an individual's choice therefore client centred pre and post test counselling would be essential to promote effective behaviour modification. It is common for discordant couples or an individual who tests HIV positive to practice unsafe sex with partners of unknown HIV status (Bunnell *et al*, 2006). This behaviour may be due to the beliefs that may affect how knowledge is received and how the person will internalize knowledge and make use of it. An overview of the investigation on health knowledge and beliefs by Heaton and Falola (2008) allude to the fact that knowledge about health, that a person chooses to believe in affects their health seeking behaviour. Equally, a person can change their sexual behaviour if the perceived benefits of this action outweigh the perceived risks (Alberta Health Services, 2010).

2.3 Factors affecting uptake of HCT (promoters and barriers)

Some of the promoters to the uptake of HCT include; the models of HCT delivery such as mobile, home based, workplace and diagnostic HCT as well as the point of care rapid HIV testing (Day *et al*, 2004). The point of care rapid HIV testing is preferred because the HIV test results are ready within 20 minutes and are given on the same day compared to the laboratory testing where a person is asked to come for results on another day. People are sometimes self motivated and may choose to go for an HIV test. (Client initiated). Client initiated HCT a model whereby an individual makes their own decision to actively seek counselling and testing services from any available providers of the services (Fylkesnes & Siziya, 2004). The individual is self

motivated maybe through information that they have received concerning HIV, or it can be ill health which they suspect could be due to HIV infection. It is a well known fact that the availability of HIV treatment, care and support services can be a powerful motivating factor for people to seek HCT (Lampty, Wigley, Dara &Collymore, 2002).

A cross-sectional interview study among clients attending HCT centres in Egypt to determine the main reasons for seeking HCT services revealed that individuals were worried about their own risky sexual behaviours. More women sought HCT services due to suspected partner's risky behaviour compared to men. The good quality of services was cited by 90% of clients as one of the reasons they sought HCT implying that other HCT centres offered poor quality of services (Attalla, Kabbash, Hassan, Mekheimer & Al-Nawawy, 2010).

In a demographic analysis by Sherr *et al* (2007), findings were that highly educated individuals were more likely to test for HIV, and that perception of individual risk of HIV did not drive individuals to seek HIV testing.

The model of delivery of HCT services such as home-based HCT, mobile HCT (clients are followed in the community) eliminates the cost of transport to the health facilities for those who cannot afford transport money, while routine offering of HCT at health facilities promote and increase the uptake of HCT in areas where the uptake was low especially among women (Bwambale, Ssali, Byaruhanga, Kalyango & Karamagi, 2008; Ali *et al,* 2006; Morin *et al,* 2006; Matovu *et al,* 2005). Some couples especially want to receive HCT within their homes in order for them to ensure privacy.

A study that assessed the uptake of home-based HCT via a population-based survey in selected regions of Uganda revealed that 86% of participants received HIV test results and post-test counselling while 93% of these chose to receive both at home (Yoder *et al,* 2006). Similarly home-based HCT proved to be an effective way to reach family members as shown in the study conducted in four Ugandan villages where there was increased acceptance of testing from 10% to 6% after the implementation of home- based HCT (Wolff *et al*, 2005).

Findings from the study conducted in Uganda to understand factors influencing the uptake of HCT included; influence from sexual partner, consequences of a test result, awareness about HCT, cost of HCT, physical accessibility of HCT services, need for linking HCT to care and treatment and, the perceived quality of care of HCT services (Nuwaha, Kabatesi, Muganwa and Whalen, 2002). Some individuals tested for HIV in order to confirm their suspected HIV negative serostatus before committing to a relationship and some women were motivated to test by the sickness or death of either a child or a partner, as a means to confirm their HIV-positive

status, but did not describe HIV testing as a preventive health measure. (Maman *et al*, 2001). The difference in perception on how confidentiality is handled in some HCT facilities was found to be one of the underlying factors for HCT uptake (Fylkesnes and Siziya, 2004).

Findings from a facility based cross sectional study conducted at the outpatient department (OPD) in Addis Ababa showed that 98% of clients presenting with clinical signs that could possibly be due to HIV infection, accepted pre-test provider initiated counselling and testing, while 96% accepted post- test counselling. Among those who opted to be tested, 37.5% tested HIV positive (Girma & Enquiselassie, 2009). This means that individuals are likely to take an HIV test when they get sick or when they start suffering from opportunistic infections. Therefore, if HCT was routinely offered as a diagnostic intervention at the health facilities OPD, more individuals would undergo HCT. The participants in this study were influenced by the sickness thus there could have been some selection biases.

Some women fail to make their own decisions to go for HCT for fear of partner reaction, physical violence and cultural beliefs that demand that decisions are supposed to be made by a man, who is the head of the house. Those who sought HCT without permission from the partner would not disclose the test results to their partner (Maman, Mbwambo, Hogan, Kilonzo, Sweat and Weiss, 2001). The implication of this was that women who tested HIV positive were likely to infect their negative partners while the negative women were exposed to their infected partners. The above social issues could also limit access to care and treatment services among HIV positive women who be allowed to go to the health facility to seek medical attention by their partner.

The fear of stigmatization remains a barrier to HCT as well as lack of access to care and treatment as revealed by the study results from Limpompo in South Africa. Some of the determinants of AIDS related stigma included blaming of HIV infected persons, lack of HIV related knowledge and the life threatening character of the disease (Meiberg, Bos, Onya and Schaalma, 2008).

Some mineworkers were interviewed to establish attitudes that influence the uptake of HCT. The findings were; fear of testing HIV positive, stigma, discrimination, disease and fear of death. Participant's perception of how confidentiality is handled in health facilities and availability of antiretroviral therapy would influence the uptake of HCT (Day *et al*, 2003).

Long distances and delay in returning HIV test results, lack of access to free HCT, stigmatizing beliefs and fear of discrimination, are some of the barriers which hamper uptake of HCT in most

sub Saharan countries and most of all the reluctance of individuals to acknowledge that they are at risk (Matovu & Makumbi, 2007; Nakanjako *et al,* 2006; Kalichman & Simbayi 2003; Creek *et al,* 2007).

The 2009 urban profiling conducted for Livingstone city by UN HABITAT identified some barriers to the fight against HIV in Livingstone such as; the stigma associated with HIV/AIDS, limited access to care and prevention programmes; human resource constraints which affected scaling up of the HIV care services; the multi-faceted nature of the epidemic which brought about overwhelming fear of dying in the families and communities affected, gender inequality where women were more vulnerable than men because they could not make independent decisions to go for HCT due to cultural norms and the high cost of anti-retroviral drugs (UN-HABITAT, 2009). The above findings confirm the reason why there is high HIV prevalence in Livingstone. The cultural norms are pertinent barriers to HIV testing among males considering the fact that men are highly respected and cannot be challenged.

Sherr *et al,* (2007) concluded that in rural Zimbabwe, motivation for HCT uptake was driven by knowledge and education rather than sexual risk especially with individuals who tested HIV negative. Women who took an HIV test and were HIV positive had more knowledge about HIV and reduced the number of partners they had after the test compared to those who tested negative (Sherr *et al,* 2007).

A cross sectional study conducted in Ethiopia to find out factors affecting voluntary HIV counselling and testing among men revealed certain factors that influenced VCT utilisation. Results showed that 21.9% of urban men had the knowledge about places where VCT could be done compared to only 2.6% of rural men. The majority of men had heard about HIV and they knew how HIV infection can be prevented. Meanwhile, about 66% of urban and 73% rural reported risky sexual behaviours and of these only 26% urban compared to 3% rural men had ever tested for HIV. The study further revealed that reporting risky sexual behaviour, being married and high HIV /AIDS related knowledge were associated with VCT utilisation (Leta *et al,* 2012).

2.4 Value of CHCT as an entry point to HIV care and treatment

CHCT encourages a couple to disclose their test results to each other as they receive HIV test results together and therefore early identification of the HIV infection will enable them to make a joint decision to access early treatment and care services (WHO, 2004). An increase in uptake of interventions for prevention of mother to child transmission (PMTCT) among pregnant HIV

positive women was observed in a randomized trial conducted at antenatal clinics in Tanzania where almost 55% of women who completed CHCT were most likely to have taken Nevirapine during delivery compared to 20% who tested as individuals (Becker, Mlay and Schwandt, 2010). Whereas in Nairobi, women who came with their partners for CHCT and tested HIV positive were three times more likely to return for Nevirapine and to report administering of the drug to their infants at delivery, while positive women who received CHCT were five times more likely to avoid breast feeding compared to those who received individual HCT (Farquhar, Kiarie & Richardson, 2004). Participants who tested as couples and disclosed their status to each other were more likely to enrol in care programs compared to those who tested as individuals 84% versus 62% (John *et al,* 2008).

A home based care project in Uganda provided HCT and initiated ART to families within their homes. The study found that home based CHCT was well accepted by family members and couples were encouraged to receive the test results together so that they could make joint personalized risk reduction plans. About 99% of household members who had family members already on ART accepted home based CHCT and discordance in some couples was detected. For instance 43% of the spouses of the HIV positive individuals were HIV negative (Were *et al,* 2006).

2.5 Value of CHCT as HIV prevention activity

HIV testing of couples and appropriate counselling contributes to prevention as the outcome has been shown to be effective for changing sexual behaviour (NAC, 2010). CHCT is more effective than individual HCT as a prevention strategy considering the fact that most new infections are happening among couples in a steady relationship or cohabiting couples. This is shown by results from a study in Kinshasa where CHCT was effective in changing sexual behaviour in couples who increased condom use for all episodes of sexual encounter from 5% before CHCT to 70% after one month (Kamenga *et al*, 1991).

In the prospective cohort study conducted in Zaire, intensive post test counselling for discordant couples after testing resulted in low rates of HIV seroconversion of 3.1% per 100 person-years of observation, in married couples who voluntarily attended an HIV counselling center. Similarly, CHCT reduced the incidence of HIV among adult urban serodiscordant cohabiting couples from 20% to 7% per year in Lusaka and from 15% to 3% per year in Kigali (Kamenga *et al,* 1991, UNAIDS, 2001, Dunkle *et al,* 2008).

A study was conducted in Uganda where home based CHCT and HIV treatment was provided to families within homes. Findings where that individuals developed personal sexual behaviour

plans and there was a 70% reduction in risky sexual behaviour and an estimated 98% reduction in the number of sero-conversions after six months (Bunnell *et al,* 2006).

With only 3% of discordant couples reported using condoms before CHCT, a significant change was seen in the practicing of safer sex by study participants who after receiving CHCT reported an increase of more than 80% in condom use, while the frequency of sexual acts remained the same as before CHCT. This behaviour was maintained for at least a period of one year of follow up (Allen *et al,* 2003). However, the same study by Allen *et al* (2003) revealed that out of 66 concordant negative couples only 28% reported condom use during the same 1 year period of follow up.

The UNAIDS monthly update (2000) reports that available studies have not only revealed that CHTC contributes to behaviour change, but have also revealed that it is a cost effective intervention in preventing HIV transmission from positive partner to a negative partner and further enhances early access to medical care and prevention therapies to prevent mother to child transmission of HIV.

Early commencement of treatment of an HIV positive partner in discordant couples reduces chances of transmitting the virus to a negative partner (NAT, 2011). However, Kippax maintains that there is very little evidence to support claims that direct effect of treatment uptake on prevention is increased if individuals tested for HIV are counselled to act safely (Kippax 2006). The argument by Kippax can be challenged by a recent study called HPTN052 trial for heterosexual couples which was concluded early because of the conclusive result of 96% reduction of HIV transmission if the positive partner was on ART (NAT, 2011). The result is overwhelming and there is need for researchers and all the stakeholders involved in HIV prevention and treatment to take considerable efforts in implementing the new treatment guidelines which have been produced by WHO based on the study results. The statement issued by the Swiss experts on 'ART and HIV transmission' states that the reduction in transmission with ART is valid for as long as the person adheres to treatment, does not have a sexually transmitted infection and the viral load is suppressed below detection for a period of six months (NAT, 2011).

2.6 Value of CHCT in strengthening the relationship of the couple

Couples described testing together as a means to reaffirm one's commitment to the relationship as experienced by 66% of women who tested HIV negative and disclosed to their partners compared to 35% of those who tested HIV positive. This result show that men whose wives tested HIV negative had no condemnation of the wife's decision to test, instead this brought

them together. However, only 5% of women who disclosed reported different types of violence ranging from blame to physical abuse and being told to leave the matrimonial house or being abandoned (Maman *et al*, 2001). The study revealed a couple who tested together and used this strategy to understand reproductive health problems such as failure to conceive, while other men wanted to test with their partners in order to search for the cure of their health problems (Maman *et al*, 2001).

Couple HCT creates an enabling environment for couples to discuss concerns about risks arising from mutual disclosure as they are in the presence of a counsellor who is neutral in the session. Almost 52% of the women who got tested increased condom use with their husbands thereby decreasing transmission of HIV in discordant partners and decreasing re-infection in concordant positive couples (Denison, O'Reilly, Schmid, Kennedy, & Sweat, 2008).

The delivery of HIV messages enhances a shared understanding among the couples and the presence of a third party (the counsellor) improves communication, eases the tension and diffuses blame, which has sometimes led to gender based violence (Wandera *et al,* 2008). Disclosure of HIV status is easy as both partners are present during testing and receiving of results, making it conducive for the couple to be in a position to plan together (WHO, 2004). On the one hand, HIV status disclosure to sexual partners in many studies was reported to be associated with positive outcomes including increased social support, acceptance, decreased anxiety and depression, and strengthening of relationships, but on the other hand disclosure has been reported to bring about violence, depression, stigma, divorce and rejection especially when the results are HIV positive. Some studies in sub Saharan Africa revealed at least 3.5% to 14.6% women reported violence after disclosure (WHO, 2004). Most of these studies do not address why men inflict violence on their partners after disclosure, but have instead concentrated on asking women to explain why they fail to disclose.

2.7 Factors affecting uptake of CHCT (promoters and barriers)

Findings in a randomised trial conducted in Tanzania showed that out of 760 antenatal women enrolled in the individual HCT arm, 71% completed testing and received their HIV test results, while only 39% of the 716 antenatal women in the CHCT arm completed testing and received their HIV test results, but of these, only 16% completed HCT with their partners, while 23% switched to the individual HCT arm. The women who were randomised to the CHCT arm but did not come with their husbands to receive CHCT, or if they came as a couple but one partner did not consent, or if the partner refused to receive the results as a couple, then they were switched to the individual HCT arm. There were high levels of loss to follow-up among women who received CHCT (51%) among antenatal women and it was also found that women, who

were young, non-Muslim and did not experience violence, were the ones who completed CHCT. The probability could be that there may have been an association between CHCT uptake and having experienced violence considering the rate of drop out (61% no CHCT) among married women and the number that opted to switch to individual HCT (Becker *et al,* 2010).

