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DYAD-RELATED FACTORS IN HIV PREVENTION

Thesis Presented for the Degree of

DOCTOR OF PHILOSOPHY

in the Division of Public Health

School of Public Health and Family Medicine

UNIVERSITY OF CAPE TOWN

12 August, 2010

Mercy Gladys Sekai Kamupira

Supervisor: Associate Professor Landon Myer

DECLARATION

I, Mercy Gladys Sekai Kamupira, hereby declare that the work on this dissertation is based on my original research and that it has not, in whole or in part, been submitted towards another degree, at this university or elsewhere. The university is empowered to reproduce either the whole or any portion of the contents for the purposes of research. Each significant contribution to, and quotation in this dissertation from the work, or works, of other people has been attributed and has been cited and referenced.

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ACKNOWLEDGEMENTS

Many people have contributed in various ways to the successful completion of this thesis. I would like to express my sincere gratitude to the following:

Professor Landon Myer, my supervisor, consistently provided me with excellent advice, insight and support. I am extremely grateful for his willingness to meet with me, in order to discuss my thesis. I will always be grateful for the patient, objective and encouraging way in which he guided me throughout this process. He was indeed a source of encouragement and inspiration. He also greatly assisted me by urging me to apply for the South African Centre for Epidemiological Modelling (SACEMA) bursary, which was the only source of funding for this PhD.

Dr David Coetzee from the Infectious Diseases Epidemiology Unit (IDEU), University of Cape Town was the principal investigator of the Partners in Prevention (PIP) study at the Cape Town research centre. He offered me a position in the IDEU and agreed that this study be conducted as an ancillary study to the PIP study. He accordingly gave me helpful input in the proposal of this study. I would like to thank him for his support and encouragement throughout this process.

Professor Rodney Ehrlich guided me in my decision to pursue a PhD in Public Health. In his supervision of my MPH thesis, he gave me some understanding and foundation in public health research. I thank him for his support.

The PIP study team, especially Professor Connie Celum at the University of Washington, who encouraged capacity development at the African research centres, gave me ongoing support and encouragement throughout my research.

I would also like to thank all my friends who encouraged me throughout this process. Their unending faith in me, and their constant support kept me going.

Joyce Kanhema, my research assistant, deserves my gratitude for her conscientious and excellent assistance. Her help made the process easier.

Roslyn Baatjes greatly assisted in the statistical analysis. I thank her for that assistance.

The interviewers at the Manyanani@Empilisweni clinic: Khunjuzwa Khume, Malibongwe D. Majola, Pamela Magona, Sindiswa Godwana, Zukiswa Mazula, Mninawa Ntshongwana, Penny Mgwigwi, Chuma Ndulane and the late Goofy Tshabalala. The counsellors and nurses at Manyanani@Empilisweni clinic: Zonke Makhonza, Nombulelo Mabuto, Tembisa Nkopela, Mkhanyiseli MK Mpalali and Tamara Dekeda. I am extremely grateful for all their assistance and involvement.

My family, and especially my mother and father, continued to remind me that, with determination, all can be achieved. Their support and encouragement sustained me.

Finally, I thank the participants in this study: the brave men and women who cooperated to “come together, test together, know together and plan together”. I thank them for sharing the private details of their lives. Without their consent, cooperation and support, this thesis would not have been written.

FUNDING

I would like to thank the South African Centre for Epidemiological Modelling (SACEMA) at the University of Stellenbosch for the funding they gave me, as this greatly assisted in my research.

This funding was given in the form of a bursary that was awarded annually over a period of three-and-a-half years.

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DEDICATION

I dedicate this thesis to all couples infected and affected by HIV. My interaction with the hundreds of couples in this study has shown me that many are very vulnerable, yet brave; very fragile, yet strong; and very broken, yet loving.

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ABSTRACT

Title: Dyad-related factors in HIV prevention

Objectives

Currently, HIV prevention strategies focus on promoting the modification of those individual behaviours that lead to an increase in susceptibility to and transmission of HIV infection. The focus on individuals in HIV voluntary counselling and testing frequently overlooks the fact that communication and collaboration between the sexual partners is required to effect any behavioural change within an intimate partnership. Developing HIV prevention strategies targeting couples is therefore noted to be increasingly relevant for improving HIV/STI risk reduction uptake. Couple HIV counselling and testing (CHCT) is a strategy that aims to bridge this gap by providing a safe environment for partners to be tested and counselled together. In this way, the burden of disclosing one's HIV status to one's partner is eliminated, and the difficulties experienced by the tested individual in negotiating risk reduction uptake are significantly reduced. There is a paucity of data regarding couples' experiences in and perceptions of CHCT within the South African setting. This study explores couples' experiences before, during and after CHCT; determines the socio-behavioural risk factors for HIV status in couples; explores the impact of couple HIV status on fertility desires, and lastly examines the reliability of interpartner reports on sexual and other behaviours.