An intervention by the Rwanda Zambia Research Group (RZHRG) conducted in 2007 to promote couples voluntary counselling and testing used trained Influence Network Agents (INA) to recruit couples through invitations for VCT in Lusaka and Rwanda. The INAs are identified influential individuals from the community. They received training by researchers on promotion of CHCT and recruitment of couples for the study through the door to door approach. The use of INA was meant to increase community awareness and increase uptake, however, the approach had its own weaknesses, because only a few selected couples were visited and especially those personally known by INAs (selection bias) were invited for HIV testing, leaving out the larger community. The results did not show an increase in the uptake for couple counselling and testing. For instance, in Zambia only 9.6% of the invited couples came for testing (Allen *et al,* 2007).

A multimedia campaign to create demand for couple testing in Kenya did not have an immediate impact of increasing CHCT uptake. The uptake of CHCT before the campaign was launched in January 2003 was 12.2%, and after the campaign, three months later, the uptake remained at 12% (Marum, Odoyo, Furnivall, Kamau &Nganga, 2004). However, the researchers did not compare CHCT uptake and individual HCT uptake during the same period to establish if there was any significant increase in individual HCT uptake caused by the campaign.

A CHCT promotion 'Get Real Campaign' done to encourage couples testing in Zimbabwe showed an increase in the uptake (from 13% in 2005 to 16.1% in 2006, and from 16.1% in 2006 to 18.6% in 2007) and a significant increase in uptake for those exposed to media campaigns compared to those with no exposure (28% versus 14%) (Dhlamini, Hatzold, Taruberekera & Chatora, 2008). However, the researcher did not explain whether uptake was different among people in urban or rural areas. It also did not say what the levels of education were among those who accepted versus those who did not. In Malawi drama performances were used as a way of creating awareness and promoting HIV testing in the rural areas and the approach improved people's attitude towards HCT (Rumsey et al, 2004). In certain circumstances couples got tested as a prerequisite before getting married in church. The study results implied that the participants had perceived vulnerability to HIV infection, though there were marked differences in what motivated them to undergo an HIV test. (Maman *et al,* 2001).

Misconceptions and lack of adequate information about discordance could be barriers to uptake of CHCT. For example, neither counsellors nor clients in a study conducted in Uganda were able to give an adequate explanation about why discordance existed (Bunnell et al, 2005).

Breach of confidentiality by health service providers, lack of knowledge about the benefits of CHCT and lack of familiarity about CHCT; have been cited as some of the barriers to accessing CHCT by some couples (Kelley et al, 2011). Cultural and religious beliefs could hinder couples testing together. For example, beliefs that men are self reliant and are more knowledgeable than women, makes it difficult for them to seek health services with their wives (Tshabalala, Raletsemo, Peacock, &Levack, 2007). Women might not have sufficient negotiating skills and might not be assertive enough to ask a man to go with her for CHCT (Anecdotal report).

2.8 Factors affecting male uptake of CHCT (promoters and barriers)

The lack of male involvement in HIV prevention activities is a barrier to female participation in HIV prevention programs. For example, a study in Malawi focused on intensive community education targeting male dominated places to find out if this strategy could improve the uptake of HCT and CHCT, but there was still low numbers of couples testing. Reported barriers included lack of perceived benefits when healthy, inability to communicate with partners, fear of stigmatization and loss of hope among the ill who could not afford ART and felt that counselling and care alone without ART were not adequate incentives for HIV testing (Masingi *et al,* 2004).

Some of the promoters to CHCT included higher literacy and knowledge levels among men who understood that HIV testing was a preventive health measure. Some men suspected of infidelity described couple HIV testing as a way to regain a partner's trust (Maman *et al,* 2001).

A study in Ghana found that the major barriers to use of HCT among men included: a low risk perception whereby some men believed that if their partner tested HIV negative, they were also HIV negative; denial about the risk of contracting HIV among men who had only one sexual partner; the fear or receiving an HIV positive result; and the fear by non regular users of condoms to go for HCT (Fiaveh, Okyerefo and Fayorsey, 2011**)**.

A study conducted in Uganda's Bukonzo West health sub-district, to determine the prevalence and factors associated with CHCT use among men, found some socio- cultural norms, such as referring to men who went to the health facility with their wives as a strange behaviour, because, the practice was not culturally common and inhibited CHCT. Some men believed that there was no way discordant HIV results could exist if ones sexual partner was HIV negative. The issues of stigma and lack of confidentiality were major barriers for men to access HCT (Bwambale et al,

2008). In the same study by Bwambale et al (2008), some men did not want to disclose their HIV status to their partners for fear of subsequent sexual denial by their wives.

The study by Nyondo, Chimwaza & Muula, (2014), found other cultural/gender factors that may influence the male uptake of CHCT which included cultural norms whereby men are considered as head of the household therefore they command respect and are decision makers in the family which made them shun PMTCT services as it was seen as undermining men's masculinity. Some men believed that child bearing or maternity issues were women's responsibility and did not concern men.

Men perceived their marriages as unstable and distrustful, thus, they did not accept CHCT as they feared that CHCT could give rise to conflicts in their marriages. The other reasons for low CHCT uptake were; perceived stigmatizing nature of HIV care, perceived rude health worker attitude, and the lack of understanding about why they should be tested for HIV when they did not have any symptoms (Larson *et al*, 2010).

Despite the use of PMTCT-plus programs as an entry point to ART for both parents and the child in antenatal clinics in Botswana and Zambia, there were insufficient numbers of men participating in the programs (Nyblade & Field, 2001). The PMTCT –plus program is implemented in some health facilities in antenatal whereby women who test HIV positive are asked to come with their spouses to the clinic and are both commenced of ART, whereas, in PMTCT its only the woman who is given ART

2.9 Possible harmful consequences of CHCT

Adverse reactions and behaviours by couples post testing have been reported in some studies conducted on couples HIV counselling and testing. A study done in Zambia to explore couple experiences of couple HIV testing and counselling specifically focusing on the impact on treatment uptake, social support and adoption of risk – reduction behaviour revealed strained marital relationships such as cessation of sex, mental abuse (ill treating of the wife in the case of a discordant couple where a wife was HIV positive) and abandonment. Some men and women who tested concordant positive abandoned their spouses after learning about their HIV status due to blaming attitudes (Musheke, Bond &Merten, 2013).

In the study by Tabana *et al*, (2013), findings were that discordant couples where a woman was HIV negative had difficulties in maintaining a negative status in a male dominant relationship compared to concordant couples. When women refused to engage in sexual activities, men mentioned finding other sexual partners to satisfy their desires. In another study conducted at

antenatal clinic in Zambia findings though not statistically significant, revealed that some women who tested as a couple reported verbal abuse and physical violence from their partners (Semrau *et al*, 2005).

2.10 Potential Perceived benefits of CHCT compared to HCT

There are a number of perceived benefits of CHCT compared to HCT which have been revealed by different studies. Informants in the study by Maman et al (2001) revealed that CHCT addresses some weaknesses of HCT such as low rates of serostatus disclosure to partners and partner violence, especially for women. Informants also revealed that CHCT is a preventive health measure and a way to regain a partner's trust (Maman *et al*, 2001); it allows early access to treatment for the positive partner in a discordant couple and in concordant positive couples both are likely to agree to take ART and to support each other in adhering to treatment. The male partner in a couple that has undergone CHCT would support and encourage the pregnant partner to access services to prevent mother to child transmission of HIV (Becker, Mlay and Schwandt, 2010). CHCT is more likely than individual HCT to translate into increased and consistent condom use, and increased opportunity to discuss risk reduction with the partner (WHO, 2004). It prevents stigmatization and blame by a partner as it allows a couple to receive the results together and they have a chance to share their concerns, as well as expressing their emotions together in a supportive environment (Bandezi, Bruyn, McIntyre and Gray, 2006).

AIM

To assess the factors determining the uptake of CHCT amongst males in a long term heterosexual relationship, who attend a health facility for HIV counselling and testing in Livingstone, Zambia and their perceived benefits of CHCT.

OBJECTIVES

1. To assess the psychological, social, cultural, knowledge, class, health services and religious barriers and promoters of CHCT amongst male adults in a long term heterosexual relationship, who attend a health facility for HIV counselling and testing in Livingstone.
2. To compare the perceived benefits of CHCT with the perceived benefits of HCT amongst adult men in a long term heterosexual relationship.

CHAPTER 3 METHODOLOGY

This chapter includes the following sections: the study design, study population, sampling, data collection, data processing, data analysis, validity, reliability, generalisability, ethics and limitations of the study.

3.1 Study Design

A case control study design comparing males in a long term heterosexual relationship who came together with their partners as a couple for CHCT and jointly tested for HIV, with males in a long term heterosexual relationship who came for HCT alone was conducted. This was an unmatched case control study. The researcher however, made sure that the two groups were of similar key characteristics such as eligibility age, sex and marital status. The researcher chose to conduct a case control study design because it consumed less time and fewer resources were required. This design was appropriate to answer the question as to why men who are in a relationship are or are not testing as couples in Livingstone, and it further explored the relationship between CHCT and various factors.

3.2 Study population

The study population comprised of men 21 years old and above living in Livingstone, who were married or cohabiting or had been in a steady heterosexual relationship for a period of six months and more, and who voluntarily came to be counselled and tested for HIV between August and September, 2013. The cases were men who came to be tested with their partners while controls were men who came to be tested as an individual. Men with homosexual partners or in a polygamous relationship were excluded from the study, while individuals referred by health workers for testing due to illness were also excluded on the basis that these were patients who had not voluntarily come for HCT. Couples where a man was invited to go for HTC because of a pregnant wife were again excluded because they did not come to the facility voluntarily.

3.3 Sample size

The calculation of the sample size was done for unmatched case-control with 95% confidence interval and 80% power, ratio of 1:1 cases and controls. The larger sample was recruited from the public facilities (Maramba, Dambwa and Boma health centres) while the private facility (Newstart centre) had a small sample because the public facilities received a higher volume of clients compared to the private facility. Public facilities receive an average of 8000 individuals per month (HMIS Livingstone DHO, 2011) while the private facility received an average of 1,344 clients per month (MIS SFH, 2011). Proportionate sampling was applied using the total

number of people visiting the facilities (9,344) as the denominator and this translated to 86% from public and 14% from private.

3.4 Sampling

Time delimited sampling was used to recruit participants. Men aged 21 years old and above, visiting the health facility for counselling and testing and meeting the eligibility criteria were recruited into the study after their consent. Participants were recruited from three busy public clinics and from one busy private facility. The public facilities have a counselling department within the health center grounds while the private facility is a standalone counselling centre providing HCT services. The public facilities represented a lower socio-economic class (CSO, 2010), while the private facility represented the middle and higher socio-economic class in Livingstone. All the facilities are accredited centres for CT and registered with the Zambia Voluntary Counselling Testing Services (ZVCTS), which controls and inspects all counselling sites.

The registry clerks at the facilities were responsible for identifying clients who met the eligibility criteria (age and marital status) during registration. If the man was either married or cohabiting, the clerk informed the research assistant that the client was eligible, and then the research assistant approached the clients, informed them about the study and asked if they would participate in the study. There were 5 research assistants engaged, each one allocated a target of 60 participants (60 questionnaires) and they administered a total of 30 questionnaires to cases and 30 to controls. For each man in a couple who tested jointly (case), one male individual who came alone (control) and met the criteria was supposed to be recruited, however considering that the flow of male clients especially the cases at the out-patients departments at public facilities was erratic, research assistants had to recruit more controls in a day but they ensured that they skipped some controls by time spacing of between 30 minutes to 1 hour so that they could get a case. Research assistants also considered the period between administration of the questionnaires and the recruitment of the next participant, so the registry clerks were guided by availability of the research assistant for them to send the next participant (25-35minutes). Data collection was only done in the mornings because in the afternoon most facilities did not have clients at the counselling and testing departments. Three research assistants operated from public facilities while two operated from the private facility.

3.5 Data Collection

The data collection tool was developed by the researcher with guidance from the supervisor. The questionnaires consisted of both closed ended questions with mainly binary or likertscale

responses. The same set of first questions were administered to both groups and consisted of questions on social demographics; knowledge, attitude and behaviour about HIV; barriers to CHCT (psychological, social, cultural, health services and religious), factors promoting uptake of CHCT (psychological, social, cultural, health services and religious) as well as perceived benefits of both CHCT and HCT. Each group also had another specific set of questions which were unique to them as either cases or controls. This was required because there were specific questions which were applicable to a specific group and could not apply to the other. The questionnaire was developed in English, Lozi and Nyanja as these are the most commonly spoken languages in Livingstone (Appendix). With consent from the participants the questionnaires were administered as they were waiting for their HIV test results in the waiting room. Participants were taken to a private room where a questionnaire was administered by a trained male research assistant. The participant's information sheet was read out to the participant and a signed consent was obtained before starting the interview. The two questionnaires for each individual were labelled with a similar number to make sure that they belonged to one person. A minimum of 4 participants were interviewed per day by each research assistant from Monday to Friday.

3.6 Validity

Validity refers to the degree to which a test accurately measures what it is intended to measure. The questionnaire was developed based on relevant literature and was pre-tested in a pilot study to measure its ability to gather the correct information that the researcher intends to collect for use in the main study, as described by Vaughan and Marrow (1989). Twenty questionnaires were administered to 10 participants who were not part of the study participants. Some questions were rephrased after it was found that they were not clear and were eliciting unclear responses.

3.7 Reliability

Reliability is the same as repeatability, meaning that the same result should be obtained if the measurement was repeated. For instance if other people measured using the same method, the same results should be found if it is repeated soon afterwards. In the pilot the questionnaire was tested on 10 participants who were interviewed by two research assistants. The research assistants administered the same questionnaire to the same person but via different interviews at different times on the same day. Results were that 85% of the participants were consistent with their responses while 15% gave slightly different responses to a few questions for instance, 3% said that they were not at risk in the first interview but had to change in the second interview, 2% said they knew where to access VCT in the first interview but changed in the second interview

an 2% said the CVT services were poor in the first interview but said they services were very good in the second interview. Questions to which there were less than 2 inconsistent responses were maintained while those with more than two were revised.

3.8 Generalisability

The findings in this study can be applied or generalized to married/cohabiting males with similar cultural, religious, social and economic characteristics in towns in Zambia.

3.9 Data processing and Analysis

The completed questionnaires were checked for missing data using frequencies and cleaned for inconsistencies and missing values. It was then coded and entered into SPSS version 16.0 computer statistical software. Univariate descriptive analysis was used to analyse each single variable on its own for responses from both cases and controls and reported as frequencies in tables and graphs. The odds ratio was calculated to find the relationship between independent variables (age, residence, marital status, employment status, educational level, religion, knowledge, attitude and behaviour about HCT, social, cultural and religious beliefs) and the dependent variable of CHCT uptake. The chi-squared statistical test was used to determine 95% confidence intervals for the above associations. Bivariate analyses were conducted to compare the relationship between the uptake of CHCT/ HCT and variables such as education, marital status, occupation as well as perceived barriers/benefits to CHCT such as psychological, social, cultural, knowledge, class, health services and religious issues. Finally a multivariate logistic regression analysis was performed using marital status as a covariate to evaluate the relationship between perceived barriers and perceived benefits of CHCT and HCT. *P value* of less than 0.05 was regarded as statistically significant.

3.10 Ethical consideration

Ethical approval was sought from Excellence in Research Ethics Science (ERES) Converge, Institution Review Board (IRB) in Zambia and from the UWC research committee. Permission to conduct the study from the Ministry of health was obtained. Permission was also sought from the District Health Office (DHO) of Livingstone under which all the private and public health services providers in Livingstone operate to conduct the study from the facilities. Consent was further sought from the participants who voluntarily participated, after the details of the study were explained to them. The researcher assured the participants of full confidentiality and made sure that there was no interference with the health services the respondents came for. The decision not to participate was respected and did not in any way affect them receiving the services they came for at the health facility. The interviews were conducted by trained male

research assistants who are aware about the values, beliefs and culture for the communities of Livingstone. Information given by the respondents was treated as strictly confidential and kept under lock and key. The results of this study would be of value to those providing CHCT services and might even assist to improve the provision of those services and hence the findings of this study will be made available to them.

CHAPTER 4 RESULTS

This section describes and compares results from two groups: cases (n=147 who came to test as a couple) and controls (n=147 who came to test as individuals). Responses from questionnaires were analysed using univariate analysis, and two by two tables were used to assess the unadjusted odds ratios using SPSS 18 Statistical Software Package. Chi-square tests were conducted to determine the 95% confidence intervals for the odds ratios. The odds ratio was used to measure the relationship between the different variables as either barriers or promoters of the uptake of CHCT. Multivariate analysis using multiple logistic regression was conducted by selecting variables which have $P<0.05$ in the bivariate analysis to obtain the adjusted odds ratios.

4.1 Sample realization

All cases and controls, who were eligible and were eventually recruited, came from the population of Livingstone district. Data was supposed to be collected from 300 participants (150 cases and 150 controls) however, the actual proportions realised from the public facilities were 203 (n=100 cases, 103 controls) and from the private sector, the actual sample realised was 91 (n=47 cases, n=44 controls) bringing the total sample realised to 294 (98%) after the data cleaning process. Instead of interviewing the initially proposed 86% from the public sector, the percentage reduced to 69% while 31% was realised instead of 14% from the private facility. This was because most public sector facility staff were involved in the preparations for the world tourism day commemorations that took place during the data collection month whereby a number of programs including health services were disturbed. A total of 4 questionnaires were excluded from the study. These were for 2 potential cases and 2 potential controls which did not meet the selection criteria. The 2 controls did not meet the age entry requirement of being 21 years and above (were less than 21 years old) and 2 individuals from the cases had been in a relationship for less than six months.

4.2 Univariate Analysis

Description of all the variables was done using univariate analysis with analysis of such variables as demographic characteristics, attitudes, behaviours, knowledge as well as cultural and social beliefs, via frequencies or mean and median with the relevant measures of dispersion.

4.3 Demographics characteristics of the study sample

Table 1 describes the demographic characteristics of the cases and the controls in the study. The cases and controls had very similar demographic characteristics except that the cases were more likely to be married and more likely to be informally employed (**Table 1**).

Table 1: Socio-demographic characteristics of cases and controls shown as frequencies

Characteristic	Cases Freq	Controls Freq	Total
Marital status	**n=147**	**n=147**	**n=294**
Married	111 (75.5%)	99 (67%)	210 (71%)
Cohabiting	32 (21.8%)	33 (22%)	65 (22%)
Stable sexual relationship but living apart	4 (2.7%)	15 (10.2%)	19 (6%)
Duration of Relationship	**n=147**	**n=147**	**n=294**
0.6 - 4 years	47 (32%)	48 (32.7%)	95 (32%)
5 - 9 years	55 (37.4%)	56 (38.1%)	111 (38%)
10 years and above	45 (30.6%)	43 (29.3%)	88 (30%)
Education Level	**n=147**	**n=147**	**n=294**
Never been to school	1 (0.7%)	4 (2.7%)	5 (2%)
Primary education	19 (13%)	14 (9.5%)	33 (11%)
Secondary education	88 (59.6%)	98 (66.7%)	186 (63%)
University education	39 (26.7%)	31 (21.1%)	70(24%)
Mean age	32.5	31.1	**32.02**
Age range	**n =147**	**n = 147**	**n = 294**
21-30 years	60 (41%)	65 (44%)	125 (43%)
31-35 years	46 (31.3%)	42 (28.6%)	88 (30%)
36-40 years	29 (19.7%)	29 (19.7%)	58 (20%)
41-45 years	10 (6.8%)	9 (6.1%)	19 (6%)
46-50 years	1 (0.7%)	2 (1.4%)	3(1.0%)
51-55 years	1 (0.7%)	0 (0%)	1 (0.3%)
Place where lived longer	**n = 147**	**n=147**	**n=294**
Urban	115 (78.2%)	115 (78.2%)	230 (78%)
Rural	32 (21.8%)	32 (21.8%)	64(22%)
Duration of residence			
1-5 years	40 (27.2%)	30 (20.3%)	70 (24%)
6-10 years	31 (21.1%)	29 (19.7%)	60 (20%)
11 years and above	76 (51.7%)	88 (59.9%)	164 (56%)

Characteristic	Cases Freq	Controls Freq	Total (n=147)
Religion			
Catholic	56 (38.1%)	48 (32.7%)	104 (35.3%)
Jehovah's witness	8 (5.4%)	4 (2.7%)	12(4%)

Pentecostal	28 (19.0%)	32 (21.8%)	60(20.4%)
Protestants	3 (2.0%)	3 (2.0%)	6 (2%)
Reformed church	9 (6.1%)	7 (4.8%)	16 (5.4%)
Seventh day Adventist	24 (16.3%)	25 (17.0%)	49 (16.6%)
Muslim	2 (1.4%)	3 (2.0%)	5 (1.7%)
None	2 (1.4%)	2 (1.4%)	4 (1.36%)
UCZ	8 (5.4%)	18 (12.2%)	26 (9.5%)
New apostolic church	6 (4.1%)	4 (2.7%)	10 (3.4%)
Anglican	1 (0.7%)	1 (0.7%)	2 (0.68%)
Occupation	**n=147**	**n=147**	**n=294**
Formal employment	57 (38.8%)	72 (49%)	129(43.8%)
Informal Employment	87 (59.2%)	68 (46.3%)	155(52.7%)
Student	3 (2%)	7(4.8%)	10(3.41%)

4.4 Attitude, practice and behaviour towards individual HCT/CHCT and perceived barriers to CHCT

The perceived barriers to uptake of both CHCT and HCT which included variables such as knowledge, attitude and practices towards individual and CHCT are displayed in table 2. Most respondents in both groups knew how HIV is transmitted and how one can prevent getting infected. The misconception that one could get infected with HIV through witchcraft or super-natural powers was stronger among the cases than amongst the controls. Knowledge in this study was defined as: knowing the facts of HIV with common modes of transmission such as: through unprotected sex with an infected person, transmission from infected mother to child and contact with infected blood. Cases were more likely to talk about sexual issues and HIV as a couple compared to the controls and also perceived themselves and their partners as being at lower risk of getting HIV infection (**Table 2**).

Table 2: Attitude, practice and behaviour towards individual HCT/CHCT and perceived barriers to CHCT

Variable	Cases	Controls	Total
Knew how one can get HIV	**n=147**	**n=147**	**n=294**
Yes	144 (98%)	143 (97.3%)	287 (98%)
No	3 (2%)	4 (2.7%)	7 (2%)
Knew how a person could get infected with HIV?	**n/N**	**n/N**	**n/N**
Infected Mother to child	142/145 (98%)	141 /145 (97%)	283 /290 (98%)
Contact with infected blood	132/145 (91%)	136/145 (94%)	268/290 (92%)
Eating food with an HIV infected person	6/145 (4%)	3 /145 (2%)	9/290 (3%)
Unprotected sex with infected person	138/145 (95%	141 /145 (97%)	279/290 (96%)
Witchcraft or supernatural powers	16/145 (11%)	3/ 145 (2%)	19/290 (7%)
Knew how one can prevent HIV infection?	**n/N**	**n/N**	**n/N**
Abstaining from Sex	141/145 (97%)	138 /145 (95%)	279/290 (96%)
Sex with just one partner	138/145 (95%)	129 /145 (89%)	267/290 (92%)
Using condoms every time	143/145 (99%)	141/145 (97%)	284/290 (98%)
Getting tested & safer sex (condom use)	131/145 (90%)	120/145 (83%)	251/290 (87%)
Getting circumcised	92/145 (63%)	93/145 (64%)	185/290 (64%)
Talk about sexual issues as a couple	**n=147**	**n=147**	**n=294**
Yes	135 (91.8%)	98 (66.7%)	233 (79%)
No	12 (8.2%)	49 (33.3%)	61 (21%)
Talk about HIV as a couple	**n=147**	**n=147**	**n=294**
Yes	132 (89.8%)	74 (50.3%)	203 (70%)
No	15 (10.2%)	73 (49.7%)	88 (30%)
Partner ever tested for HIV before	**n=146**	**n=146**	**n=292**
Yes	127 (87%)	40 (27%)	167 (57%)
No	19 (13. %)	106 (73%)	125 (43%)
Know partner's HIV status	**n=127**	**n=39**	**n=166**
Yes	126 (99.2%)	34 (87.2%)	160 (96%)
No	1 (0.8%)	5 (12.8%)	6 (4%)
Think partner is at risk	**n=147**	**n=147**	**n=294**
Yes	34 (23.1%)	76 (51.7%)	110 (37%)
No	113 (76.9%)	71 (48.3%)	184(63%)
Why think partner is at risk of HIV infection	**n/N**	**n/N**	**n/N**
Past relationships	23/34 (68%)	38/77 (49%)	61/111(55%)
Multiple partners	11/34 (32%)	46/77 (60%)	57/111 (51%)
prolonged illness	19/34 (56%)	31/77 (40%)	50/111 (45%)
Unmarried	4/34 (12%)	10/77 (13%)	14/111 (13%)
Why think partner is NOT at risk of HIV infection	**n/N**	**n/N**	**n/N**
We tested HIV negative	105/113 (93%)	33/72 (46%)	138/185 (75%)
We trust each other	105/113 (93%)	58/72 (81%)	163/185 (88%)
We practice safer sex	64/113 (57%)	32/72 (44%)	96/185 (52%)
We practice one partner policy	83/113 (73%)	43/72 (60%)	126/185 (68%)
We are abstaining	8/113 (7%)	22/65 (34%)	30/185 (16%)

Variable	Cases	Controls	Total
Think themselves at risk of HIV infection?	**n=147**	**n=146**	**n=293**
Yes	34 (23.1%)	74 (50.3%)	108 (37%)
No	113 (76.9%)	72 (49%)	185 (63%)
Why think themselves at risk of HIV infection?	**n/N**	**n/N**	**n/N**
Had past relationships	16/34 (47%)	31/74 (42%)	47/108 (44%)
More than one sexual partner	11/34 (32%)	33/74 (45%)	44/108 (41%)
Had unprotected sex	7/34 (21%)	13/74 (18%)	20/108 (19%)
No trust for partner	2/34 (6%)	27/74 (36%)	29/108 (27%)
Both into illicit beer drinking	3/34 (9%)	0/74 (0%)	3/108 (3%)
Not tested for HIV	12/34 (35%)	46/74 (62%)	58/108 (54%)
Partner suffering/suffered from TB	7/34 (21%)	11/74 (15%)	18/108 (17%)
Believes that when there is trust in a relationship one is safe from HIV?	**n=147**	**n=146**	**n=293**
Yes	129 (87.7%)	127 (86.9%)	256 (87.3%)
No	18(12.3%)	19(13.1%)	37 (12.7%)
Personally knows of a couple who are both HIV positive?	**n=147**	**n=146**	**n=293**
Yes	62 (42.2%)	68 (46.3%)	130 (44.4%)
No	85 (57.8%)	78 (53.1%)	163 (55.6%)
Knew of anyone who has a partner that is HIV positive?	**n=147**	**n=147**	**n=294**
Yes	42 (28.6%)	57 (38.8%)	99 (33.7%)
No	105 (71.4%)	90 (61.2%)	195 (66.3%)
Self rating for risks for HIV infection	**n=147**	**n=147**	**n=294**
No risk	86 (58.5%)	47 (32%)	133 (45.2%)
Low	30 (20.4%)	22 (15%)	52 (17.7%)
Moderate	12 (8.2%)	20 (13.6%)	32 (10.9%)
High	19 (12.9%)	58 (39.5%)	77 (26.2%)

4.5 Factors influencing choice of CHCT services

Participants' perception on the quality of HCT services in Livingstone and their reasons for choosing the various types of services is shown in table 3. Both the cases and the controls had excellent knowledge about places where one can access both individual and couple HIV counselling and testing services while more cases had tested for HIV before compared to the controls with most cases having tested as a couple. About 99% of participants from both the cases and controls felt certain that staff would keep their HIV test results confidential. Almost all of the cases responded positively regarding the usefulness of testing as a couple while 74% of controls thought that couple counselling and testing was useful/beneficial (**Table 3**).

Table 3: Factors influencing choice and uptake of CHCT and HCT services

Variable	Cases	Controls	Total
Know places where one can access CHCT	**n=147**	**n=147**	**n=294**
Yes	145 (98.6%)	141 (95.1%)	286 (97.3%)
No	2 (1.4%)	6 (4.9%)	8 (2.7%)
Named places where people can access CHCT	**n/N**	**n/N**	**n/N**
At the private facilities	138/145 (95%)	137/142 (96%)	275/287 (96%)
Mobile testing community	138/145 (95%)	137/142 (96%)	275/287 (96%)
In the district clinics	143/145 (99%)	138/142 (97%)	281/287 (98%)
At the district hospital	134/145 (92%)	127/142 (89%)	261/287 (91%)
Have ever tested for HIV before	**n=147**	**n=147**	**n=294**
Yes	117 (79.6%)	75 (51%)	192 (65.3%)
No	30 (20.4%)	72 (49%)	102(34.7%)
Manner of previous HIV test	**n=117**	**n=75**	**n=192**
As a couple	84 (71.8%)	33 (44%)	117 (61%)
Alone	33 (28.2 %)	42 (56 %)	75 (39%)
Informed partner about HIV status	**n=33**	**n=39**	**n=72**
Yes	29 (87.9%)	26 (66.7%)	55 (76.3%)
No	4 (12.1%)	13 (33.3%)	17(23.6%)
Reasons for not sharing results with partner	**n/N**	**n/N**	**n/N**
Do not want her to know my status	4 /4 (100%	6 /13 (46%)	10/17 (59%)
Fear that she can tell other people	4 /4 (100%	2 /13 (15%)	10/17 (59%)
Do not know her status	3 /4 (75%)	8 /13 (62%)	11/17 (65%)
Do not freely talk about HIV testing	1 /4 (25%)	6 /13 (46%)	7/17 (41%)
Rating of testing services at the facility where previously had an HIV test from	**n=147**	**n=147**	**n=294**
Excellent	73 (49.7%)	45 (30.6%)	118(40.1%)
Very good	56 (38.1%)	76 (51.7%)	132 (44.9%)
Good	15 (10.2%)	19 (12.9%)	34(11.6%
Poor	3 (2%)	7 (4.8%)	10(3.4%)
Reasons for choosing this facility for HCT	**n/N**	**n/N**	**n/N**
Because I am not known	12/147 (8%)	23/147 (16%)	35/294 (12%)
Heard from the radio about the services	40/147 (27%)	40/147 (27%)	80/294 (27%)
Confidentiality	133/147 (90%)	127/147 (86%)	260/294 (88%)
It is near home	119/147 (81%)	122/147 (83%)	241/294 (82%)
They offer good services	132 /147 (90%	117/147 (80%)	249/294 (85%)
Believe staff will keep test results confidential	**n=147**	**n=147**	**n=294**
Yes	145 (98.6%)	145 (98.6%)	290 (98.6%)
No	2 (1.4%)	2 (1.4%)	4(1.4%)
Think couple counselling and testing is beneficial/ useful	**n=147**	**n=147**	**n=294**
Yes	145(98.6%)	108 (73.5%)	253(86%)
No	2 (1.4%)	39(26.5%)	41 (14%)
Reasons why think couple Counselling & Testing services is useful	**n/N**	**n/N**	**n/N**
Live with a free mind after testing together	139/145 (96%)	95/108 (88%)	234/253 (92%)
Promotes trust	137 /145 (94%)	96 /108 (89%)	233 /253 (92%)
Know each other's results together	135 /145 (93%)	96/108 (89%)	231/253 (91%)
Learn together how to protect each other	130/145 (90%)	91 /108 (84%)	221/253 (87%)
Know how to live positively	108/145 (74%)	81/108 (75%)	189/253 (78%)
Learn how to protect an unborn child	109 /145 (75%)	74 /108 (69%)	183/253 (72%)
Reasons why it is <u>not</u> useful to test as a couple.	**n/N**	**n/N**	**n/N**
It can lead to divorce if one is found HIV positive	1 /2 (50%)	39/39 (100%)	40/41 (97.5%)
Can bring accusations in a relationship	1 /2 (50%)	35/39(90%)	35/41(85.3%)
Partner may not be comfortable testing together	1 /2 (50%)	34/39 (87%)	35/41(85.3%)

Know of negative things about couple counselling and testing	**n=147**	**n=144**	**n=291**
Yes	126 (85.7%)	119 (82.6%)	245(84%)
No	21 (14.3%)	25 (17.4%)	46(15%)
Perceived negative things about couple counselling and testing	**n/N**	**n/N**	**n/N**
Creates suspicion if couple tests HIV positive	116/124	114/122	230/246 (93%)
Can lead to divorce or separation	123/124	119/122	142/246 (97%)
Do not want to be seen together with partner	57/124	69/122	126/246 (51%)
Believes there are Positive things about couple counselling and testing	**n=147**	**n=147**	**n=294**
Yes	143 (97.3%)	119 (81%)	262 (89%)
No	4 (2.7%)	28 (19%)	32 (11%)
Perceived positive things about couple counselling and testing	**n/N**	**n/N**	**n/N**
Couple learn about their status together	135 /144 (94%)	119 /121 (98%)	254/265 (96%)
Promotes trust among couples	134 /144 (93%)	114 /121 (94%)	248/265 (94%)
You can enjoy sex with a free mind	133/144 (92%)	111/121 (92%)	244/265 (92%)
Couple knows how to protect themselves	133/144 (92%)	112 /121 (93%)	245/265 (92%)
Promotes love	125/144 (87%)	105/121 (87%)	230/265 (87%)
Perceived cultural factors or local beliefs that would encourage the uptake of couple CHCT for men & women.	**n/N**	**n/N**	**n/N**
Male circumcision	106/ 145 (73%)	117/146 (80%)	223/291(77%)
Man is influential and can convince partner	109/145 (75%)	96/ 146 (66%)	115/291 (40%)
Perceived cultural factors or local beliefs that would prevent the uptake of couple counselling and testing	**n/N**	**n/N**	**n/N**
All decisions are made by a man	106/145 (73%)	112/146 (77%)	218/291 (75%)
Polygamy	82/ 145 (57%)	86/146 (59%)	168/291 (58%)
Sexual cleansing	92/ 145 (63%)	91/146 (62%)	183/291 (63%)
Religion support couple HIV counselling and testing?	**n=147**	**n=146**	**n=293**
Yes	141 (95.9%)	145 (99.3%)	286 (97.6%)
No	6 (4.1%)	1 (0.7%)	7 (2.4%)

Bivariate Relationships

Bivariate analyses were conducted to determine the association between independent and dependent variables. The dependent variable was the uptake of CHCT and independent variables included socio- demographics such as age, education, marital status, duration of the relationship, the level of education, occupation, religious grouping and duration of residence (Table 4).The association of most socio- demographic variables and CHCT were not statistically significant however, married men were 1.4 times more likely to test as a couple compared to those cohabiting or in a heterosexual relationship (crude OR=1.46) and this was statistically significant based on the *P* value (P=0.048)but not using the (95% confidence intervals (95% CI:0.88 - 2.44).

Table 4: Bivariate Analysis of socio-demographicfactors potentially associated with the uptake of CHCT among cases and controls.

Variable	#Cases n=(147)	$Controls n=(147)	Crude OR,95% CI	P-value
Age	**n=(145)**	**n=147**		
21-30	46	54	0.80 (0.43-1.29)	0.218
31+ years	99	93		
Marital status	**n=145**	**n=147**		
Married	109	99	1.46(0.88 to 2.44)	**0.048**
cohabiting/ heterosexual relationship	36	48		
Duration of relationship	**n=(145)**	**n=147**		
6 months-10 years	89	91	0.97(0.61-1.56)	0.511
11 +years	56	56		
Level of education	**n=145**	**n=147**		
Never been/Primary	21	18	1.21(0.61-2.38)	0.348
Secondary/University	124	129		
Occupation	**n=(145)**	**n=147**		
Formal	57	72	0.67(0.42-1.07)	0.061
Informal/student	88	75		
Religious group	**n=(145)**	**n=147**		
Catholic	56	48	1.29 (0.80-2.09)	0.173
Other religions	89	99		
place of Residence	**n=147**	**n=147**		
Urban	115	115	1.03(0.57 to 1.74)	0.512
Rural	32	32		
Duration of residence	**n=(145)**	**n=147**		
0-10 years	70	59	1.39 (0.87-2.21)	0.100
11 + years	75	88		

The associations between the uptake of CHCT and other socio-cultural factors such as perceived barriers and promoters to CHCT including psychological, social, cultural, knowledge, class, health services and religious factors as well as perceived benefits of CHCT were also assessed by computing the crude odds ratios in bivariate analysis. The bivariate results show a statistically significant association between CHCT and the variables: talk about sexual issues as a couple, talk about HIV, think partner is at risk of contracting HIV, think self is at risk of contracting HIV, self rating of risk of HIV, ever tested for HIV before, manner of previous HIV test, informed partner about HIV status, think CHCT is beneficial/useful, know partners HIV status and know positive things about CHCT (see Table 5).

Table 5: Bivariate analysis of socio-cultural factors potentially associated with the uptake of CHCT among cases and controls.

Variable	#Cases (n=147)	$Control (n=147)	Crude OR, 95%CI	P-value
Knew how one can get HIV	**n=147**	**n=147**		
Yes	144	143	1.34(0.29-6.10)	0.500
No	3	4		
Talk about sexual issues as a couple	**n=147**	**n=147**		
Yes	135	98	5.62 (2.84-11.13)	**0.000**
No	12	49		
Talk about HIV as a couple	**n=146**	**n=147**		
Yes	131	74	8.61 (4.61 -16.08)	**0.000**
No	15	73		
Think Partner is at risk of contracting HIV	**n=147**	**n=147**		
Yes	34	76	0.28 (0.17-0.46)	**0.000**
No	113	71		
Think self is at risk of contracting HIV	**n=147**	**n=146**		
Yes	34	74	0.29 (0.17-0.48)	**0.000**
No	113	72		
Self risk rating of HIV infection	**n=145**	**n=147**		
Low	113	69	3.99 (2.40-6.64)	**0.000**
High	32	78		
Believes that when there is trust in a relationship one is safe from HIV	**n=147**	**n=146**		
Yes	129	127	1.07 (0.53-2.13)	0.708
No or do not know	18	19		
Personally know a couple who are both HIV positive?	**n=147**	**n=146**		
Yes	62	68	0.84 (0.53-1.34)	0.261
No	85	78		
Know anyone who has a partner that is HIV positive?	**n=147**	**n=147**		
Yes	42	57	0.63 (0.38 -1.03)	**0.046**
No	105	90		
Know places where one can access CHCT in this community?	**n=147**	**n=147**		
Yes	145	141	3.08 (0.61-15.54)	0.141
No	2	6		
Ever tested for HIV before	**n=147**	**n=147**		
Yes	117	75	3.74(2.23-6.26)	**0.000**
No	30	72		
Manner of previous HIV test	**n=117**	**n=75**		
As a couple	84	33	3.24 (1.76 to 5.95)	**0.000**
Alone	33	42		
Informed partner about HIV status	**n=33**	**n=39**		
Yes	29	26	3.62 (1.05-12.51)	**0.032**
No	4	13		
Believes staff will keep test results confidential	**n=147**	**n=147**		
Yes	142	145	1.0 (0.13-7.19)	0.689
No	2	2		
Think couple counselling and testing is beneficial/ useful	**n=147**			
Yes	145	108	26.18 (6.18-110.79)	**0.000**
No	2	39		

Knows partner's HIV status	**n=127**	**n=39**		
Yes	126	34	18.52 (2.09-163.94)	**0.003**
No	1	5		
Know of negative things about couple counselling and testing	**n=147**	**n=144**		
Yes	126	119	1.26 (0.67 -2.37)	0.488
No	21	25		
Know of Positive things about couple counselling and testing?	**n=147**	**n=147**		
Yes	143	119	8.41 (2.86-24.65)	**0.000**
No	4	28		
Religion supports couple HIV counselling and testing?	**n=147**	**n=146**		
Yes	141	145	0.16 (0.01 - 1.36)	0.056
No	6	1		
Believe that male circumcision would encourage CHCT uptake	**n=145**	**n=146**		
yes	106	117	0.71(0.40-1.23)	0.141
no	39	29		
Believe that male influence would encourage CHCT uptake	**n=145**	**n=146**		
yes	109	96	1.60(0.96-2.68)	**0.045**
no	36	50		
Believe that if decisions are made by men it would prevent CHCT uptake	**n=145**	**n=146**		
yes	106	117	0.87(0.50-1.48)	0.354
no	39	34		
Believe that polygamy would prevent CHCT uptake	**n=145**	**n=146**		
yes	82	86	0.93(0.58-1.49)	0.440
no	63	60		
Believe that sexual cleansing would prevent CHCT uptake	**n=145**	**n=146**		
yes	92	91	0.09(0.67-1.76)	0.141
no	53	55		

[#] For cases n = 147 unless otherwise stated. [$] For controls n = 147 unless otherwise stated.

Multivariate analysis

Multivariate analysis was conducted using multiple logistic regression with a backward stepwise regression approach, to determine the independent predictors that could have influenced the uptake of couples HIV counselling and testing. The associations in the multivariate analysis were presented as adjusted odd ratios and 95% confidence intervals. In model 1, the two variables (think couple counselling is beneficial /useful and know positive things about CHCT) though statistically significant in the bivariate analysis, were excluded from the multivariate analysis, because they seemed more likely to be consequences of testing as a couple rather than a cause of it (see Table 6).

However, the two variables (think couple counselling is beneficial /useful and know positive things about CHCT) were included in model 2 in order to see if there was any adjusted effect on other factors. Including them in the model resulted in minimal change in the adjusted odds ratios for all the independent predictor variables (see Table 7).

Table 6: Independent Predictor variables influencing uptake of CHCT - Multivariate logistic regression-model 1

Variable	Adjusted odds Ratio	95% C.I.	
		Lower	Upper
Talk about sexual issues as a couple	.574	.138	2.383
Talk about HIV as a couple	5.677	1.596	20.190
Think partner is at risk of contracting HIV	.537	.088	3.260
Think self is at risk of contracting HIV	2.563	.367	17.919
Low self rating of risk of HIV infection	2.146	.497	9.276
Had Previous Test as a couple	.433	.219	.854

Note: Other variables which were inserted in the initial model and then removed as they were not statistically significant were the following:

- Ever tested for HIV
- Informed partner about HIV status
- Knows partners HIV status
- Marital status

Table 7: Independent Predictor variables influencing uptake of CHCT - Multivariate logistic regression: model 2

Variable	Adjusted Odds Ratio	95% C.I	
		Lower	Upper
Talk about sexual issues as a couple	.609	.142	2.613
Talk about HIV as a couple	6.030	1.623	22.407
Think partner is at risk of contracting HIV	.597	.096	3.733
Think self is at risk of contracting HIV	1.574	.203	12.238
Low self rating of risk of HIV infection	1.346	.271	6.684
Had Previous Test as a couple	.506	.251	1.021
Think couple counselling and testing is beneficial/useful	3.875	.603	24.877
Know positive things about couple counselling	3.831	.836	17.553

Note: The same variables listed below which were inserted in model 1 and then removed as they were not statistically significant, were also removed in model 2:

- Ever tested for HIV
- Informed partner about HIV status
- Knows partners HIV status
- Marital status

CHAPTER 5 DISCUSSION & CONCLUSION

As noted before couples counselling and testing has been proved to be one of the interventions that is positively associated with promoting safer sexual behaviour, promoting communication, reducing HIV transmission to a negative partner in discordant couples and preventing new HIV infections among couples (King et al., 2008). However CHCT uptake remains low in Livingstone town and therefore this case control study investigated the factors influencing CHCT uptake among men in Livingstone.

This discussion section is organised into three headings with sub-headings, with the headings being: (1) 'factors independently associated with uptake of CHCT' which were determined from the multivariate analysis models; (2) 'factors associated with the uptake of CHCT' in the bivariate analyses; and (3) 'knowledge attitudes and practises towards HIV and CHCT' which covers socio-demographic characteristics, knowledge on HIV and CHCT, attitudes towards CHCT uptake and CHCT seeking behaviours.

Although strenuous attempts to discuss each factor's association with CHCT discretely, were adhered to, the intersection between factors is such that one simply had to comment on other linked factors when discussing one factor. However efforts were made to keep repetition to a minimum and hence when discussing more than one factor the focus has been on the overlap of the intersecting factor with that of the main factor of interest being discussed, rather than commenting extensively on both factors. The intersecting factor is then later discussed holistically in its own right, under its sub-heading. The limitations of the study are then outlined before conclusions are drawn and recommendations are proposed.

5.1 Factors Independently Associated with Uptake of CHCT

5.1.1 Talk about HIV as a couple

The key finding was that there was a significant independent association in the multivariate analysis between 'talking about HIV as a couple' and uptake of CHCT (adjusted OR 5.7) on both multivariate models used. It implies that those couples, who proactively address the possibility of one or both of them having HIV, are more likely to test for HIV together. This variable was a strong independent predictor of CHCT uptake in the two models of the multivariate analysis. Similar findings were reported in a study conducted in Uganda where it was found that those who reported prior discussion of HIV testing with a partner, were more likely to test as a couple (Matovu et al, 2013).This implies that good communication with a partner on HIV plays an

important part in influencing relationship-based decisions, including CHCT, compared to couples who do not communicate as well about HIV and other issues confronting relationships. Of course discussing HIV as a couple is bound to be an activity engaged in by couples who have decided to test for HIV via CHCT, therefore 'talking about HIV as a couple' might just be an intermediate variable between the actual unidentified upstream causal factor and the downstream outcome of testing for HIV via CHCT. However this does not minimise the importance of the effect of 'talking about HIV as a couple' since it implies that however that talking came about, the act of talking about HIV increases the probability of CHCT. Hence any intervention that encourages couples to talk about HIV is likely to result in a greater uptake of CHCT. Based on this a varied array of socially and culturally appropriate activities which might promote couples talking about HIV could be devised with a reasonable presumption that they would be successful in increasing CHCT.

Alternatively 'talking about HIV as a couple' might occur as a consequence of CHCT, however in this study that is unlikely as the participants were interviewed straight after their couples HIV testing and therefore did not have time to have discussed HIV as a couple yet. The only way it could have been a consequence of CHCT is if it occurred after a previous encounter with CHCT. This is a possibility as 40% of participants (57% cases and 23% controls) had engaged in CHCT previously, but since 70% of participants reported 'talking about HIV as a couple' it is more likely that it is an intermediate or distal causative association.

However 'talk about sexual issues as a couple' was not statistically significant on multivariate analysis although it was on bivariate analysis. Unlike 'talk about HIV as a couple', this non significant finding on multivariate analysis for 'talk about sexual issues as a couple' can imply that some couples still feel uncomfortable talking frankly about sexual issues as they think it is a taboo and the talk can somehow lead into accusations of infidelity among couples, suggesting that although they might 'talk about sexual issues as a couple' they might not do so insufficient depth. This is in agreement with findings from a study conducted in South Africa where communicating on safer sex and other sexual issues was limited among couples, because of suspicion of infidelity within their relationship (Parker et al., 2014). Unlike 'talk about sexual issues as a couple', discussions on HIV might be more acceptable because it is considered as a prevention intervention topic, which is overtly encouraged through the door to door sensitizations in communities by health providers, hence couples find it easier to discuss the topic on HIV and eventually get motivated to go for CHCT. Also HIV information can be listened to everyday due to mass media campaigns and talk shows on television and radio

stations, therefore its ubiquitous presence might trigger discussion of it among couples, even though they are less likely to discuss other sexual issues.

It is noted that "think partner is at risk of contracting HIV and "think self is at risk of contracting HIV" resulted in a high likelihood of *not* partaking in CHCT (although this was not significant on multivariate analysis).This suggests that even though couples are more likely to test together when they have discussed HIV together, they refrain from this if they actually think one of them might be positive, indicating that those who test via CHCT might be more confident (rightly or wrongly so) that they are both HIV negative. Importantly those who already knew their partners' HIV status were much more likely to test for HIV as CHCT, suggesting that they had discussed this and being aware of one of their status, were willing and ready to find out the status of the other one together, as well as to confirm the status of the partner they already knew about. This is in agreement with findings from the study by Matovu et al (2014), where knowing the each others' status was the main motivator for going for CHCT.

5.1.2 Had a previous HIV test as a couple

The bivariate analysis showed that having a prior HIV test as a couple was a significant positive determinant of testing for HIV as CHCT again. However, this variable was negatively associated with CHCT in the first model of the multivariate analysis and was not statistically significant in the second model. This strange change in the direction of the association could be attributed to confounding by other variables which were also significant in the bivariate analysis but distorted the association thereby not reflecting the actual negative relationship with the outcome, which was then uncovered in the multivariate analysis when the confounding factors were adjusted for. Therefore, based on the multivariate analysis result it suggests that those couples who had a previous HIV test as a couple, were less likely to test as CHCT again, but would rather test as individual HCT. It could be that they experienced negative consequences after CHCT and therefore preferred individual HCT thereafter. Or it could be that they were discordant and hence if the partner is HIV positive then there would be no need to repeat test as CHCT as the HIV positivity of the partners is established and it is only the negative partner who needs follow-up testing. This finding is dissimilar to a study conducted in Uganda which revealed that couples who had never tested for HIV before were less likely to test as a couple than those who had a previous test as a couple (Ssali et al, 2012). Additionally, he result could also mean that they wanted to re-check the result they obtained at the previous CHCT (whether positive or negative) and wanted to do so without the knowledge of the partner. Or probably they both tested HIV negative as CHCT but later exposed themselves to risky behaviours so they were less likely to

test as CHCT, but they would want to test as individual HCT to confirm their current HIV status. This suggestion is however contradicted by the findings of a study by Tabana et al, (2013), which showed that having a concordant negative result for some men meant that they perceived themselves as having luckily escaped the risk of contracting HIV, especially if they previously had extra-marital affairs, therefore it became an awakening to them of the importance of fidelity and instilled a desire to change their risky behaviour. Otherwise, those who had a previous CHCT test before may simply not have seen the need to have another test as a couple again.

5.2 Factors Associated with Uptake of CHCT on Bivariate Analysis

5.2.1 Talk about sexual issues as a couple

Couples who discuss sexual matters are by virtue of this openness with one another more likely to agree to test together for HIV via CHCT.As noted for "talk about HIV as a couple" it is likely that this discussion with the partner on sexual issues could have arisen either as an intermediate variable or possibly as a result of testing for HIV together, rather than causing the testing for HIV via CHCT. The act of testing for a serious sexual transmitted disease such as HIV is likely to facilitate discussing other sexual matters which might otherwise have been left unspoken about. It should however be noted that; unlike "talking about HIV", talking about sexual issues with a spouse is commonly considered as taboo in a marriage relationship according to prevailing cultural norms in Livingstone town. Couples may find it easier to talk about HIV because of exposure to information about HIV which they can listen to with the family through mass media or antenatal clinics, compared to other sexual issues. Findings from a study conducted in India recorded that talking about sexuality was a taboo topic within marriages there as well (Marlow et.al, 2010).

But one cannot rule out that the prior discussion of sexual matters would make couples more likely to test for HIV via CHCT, effectively confirming it as a potential cause of uptake of HIV testing via CHCT. Unfortunately the questionnaire didn't specifically assess whether these discussions of sexual matters occurred before or after CHCT, hence whether it is a potential cause or consequence remains unanswered by this study, but similarly as noted for 'talking about HIV as a couple' the preponderance of evidence point towards it being causally associated with rather than a consequence of CHCT. Although this result was not significant on multivariate logistics analysis, it should not be discounted as a causative association for CHCT as the lack of significance on multivariate analysis might probably be due to a lot of overlap between this variable and "talk about HIV as a couple".

5.2.2 Think couple counselling and testing is beneficial /useful -Know positive things about couple counselling and testing

These variables are much more likely to be consequences of testing for HIV via CHCT, rather than a cause of it. This is because if you have done something then you are much more likely to defend it as the correct thing to have done. However before one takes some action it makes sense that one is likely to be convinced (or at least hopeful) that the action is correct, hence we cannot discount that knowing positive things about couple counselling and testing increases the chances of believing it is useful to test as CHCT, which could then be a cause of testing for HIV via CHCT. Similarly, this could suggest that those who know positive things about couple counselling were more likely to test as a couple, especially if they had gone through individual testing before, since they may have heard about the added usefulness of CHCT and thus decided to retest through CHCT.

Fortunately we enquired why the participants believed that CHCT is beneficial/useful and the results not surprisingly reflected that trust, openness with each other and desire to protect each other and to protect future children, featured prominently amongst their reasons for believing CHCT is beneficial/useful.

In most cases probably those who tested concordant HIV negative saw CHCT as more beneficial, because they were able to talk about their status with a happy and free mind and this enhanced trust and openness with each other, whereas those who may have discordant HIV test results would not view CHCT as beneficial/useful because its outcome may have resulted in a souring of the relationship as a couple. It can also mean that those who have never tested before may not have experienced the benefits, but may have learnt about another couple who could have benefited from CHCT in one way or another and they got motivated to also test as CHCT.

This of course still doesn't help with the what thought/action came first as the reasons the participants commonly reported as reasons for CHCT being beneficial/useful could similarly have resulted from the act of CHCT, given the implied trust and care for each other that would flow from (or at the very least appear to flow from) the act of simply having gone through with CHCT.

Also, 84% of both cases and controls knew of negative things related to CHCT, such as suspicion of infidelity if one of the partners' tested HIV positive. This suggests that those who new negative things about CHCT were less likely to test as a couple. If one partner tested HIV

positive, regardless of whether they were already positive before they came into a relationship, they might be suspected of infidelity and this would affect the future uptake of CHCT.

The other negative thing reported was that CHCT result in stigma associated with being seen as a couple going for CHCT, as couples/men might have a fear of meeting someone who might know them and who would want to find out why they were going to have an HIV test together. Similarly the perception of divorce as a possible consequence of CHCT suggests that those who thought that their partners or themselves were at risk of HIV may negatively see CHCT as a potential cause of divorce. Therefore men with these perceptions would be less likely to go for CHCT. Interestingly the proportion who knew of negative things about CHCT was only a little different between the cases and controls with indeed a slightly greater percentage knowing negative things about CHCT among the cases (86%) than among the controls (83%). These results are similar to the findings in the study in Uganda by Bwambale et al, (2008), where it was considered a strange behaviour for a man to go with a wife to the health facility.

Importantly the percentage of men (among both cases and controls combined) who identified negative things about CHCT (84%) was just slightly less than the percentage of men who identified positive things about CHCT (89%).However, the cases (those who used CHCT) despite having a higher percentage who knew of negative things about CHCT also had a wider gap between the percentage that identified negative things about CHCT (85%) and percentage of men who identified positive things about CHCT (97%). Hence it is likely that those who chose CHCT weighed up the potential positives and negatives and decided the positives outweighed the negatives. This means that CHCT is probable not an easy decision and is probably taken by participants after assessing their own circumstances and that of their relationship with their partner.

The perceived usefulness or benefits of CHCT are unsurprisingly then an individualised product of the individually specific perceived balance between the positives and negatives of CHCT, for each couple within their relationship context.

Therefore, knowing negative things about CHCT did not on its own influence the uptake of the CHCT service but rather it was balanced against the perceived positive features of CHCT. Both the variables “think CHCT is beneficial& know positive things about CHCT” were statistically significant on the bivariate analysis but in the second model of the multivariate analysis they were not identified as independent significant predictors of CHCT uptake.

5.2.3 Ever tested for HIV before

The results suggest that having had an HIV test before motivated one to go and test again as a couple. The finding in this study suggests that prior HIV test regardless of the result is significantly associated with CHCT uptake. However this variable was not statistically significant in the multivariate analysis. It is speculatively possible that most of those who went to re-test as CHCT had a HIV negative result in the previous test and so they wanted to affirm the negative result and they felt confident enough to go for CHCT, as they reasonably expected to test HIV negative again. This is consistent with findings from a study in Uganda where it was found that prior receipt of a negative individual HCT result increased the likelihood of CHCT (Matovu et al, 2013).Conversely if the initial HIV test were positive then they are still likely to test as CHCT as it would be a way to also learn about their partners HIV status and a chance for the partner to learn about their status if they did not disclose it to their partner beforehand. A similar observation was made in the study conducted in Rakai Uganda, which revealed that the trend of CHCT uptake by men who had prior HIV positive results and where the partner was negative increased from 14.5% to 19% (Matovu et al 2013). Even though we did not know the prior test result, this study also observed in the bivariate analysis that, the those who had ever tested for HIV were 3.2 times more likely to test as couples.

5.2.4 Informed partner about HIV status and/or know partner's HIV status

Those men who disclosed their HIV status to their partners were more likely to test as CHCT but this factor was not statistically significant in the multivariate analysis. As with several of the variables linked to HIV status it is unsure if this association is independent of whether their own and their partners' HIV status was positive or negative. However, it is a more likely scenario that those who test HIV negative would have the courage to inform their partners of their status and, are hence more likely to re-test and encouraged to go for CHCT. Whereas those who may have tested HIV positive were probably less likely to inform their partner and subsequently test as CHCT for fear of allowing the partner to know their HIV positive status, with this probably even exacerbated if they did not also know their partner's status.

Those who knew their partners' HIV status were more likely to test as a couple hence, this suggests they were less afraid of going together to find out their own HIV status as openness had already been established and they would also be prepared to disclose their own HIV status to the partner once the test had been conducted. This eventuality might be enhanced if their partners were HIV negative, and they did not know their own HIV status as if they felt themselves to be at low risk from sexual interactions outside of the partnership then they would be confident that

their HIV status would also be negative. Additionally, even if their partner were HIV positive, they would still be likely to test as CHCT, because they have know their partners' status and hence are ready to hear their own HIV status together. Similar findings were revealed in a study by Maman et al. (2001) where it was reported that relationships grew stronger among couples where women who tested HIV negative disclosed their results to their partners.

5.2.5 Rating of risk of partner

The results show that the number of participants who felt that they themselves were at risk of HIV infection was similar to those that said their partners were at risk of HIV infection (Crude OR=0.29 & 0.28 respectively, $p<0.000$). This could suggest that these were the same people because it is possible that they may perceive both themselves and their partners as being at risk of contracting HIV. The reason given for them thinking that their partners were at risk of HIV were: past sexual relationships of their partners, partners having multiple partners, and partner having prolonged illnesses, but very few (12% and 13% cases and controls respectively) felt that being unmarried was a risk. This suggests that those who had knowledge about their partner's past sexual relationships and partners were likely to test as a couple, because they would want to know if they were safe from HIV infection. Similarly, those whose partners had a history of prolonged illness were likely to test as a couple in order to know their HIV status.

5.2.6 Think partner is at risk of contracting HIV and/or think self is at risk of contracting HIV

The variable 'think self is at risk of contracting HIV was significant in the bivariate analysis but was not statistically significant as an independent predictor of CHCT in both models of the multivariate analysis. The bivariate association suggests that those men who have previously exposed themselves to risky behaviours such as extra sexual relations with other partners, especially where they have not used condoms, may worry that they are infected and could possibly transmit HIV to their partners, hence they are less likely to go for CHCT, but would prefer individual HCT. Conversely, this sentiment presumably applies to their partners as well, thus if they suspect their partner of being at risk of HIV, they might suspect this because their partners' were not keen to test as CHCT and hence they each tested individually. This finding is in agreement with results from the Bwambale et al., (2008) study, where men in multiple sexual relationships were reluctant to test for HIV via CHCT because they feared being divorced or separated from their partners if they tested HIV positive.

A preference for individual HCT amongst men who perceive themselves at risk of HIV infection is similar to findings from a study conducted in Ethiopia where a history of risky sexual

behaviour was significantly associated with individual HCT utilisation among urban men (Leta, Sandoy & Fylkesnes, 2012). They are presumably unlikely to have told their partners of their high risk behaviour since if they test HIV negative, then they are "safe" and don't need to disclose their relationships with other partners, based solely on the need/compulsion to inform their spouse/regular partner that they would have had, if they had tested HIV positive. They may of course still inform their spouse/regular partner of their other sexual relationships, but they will do this based on other factors than the fear of spreading HIV to their spouse/regular partner. On the other hand if they test HIV positive then they are faced with the difficult decision of whether to disclose both their HIV status and by extension their other sexual relationships to their spouse/regular partner, or not.

The above finding in this study was different from that of Maman et al. (2001) which investigated partner violence after HIV testing among married women in Dar es Salaam and found that husbands, who were suspected of infidelity by their wives found CHCT to be a way of regaining a partner's trust. Similar findings were observed in the study by Tabana et al. (2013), where men who tested HIV negative (concordant negative) as a couple, were motivated to stay negative and promised to abstain from risky behaviours, end extra-marital sexual relations and revert to practicing fidelity. The difference between this study and the studies by Maman & Tabana might however be more apparent than real, since if the majority of these men suspected by their wives of having other sexual relationships did not in fact have these other liaisons, then it would make rational sense for them to agree to CHCT as a means of restoring trust, since CHCT would then in their view then be "safe". Furthermore, those who thought that their partners were at risk of HIV infection because their partners had suffered from prolonged illnesses (56% cases, 40%controls) were more likely to go for CHCT because they wanted to know their HIV test results as a couple. It could imply that the spouse's illness is suspiciously perceived as being associated with HIV infection so the partner would want to ensure that they know their status especially if the partners has not disclosed what they are suffering from. Normally, they would test as individual HCT and after knowing their status they would now suggest to go for CHCT.

On the surface it would appear irrational that those men who suspect their partners of being at risk of HIV infection would not be enthusiastic about testing for HIV via CHCT, as they could thereby expose and confront their partners with their risky behaviour. However on a deeper level, even if they suspect their partners had sexual relations with others, they may not be ready to confront that reality as well as having to deal with the possibility of their partners having passed

on the HI virus to them. They may then want to first establish and "deal with" their own HIV status before they are ready to confront their partners. This then makes it a rational choice that men, who suspect their partners' of having engaged in risky sexual behaviours, such as having had multiple partners and having thus exposed themselves to HIV infection, were less likely to test as CHCT, because they would be afraid of the HIV test result. It is eminently probable that those couples who do not trust each other, would be suspicious that their partner could have put them at risk of contracting HIV, and hence they are more likely to go for individual HCT, and would probably only request CHCT after first knowing their own HIV test result.

5.2.7 Self-rating for Risk of HIV

The findings in the bivariate analysis are that those who rated themselves "low risk" of contracting HIV were 3.9 times more likely to test as CHCT. The association between low risk self-rating and CHCT uptake could be due to the fact that these men feel that they have not exposed themselves to any risks, hence they feel confident that they would test HIV negative and hence they would have little to no apprehension about testing via CHCT. It could also mean that those who had a low self-rating risk trusted their partners and therefore perceived themselves not to be at risk via their partners and/or they additionally knew their partners' HIV negative status or even their own previous HIV negative result and hence reasonably presumed that they would have a negative HIV result on testing via CHCT. While those who rated themselves "high risk" of contracting HIV, were less likely to test as CHCT, because of the fear that the results may be HIV positive. This variable was statistically significant in the first multivariate logistic regression model, but adjusted down in the second multivariate analysis model.

The low risk perception was observed among most cases (79%) but to a much lesser extent amongst controls (45%). This probably arose because most of the cases (87%) knew that their spouses/partners had tested for HIV before and 99% of these cases knew the HIV status of their spouses/partners. This 99% knowledge of partners' HIV status is however likely to be an artefact of the study, as participants were interviewed after their HV test and hence those who tested as CHCT would have in the previous few minutes have become aware of their partner's HV status. Indeed it is perplexing why this figure is not 100%, and perhaps the one participant who reported not knowing his partner's HIV status may have been inadvertently interviewed before the CHCT results were made available to him.

It can also happen that some men would not go for CHCT again if they were concordant positive because they would have been empowered with knowledge of their HIV status hence they feel it is not necessary to test again as it will not change the status. This kind of a behaviour was

observed in a study by Tabana et al, (2013) which showed that having a concordant negative result for some men meant that they have escaped the risk of contracting HIV, especially if they had extra affairs, therefore it became an awakening of the importance of fidelity and a desire to change their risky behaviour. If concordant HIV positive, there would be no need to retest unless they doubted the test results. However, having speculated that trust levels are raised by having tested previously, one should note that we found in this study that trust within a relationship had no effect on whether participants tested as CHCT or not. Finally according to the multivariate analysis findings, having taken the plunge the first time to test as CHCT couples may not mean that the couple would go back to have CHCT.

5.2.8 Socio-demographic associations

This study observed that the association between CHCT uptake and socio-demographics variables such as: age, duration of the relationship, level of education, occupation, religious affiliation, place of residence and duration of residence were not statistically significant (P>0.05) in the bivariate analysis. Although the study found that men who have only attained education up to primary level or have never been to school were slightly more likely to test as a couple (54%) than those who have reached secondary/university level (49%), however this was not statistically significant. This finding is in concordance with the reported low uptake of HIV testing among students with a higher level of education in a study conducted by Tewabe, et al. (2012). It could be that those with lower education think that they are at risk probably due to previous exposures and would want to go for CHCT compared to those with higher education who may have low risk perceptions. This observation is in contrast with the findings from the studies by Iliyasu et al. (2006) and Ziraba et al. (2011) which found that a higher level of education was significantly associated with higher uptake of HIV testing. It is a common observation that individuals with a high level of education seek health care services more than those with lower education levels, because they want to make an informed decision in terms of testing to find out their status or confirm their suspected status. It was also observed that those who have lived less than 11 years in Livingstone were more likely to test as CHCT than those who have lived there longer than 11 years. A possible explanation to this finding could be that those men who have lived longer in Livingstone are well known within their community health facilities hence they fear of stigma if they will be seen going to the health facility with the partner/wife, while those who have lived there for a short time feel secure that they are not known. Married men were 1.4 times more likely to test as CHCT than those who were cohabiting or were in a stable heterosexual relationship but not living together though this was not

significant in the bivariate analysis. This finding among married men could be attributed to premarital CHCT which may be a prerequisite for marriage (Maman et al, 2001), or that they had prior individual HCT and know their HIV status (Matovu et al., 2013) compared to those who are cohabiting or are in a stable heterosexual relationship who may not think that CHCT was important or may be afraid of the outcome of the HIV test results. Also it could be that these men are not as committed to the relationship as married men for them to ask the partner to go for CHCT, or it could be that they may have had individual HCT so they already know their status.

5.3 Knowledge attitudes and practices towards HIV and CHCT

5.3.1 Education level and Knowledge of how one can get infected with and prevent getting HIV

The study found that knowing how one can get infected with HIV and knowing how to prevent getting infected with HIV were not associated with CHCT uptake in the bivariate analysis. This is probably a reflection of the very high and very similar levels of knowledge of HIV prevention (98%) amongst both groups (cases 98% and controls 97%). Noting that the vast majority of the participants had attained at least a secondary level of education (cases 86% and controls 88%); it is probable that this translated into high levels of knowledge of the mechanisms of infection with and prevention of HIV amongst both cases and controls. Again probably due to the generally high level of education amongst participants, the differences in education levels between cases and controls were negligible. This probably explains why this study did not corroborate the findings in the Maman et al, (2001) study, where men who had high literacy and knowledge levels were more likely to test for HIV via CHCT.

5.3.2 Know places where one can access CHCT

The likelihood of testing as CHCT is high among those who know places where one can access CHCT in the community, as one would expect since one can hardly test via CHCT if one doesn't know where to go for the testing. However there was no association between knowledge of CHCT test venues and CHCT testing, as awareness of CHCT test venue locations was very high amongst those who utilised individual HCT. Most people (95%) who chose individual HCT (controls) knew where to access CHCT hence lack of awareness of the existence of CHCT and where to access it, was not a factor in choosing individual HCT over CHCT.

5.3.3 Rating of HIV testing services

In this study, the majority of participants rated the facility to which they went for HIV testing as either excellent (40%) or very good (45%), while most others rated it as good (12%) and just 3% reported it to be poor. This rating could have been based on a number of issues including; the

attitude of the staff/health providers that attended to them, the environment in terms of privacy and cleanliness as well as the availability of the services and supplies; opening times and closing times and the distance to the facility as well as the location. Unfortunately the reasons why participants rated the services as highly as they did were not enquired about. However since both individual HIV testing and CHCT services were highly rated (95% and 98% respectively) the level of excellence of the two types of HIV testing services did not affect the choice of HCT or CHCT.

5.3.4 Reasons for choosing current HIV testing facility

The univariate analysis shows the reasons for choosing the current facility as: it being near home and easily accessible, it offering good services; counsellors are friendly and trustworthy and they uphold confidentiality. These findings are in agreement with findings by Bwambale et al (2008), where study participants referred to confidentiality, proximity and convenience (short distance) as their main reasons for choosing the testing facility. Very few respondents (8% cases and 16% controls) reported that they choose certain facilities because they did not want other people to see them, therefore they go where they are not known, compared to 81% (cases) and 83% (controls) who chose the facilities because they were near home, and yet they did not care about the issue of being seen by those who knew them. This implies that apart from the perceived good quality of services, short distance to the service areas was one of the motivating factors for accessing both HCT and CHCT at the facility.

5.3.5 Believe staff will keep results confidential

Those men, who have experienced or have heard that counsellors always keep the HIV test results confidential, are likely to choose such a facility for their HIV testing. In this study 98% of the participants believed that staff will keep their HIV test results confidential and this probably persuaded them to go attend this facility for both HCT and CHCT. This belief did not influence the uptake of CHCT services rather than HCT, as confidentiality is crucial to both types of HIV testing. Importantly it means that overwhelmingly men trust the service providers to maintain confidentiality and hence would take a step to test for HIV.

5.3.6 Link between trust in relationship and perceptions of risk of developing HIV

There was no relationship between belief in the protecting power of trust in a relationship against HIV infection and CHCT uptake. This is because there were similarly high levels of participants who believed that if they trusted their partners' then they were relatively protected from HIV infection amongst cases (88%) and controls (87%). It could be that despite the trust that one had in the relationship they still perceived themselves as being at risk of contracting HIV. However

despite these strong beliefs in the protecting power of trust this study observed that self risk perception of HIV infection did not correlate with belief in trust of partner and it was statistically significant in the bivariate analysis, with those who felt at higher risk of HIV infection being much less likely to test as CHCT. Therefore belief in the protective power of trust in this case could just be one of the factors that may be outweighed by several others and may not affect the couple's decision to test together.

Crucially this study unfortunately did not directly assess the extent to which participants trusted their partners but rather assessed their belief in trust as a protective force against HIV. Hence it is likely that those who believed in the value of trust might not necessarily have actually trusted their partners. Additionally both cases and controls in the univariate analysis reported that CHCT promoted trust in a relationship and also felt that if they tested together, they can live with a free mind and would know how to live positively, showing yet again that as with several other variables, belief in the protective value of trust could be a consequence of CHCT rather than a potential causative association This finding affirms the findings by Plattner, (2010) in a study conducted among university students in Botswana where it was found that the students who had an HIV test and tested negative had the belief that they were protected and even their sexual partner was negative even if the partner did not undergo an test. They developed the trust and were less likely to fear that they can contract HIV infection.

5.4 Overall assessment of Factors Associated with CHCT

The study observed that the main independent positive predictors of CHCT uptake were 'talk about HIV as a couple' followed by; in order of strong statistical significance in the multivariate analysis were: 'know positive things about CHCT', 'think CHCT is beneficial/useful', 'think self is at risk of contracting HIV' and 'low self-rating of risk of HIV infection'. 'Had a previous test for HIV as a couple', 'think partner is at risk of contracting HIV' and 'talk about sexual issues as a couple' were independent negative predictors of CHCT uptake.

'Talk about sexual issues as a couple' was significantly associated with CHCT on bivariate analysis, but was negatively associated with CHCT in the multivariate analysis (although not statistically significant), while 'talk about HIV as a couple' was strongly associated with uptake of CHCT and was also found to be the strongest independent predictor of CHCT uptake in both model 1 and model 2 of the multivariate analysis. This result is probably due to the considerable overlap between 'talk about sexual issues as a couple' and 'talk about HIV as a couple', with the apparent bivariate association of 'talk about sexual issues as a couple' being shown to be almost

entirely due to its overlap with 'talk about HIV as a couple' on multivariate analysis. This means that generally talking about sexual issues is not sufficient to encourage CHCT (and might even discourage CHCT presumably on the basis of a lack of a full discussion of the issue resulting in avoidance of it) and that specifically discussing the possibility of HIV infection is required for increased uptake of CHCT. Having stated that getting couples to 'talk about HIV as a couple' seems to be a key factor in encouraging CHCT one must remain aware of the possibility that 'talk about HIV as a couple' might be a consequence of CHCT rather than a promoter of CHCT.

'Think partner is at risk of contracting HIV' and 'think self is at risk of contracting HIV' were both negatively significantly associated with uptake of CHCT in the bivariate analysis but 'think self is at risk' was found to be a positive independent predictor of uptake of CHCT in the multivariate analysis. This change in direction of association is strange and conflicts with the positive association of 'low self-rating of risk of HIV infection' with CHCT. One cannot be both more likely to test as CHCT if one thinks that one is at risk of HIV infection and more likely to test as CHCT if one thinks that one's risk of contracting HIV is low. Unfortunately there is no obvious explanation of this conflicting result.

The factors 'think couple counselling and testing is beneficial /useful' and 'know positive things about CHCT' were not statistically significantly associated with CHCT uptake on multivariate analysis and on balance they are likely to be consequences of CHCT rather than potentially causative of CHCT. Other factors that were significantly positively associated with uptake of CHCT in the bivariate analysis, but were not statistically significant on multivariate analysis were: talk about sexual issues as a couple, 'ever tested for HIV before', 'informed partner about HIV status' and 'knows partner's HIV status', marital status, low self rating of risk of HIV infection and had previous tested as a couple. Factors that were significantly negatively associated with uptake of CHCT in the bivariate analysis, but were not statistically significant on multivariate analysis were: think partner is at risk of contracting HIV, think self is at risk of contracting HIV.

5.5 Limitations

The study assessed males only and hence the researcher only got the male perspective on CHCT and acknowledges that it may not coincide with the female perspective. It was very difficult to find and interview men who came with their partner to the public health facilities, because men are not used to going with their partners to these public health facilities, as joint attendance for any health care service is discouraged, compared to attending private health facilities where they

would often attend together. Most men who came to the public health facilities were always in a hurry, either rushing to go to work or to attend to some business. Most married couples who came to the public health facilities were quite young (between 18 and 20 years of age) and therefore not eligible to be in the study. The study did not collect sufficient information especially regarding the HIV status; therefore the researcher was not able to measure the responses which may have been affected by one's HIV status. It was envisaged that more men in formal employment were going to participate in the study considering that Livingstone is urban and an industrialised town, but this was not the case. The study was health facility based therefore those men who tested for HIV (either individually or via CHCT) at community HIV testing sites) rather than at health facilities were missed.

It was difficult to determine whether some factors associated with CHCT were causative or whether they were consequences of CHCT. There were sample size limitations in assessing the benefits of CHCT versus HCT, because participants from the control and case groups had very similar responses and hence a very large sample would have been required to assess if there were and differences in case and control participants perceptions on the benefits (or drawbacks) of CHCT.

5.6 Conclusion and Recommendations

Almost all participants knew how HIV is transmitted and knew how to prevent getting infected with HIV, and additionally almost all knew about CHCT and where to access it. The vast majority rated HIV testing services (both individual HCT and CHCT) as either excellent or very good and nearly all believed that staff would keep their HIV test results confidential. A large proportion of participants knew of both positive and negative features of CHCT and therefore their choice to test as either individual HIV or via CHCT was probably made by weighing up the negative and positive features that applied to themselves.

The only 2 factors independently associated with testing for HIV via CHCT was 'talking about HIV as a couple' which positively affected CHCT and 'had a previous HIV test as a couple' which negatively affected CHCT. It is speculated that having already 'had a previous HIV test as a couple' the participants would not see the need for testing via CHCT again. However a key limitation which kept cropping up was that it was impossible to decide whether 'talking about HIV as a couple' and almost all of the factors associated with CHCT on multivariate and bivariate analysis, were potential causative associations of CHCT, or whether they were

consequences of CHCT. Additionally all the factors measured were linked to each other and hence the decision to undergo CHCT is probably a highly contextualised one, which no one discrete factor influenced on its own, but it would rather have been a holistic mix of all/most of the factors. This implies that to better understand the process by which men (and by implication women), decide whether to test for HIV as CHCT or not, it would be best to undertake a qualitative study using in-depth interviews. Despite this caveat it might be possible to increase uptake of CHCT by implementing an array of socially and culturally appropriate activities which might promote couples to talk about HIV.

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APPENDICES

APPENDIX 1: For BOTH

QUESTIONNAIRE No /…/…/…

THE UNIVERSITY OF THE WESTERN CAPE

SCHOOL OF PUBLIC HEALTH

FALCULTY OF COMMUNITY HEALTH SCIENCES

***Dear respondent**, I am a MPH student in the School of Public Health at the University of the Western Cape. I am carrying out research on 'Factors Influencing the Uptake of Couples HIV Counselling and Testing Among Males in Livingstone District, Zambia'.*

You have been randomly sampled to participate in this research by simply answering the questions in two questionnaires. This is the first questionnaire. After this is done you will be asked some more questions from the second questionnaire. Your answers will be confidential. No one will know who answered this questionnaire. You are not required to give your name.

Your participation in this research is entirely voluntary. If you are not comfortable answering any of the questions or do not want to participate in this research, you are free to do so. However, your participation and your honest answers are very important in this study and will be highly valued. You can discontinue answering questions at any stage without providing any reason for stopping.

SECTION A: DEMOGRAPHIC CHARACTERISTICS

No.	Question Description	Coding Response	Official use
1.	Sex?	Male……..1 Female……..2	☐

2.	Age at last birthday? When were you born?	Date.....Month.....Year.....	☐
3.	Place where lived the longest Name of place…….	Urban area……1 Rural……2	☐
4.	Marital status?	Married……1 Cohabiting ……2 Stable sexual relationship……3	☐
5.	Duration of your marriage/relationship?	(If less than one year) Months Years	☐
6.	Highest level of Education attained?	Never been to school……1 Primary Education……2 Secondary Education……3 University ……4	☐
7.	What is your occupation?	……	
8.	Which Religious group do you belong to?	Catholic ……1 Jehovah's witness ……2 Pentecostal ……3 Protestants ……4 Reformed church……5 Seventh Day Adventist……6 Muslim ……7 None ……8 Other (specify)……9	☐
9.	Duration of residence in Livingstone?	Duration……months ……Years	/----/----/ years

SECTION B: KNOWLEDGE, ATTITUDE & PRACTICE TOWARDS, ABOUT INDIVIDUAL AND COUPLE HIV COUNSELLING &TESTING

No.	Question Description	Coding Response	Official use
10.	Do you know how you can get infected with HIV/AIDS?	Yes.....1 No.....2 **>> 13**	☐
11.	How does a person get infected with the HIV? **(Read out all the options to respondents)**	HIV Infected mother to child.....1 Contact with HIV infected Blood .....2 Eating food with an HIV infected person.....3 Having unprotected sex with an HIV infected person.....4 a mosquito bite .....5 hugging an HIV infected person.....6 witchcraft or supernatural powers.....7 Others (specify).....8	☐
12.	How can you prevent getting infected with HIV? **(Read out all the options to respondents)**	Abstaining from sex.....1 Having sex with just one partner.....2 Using a condom every time you have sex .....3 Getting tested to know your status and safer sex practice .....4 By getting circumcised .....5 others specify.....6	☐

SECTION C: ATTITUDES, PRACTICE AND BEHAVIOIUR &PERCEIVED BARRIERS TO COUPLE COUNSELLING &TESTING

No.	Question Description	Coding Response	Official use
13.	Do you talk about sexual issues as a couple?	Yes.....1 No.....2	☐
14.	Have you talked about HIV as a couple?	Yes.....1 No.....2 /86	☐

15.	Do you think your partner is at risk of contracting HIV?	Yes……..1 No……2 **>>17**	☐
16.	Why do you think your partner is at Risk?	Past relationships……1 Have more than one partner……2 I have been sick for some time……3 We are not yet married……4 Others (specify)……5	☐
17.	Why do you think your partner is not at risk?	We tested HIV negative……1 We trust each other……2 We practice safer sex……3 We practice one partner policy……4 We are abstaining ……5 Oth ers (specify)……6	☐
18.	Do you think you are at risk of contracting HIV?	Yes ……1 No……2 **>>20**	☐
19.	Why do you think you are at risk?	Had past relationships……1 Have more than one sexual partner ……2 Had unprotected sex……3 Do not have trust for my partner……4 We are both into illicit beer drinking……5 Not tested for HIV……6 Partner suffering/suffered from TB……7 Others(specify)……8	☐ ☐
20.	Do you feel that when there is trust in a relationship one is safe from HIV?	Yes ……1 No ……2 Don't know ……3	
21.	Do you personally know any couple who are both HIV positive?	Yes……1 No ……2 **>>23**	☐
22.	How did you come to know about their status?	Told by one of the partners……1 They look unhealthy……2 Seen the couple receiving HIV drugs……3 Others (specify)……4	☐
23.	Do you know anyone who has a partner that is HIV positive?	Yes……1 No……2	☐
24.	Personally, how do you rate your		

☐

	risks for HIV infection?	No risk……1 Low ……2 Moderate……3 High ……4	

SECTION D: FACTORS INFLUENCING CHOICE OF COUPLE COUNSELLING & TESTING SERVICES

No.	Question Description	Coding Response	Official use
25.	Do you know any other places where you can access couple counselling and testing in this community?	Yes……1 No……2 **>>27**	☐
26.	Where else do people in Livingstone access couple counselling and testing?	At the private facilities……1 Mobile testing community... ……2 In the district clinics……3. At the district hospital……4 Other specify……5	☐
27.	Have you ever tested for HIV before?	Yes……1 No……2 **>>31**	☐
28.	Did you test alone or as a couple?	Alone……1 As a couple……2	☐
29.	If you tested alone, did you inform your partner about your status?	Yes……1 **>>31** No……2	☐
30.	What are the reasons for not sharing your results with your partner?	Do not want her to know my status……1 Fear that she can tell other people……2 Do not know her status……3 Do not freely talk about HIV testing……4	☐
31.	How would you rate the testing services at the facility you previously had a test from?	Excellent……1 Very good……2 Good ……3 Poor ……4	

32.	Why did you choose to come to this facility?	Because I am not known ……1 Heard from the radio about the services……2 Confidentiality……3 It is near home……4 They offer good services……5 Friendly and trustworthy counsellors……6 Others(specify)……7	☐
33.	Do you think the staff will keep your test results confidential?	Yes……1 No……2	☐

SECTION E: PERCEIVED BENEFITS OF COUPLE COUNSELLING AND TESTING

No.	Question Description	Coding Response	Official use
34.	Do you think couple HIV counselling and testing is a beneficial (useful) service?	Yes……1 No……2 **>>36**	☐
35.	Why do you think Couple Counselling & Testing services is useful?	Live with a free mind after testing together……1 Promotes trust……2 Know each other results together……3 Learn together how to protect each other if negative……4 Know how to live positively……5 Learn how to protect unborn child……6 Other (specify)……7	☐
36.	Why do you think it is not useful to test as a couple?	It can lead to divorce if one is positive……1 It can bring accusations in a relationship……2 Partner may not be comfortable testing together……3 Others(specify)……4	☐
37.	Has your partner tested for HIV?	Yes……1 No……2 **>>39** Don't know……3 **>>39**	☐
38.	Has your partner's status been made known to you?	Yes……1 No……2	☐
39.	Are there negative things you know about couple counselling and testing?	Yes……1 No……2 **>>41**	☐

40.	What are these negative things about couple counselling and testing?	Creates suspicion if couple tested HIV positive……..1 Can lead to divorce/separation ……..2 Do not want to be seen with the partner together……3 Others (specify)……4	☐
41.	Are there Positive things you know about couple counselling and testing?	Yes……1 No……2 **>>43**	☐
42.	What are these positive things about couple counselling and testing?	Couple learn about their status together……..1 Promotes trust among couples……..2 You can enjoy sex with a free mind……3 Couple knows how to protect themselves……..4 Promotes love……5 Others (specify)……6	☐
43.	What cultural factors or local beliefs would encourage the uptake of couple counselling and testing? e.g. decision making between men and women.	Male circumcision……..1 Man is influential and can convince partner……2 Others (specify)……..3	☐
44.	What cultural factors or local beliefs would prevent the uptake of couple counselling and testing?	All decisions are made by a man……1 Polygamy……..2 Sexual cleansing……3 Others (specify)……4	☐
45.	Does your religion support couple HIV counselling and testing?	Yes ……..1 No……2	☐

THANK YOU SO MUCH FOR PARTICIPATING IN THIS STUDY

Appendix 2: FOR CASES

QUESTIONNAIRE No /…/…/…/

THE UNIVERSITY OF THE WESTERN CAPE

SCHOOL OF PUBLIC HEALTH

FALCULTY OF COMMUNITY HEALTH SCIENCES

Dear respondent, I am a MPH student in the School of Public Health at the University of the Western Cape. I am carrying out research on ***'Factors Influencing the Uptake of Couples HIV Counselling and Testing Among Males in Livingstone District, Zambia'.***

You have been randomly sampled to participate in this research by simply answering the questions in this second questionnaire. Your answers will be confidential. No one will know who answered this questionnaire. You are not required to give your name.

Your participation in this research is entirely voluntary. If you are not comfortable answering any of the questions or do not want to participate in this research, you are free to do so. However, your participation and your honest answers are very important in this study and will be highly valued. You can discontinue answering questions at any stage without providing any reason for stopping.

SECTION A: KNOWLEDGE, ATTITUDE & PRACTICE TOWARDS ABOUT INDIVIDUAL AND COUPLE HIV COUNSELLING &TESTING

No	Question Description	Coding Response	Official use
1.	Have you ever heard about HIV counselling and Testing (HCT) where each individual has the test separately instead of doing it as a couple? **If no skip to 3**	Yes.....1 No.....2 **>>3**	☐
2.	How did you hear about it?	Through a friend/ partner .....1 Through the media (TV/Radio, fliers.....2 Through the Clinic.....3 Through community drama.....4 **Other specify.....5**	☐

3.	Is your partner aware about individual HIV counselling and testing services?	Yes……1 No……2 Don't know……3	☐

SECTION B: ATTITUDES PRACTICE AND BEHAVIOIUR &PERCEIVED BARRIERS TO COUPLE COUNSELLING &TESTING

No	Question Description	Coding Response	Official use
4.	If you both test HIV –ve today would you in future be willing to again have an HIV test together with your partner? **If no, skip to 6**	Yes……1 No……2 **>>6**	☐
5.	If Yes, why would you want to test with her again?	To be sure about the status……1 Because we care for each other……2 Protect the unborn baby……3 We have been unhealthy……4 Others (specify)……5	☐
6.	Why wouldn't you want to test together again?	we already know our status……1 Experience was not good……2 Others (specify)……3	☐

SECTION C: SOCIAL, CULTURAL, PSYCHOLOGICAL & RELIGIOUS FACTORS INFLUENCING INDIVIDUAL'S ATTITUDES TOWARDS CHCT UPTAKE

No	Question Description	Coding Response	Official
7.	Why did you come for HIV testing?	Was found with TB ……1 Planning to get married……2 Wife pregnant……3 Want to know our status……4 Others(specify)……5	☐
8.	Why did you come with your sexual partner for HIV testing	To clear doubts and suspicions……1 To know our status……2 Want to get married……3 Others (specify)……4	☐
9.	Who suggested that you come for HIV testing together?	Me……1 My partner……2	☐
10.	How do you think your partner will react if you tested HIV positive?	She will support /love me……1 She would be upset with me……2 She will divorce me……3 She will end our relationship……4 Don't know……5 Others(specify)……6	☐

11.	How would you react if your partner tested HIV positive	I will accept and support her……1 I would leave her……2 Will be angry with her……3 Don't really know……4 Others (specify)……5	☐
12.	You chose to test for HIV as a couple. Why did you choose to test for HIV this way?	HIV concerns the two of us……1 Planning to get married……2 My wife is pregnant……3 To clear suspicions……4 To free our minds……5 Others(specify)……6	☐
13.	Do you feel that being tested together as a couple for HIV has extra benefits over individual counselling and testing for HIV?	Yes……1 No……2 **>>15**	☐
14.	What are the extra benefits of couple HIV counselling and testing over individual HIV counselling and testing?	If positive, you start medication together….1 It promotes trust and love……..2 To protect our sexual partners……..3 Reduces suspicions……4 prepare to have children with free mind….5 To enjoy our sexual lives ……..6 learn how to live Negatively……..7 Others (specify)……..8	☐
15.	If No, why do you feel there are no extra benefits?	It is the same as testing alone……1 Just brings troubles than benefits……2 Other specify……3	☐

THANK YOU SO MUCH FOR PARTICIPATING IN THIS STUDY

Appendix 3: FOR CONTROLS

QUESTIONNAIRE No /…/…/…/

THE UNIVERSITY OF THE WESTERN CAPE

SCHOOL OF PUBLIC HEALTH

FALCULTY OF COMMUNITY HEALTH SCIENCES

Dear respondent, I am a MPH student in the School of Public Health at the University of the Western Cape. I am carrying out research on ***'Factors Influencing the Uptake of Couples HIV Counselling and Testing Among Males in Livingstone District, Zambia'.***

You have been randomly sampled to participate in this research by simply answering the questions in this second questionnaire. Your answers will be confidential. No one will know who answered this questionnaire. You are not required to give your name.

Your participation in this research is entirely voluntary. If you are not comfortable answering any of the questions or do not want to participate in this research, you are free to do so. However, your participation and your honest answers are very important in this study and will be highly valued. You can discontinue answering questions at any stage without providing any reason for stopping.

SECTION A KNOWLEDGE, ATTITUDE & PRACTICE TOWARDS ABOUT INDIVIDUAL AND COUPLE HIV COUNSELLING &TESTING

No	Question Description	Coding response	Official use
1.	Have you ever heard about Counselling and Testing services where married or cohabiting people test together for HIV instead of separately?	Yes……1 No ……2 **>>3**	☐
2.	How did you hear about it?	Through a friend/ partner ……1 Through the media (TV/Radio, fliers……2 Through the clinic……3 Through community drama……4 Other specify……5 Other specify……6	☐
3.	Is your partner also aware about couple HIV counselling and testing services?	Yes……1 No……2 Don't know……3	☐

SECTION B: ATTITUDES, PRACTICE AND BEHAVIOIUR &PERCEIVED BARRIERS TO COUPLE COUNSELLING &TESTING

No	Question Description	Coding response	Official use
4.	If you test HIV –ve today would you in future be willing to have an HIV test together with your partner? **If no, skip to 6**	Yes ……1 No……2 **>>6**	☐
5.	Why would you test together with your partner?	Need to know her status……1 To protect myself……2 To clear doubts……3 Others (specify)……4	☐
6.	Why wouldn't you test together with your partner?	It is not necessary to test with her……1 I think she is also negative……2 She only has me as a partner……3 Better partner doesn't know my status……4 Others(specify)……5	☐
7.	Do you think your partner would go for HIV testing with you?	Yes ……1 No……2 **>>9** Don't know ……3 **>>9**	☐
8.	Why do you think she would?	We make decisions together……1 She trusts me……2 She may be suspicious of my status……3 Don't know……4 Others (specify)……5	☐
9.	Why do you think your partner wouldn't?	She refused……1 Better not to know……2 We do not talk about HIV in our home……3 Don't know……4 Others (specify)……5	☐
10.	Would you be able to tell your partner if you tested HIV positive?	Yes ……1 No……2 **>>12**	☐
11.	Why would you be comfortable telling your partner?	For her safety……1 To clear doubts and gain trust……2 I love her so she should know……3 To encourage her to also go to test……4 To live positively……5 Others (specify)……6.	☐
12.	Why will you not be comfortable telling your partner?	Partner can divorce me/end relationship……1 Do not want her to know……2 She can commit suicide……3 Others (specify)……4	☐
SOCIAL, CULTURAL, PSYCHOLOGICAL & RELIGIOUS FACTORS INFLUENCING INDIVIDUAL'S ATTITUDES			

TOWARDS CHCT UPTAKE			
No	**Question Description**	**Coding response**	**Official use**
13.	Why did you come for HIV testing?	To know my status……1 Have not been faithful……2 Partner on TB treatment……3 Others (specify)……4	☐
14.	Why did you come without your sexual partner for HIV Counselling and Testing?	Did not know about couple testing services……1 It will be easy for me to tell her……2 Don't want her to worry much……3 She can leave me if iam positive……4 She refused to come with me……5 Wanted to know my status first……6 Just made an abrupt decision to come……7 Others (specify)……8	☐
15.	Does your partner know that you have decided to come for HIV testing?	Yes……1 No……2 **>>17**	☐
16.	What was her reaction to your decision?	No reaction……1 Was not happy and left me to come alone……2 Others (specify)……3	☐
17.	Why didn't you tell her	I did not plan for this……1 I wanted to first find out on my own……2 Avoiding misunderstanding……3 Others(specify)……4	☐
18.	You chose to test for HIV alone rather than together with your partner as a couple. Why did you choose to test for HIV in this way?	Abrupt decision……1 Partner refused to come……2 Avoided misunderstandings……3 Don't want her to know my status……4 Others (specify)……5	
19.	Do you feel that individual HIV counselling and testing has extra benefits over being counselled and tested for HIV together as a couple?	Yes……1 No……2 **>>21**	☐
20.	What are the extra benefits of individual counselling and testing for HIV over couple counselling and testing for HIV?	Free no pressure from partner……1 You can decide not to tell partner……2 Can protect myself……3 Others(specify)……4	☐
21.	Why do you think it has no extra benefits?	You find it difficult to disclose to partner……1 No free mind with the sexual partner……2 You doubt the partners status……3 Others (specify)……4	☐

THANK YOU SO MUCH FOR PARTICIPATING IN THIS STUDY

Appendix 4

UNIVERSITY OF THE WESTERN CAPE

School of Public Health

Private Bag X17 ● **BELLVILLE** ● 7535 ● South Africa

Tel: +27 21- 959 2809, Fax: +27 21- 959 2872

E-mail: ccarolissen@uwc.ac.za

Participant Information Sheet

Dear Participant

You are invited to participate in the research project "***Factors Influencing the Uptake of Couples HIV Counselling and Testing among males in Livingstone District, Zambia".***

Why are we doing this? The aim of the study is to find out the factors contributing to clients coming to test for HIV in Livingstone.

Who is the researcher? The study is being conducted by, Ms Sarah Ngoma, for her Masters Degree in Public Health, at the University of the Western Cape, South Africa.

What do I expect from you in this study? You have been selected to participate in this research as the research is being done on those who come for HIV testing. All you will be required to do is to answer some questions which will be asked by my research assistant whom I am working with. It will take about 20 minutes. If you agree to be asked these questions, please sign the consent form provided. Your participation is entirely voluntary and your name and all your answers to the questions will be kept strictly confidential. The service you receive at the clinic will not be affected in any way whether you agree or do not agree to take part in the study. Even if you agree to take in the study you may still withdraw from the study completely without providing any reason for your withdrawal. However, your participation and your honest answers are very important in this study and will be highly valued.

Anticipated benefits of the study to society The results of this study will improve HIV counselling and testing services.

What will be done to ensure confidentiality? The interviews will be conducted by trained research assistants who have been trained on respect for the participants' values, beliefs, culture and decisions. The information you will give is confidential, no names will be written on the questionnaire or anywhere else, except the consent form, and it will be kept under lock and key. The questionnaire will be destroyed after data entry. Data will be stored electronically in a database on a secured server and access is restricted by password to the researcher.

Yours Sincerely, **Mrs. Sarah Nyirongo Ngoma**

If at any stage you have any queries or concerns regarding your participation in the study, please contact me on:

Email: sarahn@sfh.org.zm or ngoma.sarah@gmail.com.

Cell: +260 977 827 226

Or else contact the local study supervisor:

Study local supervisor's details: Professor KS Baboo

School of Community Medicine

University of the Zambia

P.O.Box 50110
Lusaka

Mobile**: +260 211 252641 (Deans Office)**

Email: **sridutt2001@yahoo.com**

Or contact : The Chairperson

ERES Converge IRB
33 Joseph Mwilwa Road
Rhodespark, Lusaka
Tel: +260 955 155 633 /+260 955 155 634
Email: erescoverge@yahoo.co.uk

Appendix 5

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9592809, Fax: 27 21-9592872

E-mail: ccarolissen@uwc.ac.za

CONSENT FORM

Title of Research Project: Factors Influencing the Uptake of Couples HIV Counselling and Testing Among Males in Livingstone District, Zambia.

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name……

Participant's signature……

Witness…….

Date……

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study supervisor, Dr Gavin Reagon from the University of the Western Cape or my Local Supervisor Professor Baboo on the following details:

Study local supervisor's details: Professor KS Baboo
School of Community Medicine
University of the Zambia
P.O.Box 50110
Lusaka
Phone**: +260 211 252641 (Deans Office)**
Email: **sridutt2001@yahoo.com**

Email: **greagon@uwc.ac.za**

Appendix 6

UNIVERSITY of the WESTERN CAPE

OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH DEVELOPMENT

26 October 2012

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and ethics of the following research project by: Mrs S Ngoma (School of Public Health)

Research Project:	Factors influencing the uptake of couples HIV counseling and testing among males in Livingstone district, Zambia
Registration no:	12/9/17

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

Private Bag X17, Bellville 7535, South Africa
T: +27 21 959 2988/2948 . F: +27 21 959 3170
E: pjosias@uwc.ac.za
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Appendix 7

ERES CONVERGE

33 Joseph Mwilwa Road
Rhodespark, Lusaka
Tel : +260 955 155 633
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Cell: +260 966 765 503
Email: erescoverge@yahoo.co.uk

I.R.B. No. 00005948
F.W.A. No. 00011697

7th January, 2013

Ref. No. 2012-Nov-001

The Principal Investigator
Mrs. Sarah N. Ngoma
Society for Family Health
P.O. Box 50770,
LUSAKA.

Dear Mrs. Ngoma,

RE: Factors influencing the Uptake of Couples HIV Counselling and Testing among Male in Livingstone District, Zambia.

Reference is made to your corrections dated 4th December, 2012. Noting that you have addressed all concerns raised the IRB members resolved to approve this study and your participation as Principal Investigator for a period of one year.

Review Type	Normal	Approval No. 2012-Nov-001
Approval and Expiry Date	Approval Date: 7th January, 2013	Expiry Date: 6th January, 2014
Protocol Version and Date	Nil	6th January, 2014
Information Sheet, Consent Forms and Dates	• English and Lozi.	6th January, 2014
Consent form ID and Date	Version-Nil	6th January, 2014
Recruitment Materials	Nil	6th January, 2014
Other Study Documents	Questionnaires.	6th January, 2014
Number of participants approved for study	300	6th January, 2014

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

Conditions of Approval

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to the IRB within 5 days.
- All protocol modifications must be IRB approved prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address.
- All protocol deviations must be reported to the IRB within 5 working days.
- All recruitment materials must be approved by the IRB prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. Documents must be received by the IRB at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Any documents received less than 30 days before expiry will be labelled "late submissions" and will incur a penalty.
- Every 6 (six) months a progress report form supplied by ERES IRB must be filled in and submitted to us.
- ERES Converge IRB does not "stamp" approval letters, consent forms or study documents unless requested for in writing. This is because the approval letter clearly indicates the documents approved by the IRB as well as other elements and conditions of approval.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of ERES Converge IRB, we would like to wish you all the success as you carry out your study.

Yours faithfully,
ERES CONVERGE IRB

Dr. E. Munalula-Nkandu
BSc (Hons), MSc, MA Bioethics, PgD R/Ethics, PhD
CHAIRPERSON