Methods

This was a cross-sectional study with baseline and follow-up components; in addition to a qualitative study component. Structured interviewer-administered questionnaires were applied to each member of the couple separately at baseline prior to CHCT (n=600 couples), immediately post CHCT, and at least 1 month post the CHCT process (n= 258 couples). In addition, in-depth qualitative interviews were done with each member of 27 couples at least one month post CHCT.

Results

Overall, the HIV prevalence in the study sample was 30% (24% in male and 35% in the female participants). Of the 600 couples tested for HIV, 354 (59%) were HIV concordant negative, 136 (23%) were HIV serodiscordant and 110 (18%) were HIV concordant positive. Of the HIV serodiscordant, 101(74%) were couples in which the female was the HIV positive partner and 35 (26%) had HIV positive males. Contextual factors such as community perceptions and levels of HIV-related stigma significantly influenced the couples' decision to test for HIV. Couples reported improved risk reduction uptake and improved communication as well as general improvements in other aspects of their lives at follow-up post the CHCT process. Factors such as community and family expectations as well as financial stability seemed to play a more influential role as determinants of fertility desire, compared to the couple HIV status. Comparison of couples' responses to some questions regarding sexual and other behaviours revealed that there was low interpartner agreement particularly with respect to questions regarding communication behaviours. Key findings indicate that CHCT was acceptable to the couples who attended this process, and yet, making the decision to test was difficult for most couples. Partners devised various strategies to initiate the discussion on the need to test for HIV. However, after CHCT attendance, the process was highly rated, regardless of gender or resultant HIV status.

Conclusion

In order to increase the usefulness and effectiveness of CHCT, the process must be able to address pertinent uncertainties and concerns that couples might have with regard to HIV risk-reduction uptake and fertility desires.

Author: Mercy G.S Kamupira

Date: 12 August 2010

PREFACE

I commenced this thesis in May 2005 while working as a study coordinator at a University of Cape Town research clinic in Guguletu, Cape Town where HIV serodiscordant couples were being recruited for a Phase III clinical trial. To identify the HIV serodiscordant couples, the prospective couples had to go through couple HIV counselling and testing.

The experience of working with couples was a great eye-opener. It gave me the opportunity to intermingle with couples at many stages: from talking to them in the community, inviting them to attend the clinic for HIV testing, and interfacing with them during trial follow-up visits. Weekly debriefing meetings with the staff at the research clinic, particularly with the counsellors, indicated that the needs of couples were very diverse and complex. The training that the counsellors had received to counsel couples was sometimes inadequate for dealing with the issues that couples brought up and some of the questions they asked. While I was working there, I realised that our planning was not always successful, particularly with regard to couple recruitment. We tried all the planned methods of recruiting couples for the trial, including methods recommended by researchers in other centres, and it was still a challenge to obtain sufficient numbers of couples within the required timelines.

This challenge of recruiting couples and the issues brought up by counsellors helped to shape the objectives of this PhD thesis. I decided to undertake this thesis so that I could evaluate these ideas and anecdotal quotes formally and scientifically, with the goal of contributing information and insight to the body of knowledge in the area of HIV prevention in couples. For three years, I worked at the UCT research clinic dealing with couples. This duration of exposure to couples was invaluable for this thesis, as it was during that time that I wrote the proposal, collected the data, and started the data analysis. Although daily exposure to couples might seem routine, for me it was priceless and invaluable. I liken it to a lived experience research, where I was confronted every day with some aspect of the dynamic between couples – sometimes quite small, but at other times very big, such as marital conflict. This entire experience enriched my understanding of couples and particularly of the authentic and sometimes subtle life issues they face with regard to HIV prevention.

QUOTES

“When we set up Project San Francisco (in Kigali, Rwanda) to counsel the women who were coming in to be tested, I sat in on the first 700 or so counseling sessions to get a feeling of what these women were able to grasp from what we were telling them about how to protect themselves from HIV or how to prevent its transmission. I was very surprised by how quickly they understood the bottom line. They told me, “Thanks for the information, but you really need to talk to our husbands, because they are the ones who make decisions in our marriage about sexual matters.” We encouraged the men to come in, and a third of them showed up despite having no incentives; we didn’t even reimburse their transport costs. That’s when we discovered the phenomenon of discordant couples.”

Dr Susan Allen in an interview by Hema Bashyam

Bashyam, H. 2008. People and Ideas: Susan Allen: Confronting HIV in Africa. The Journal of Experimental Medicine, Vol. 205, No. 5, 1000-1001.

“Our message this year is clear; it says show that you are responsible by doing the following:

.....Couples talk about their relationships and how they can protect each other from HIV infection. Couples can protect themselves by remaining faithful to each other, testing for HIV together and always using condoms. Every time you start a new sexual relationship, you should both be sure of your HIV status.”

Speech by the KwaZulu-Natal Member of the Executive Council (MEC) for Health, Dr Sibongiseni Dhlomo on the occasion of the commemoration of the World AIDS Day 2009 in Dannhauser, South Africa 1 December 2009

<http://www.kznhealth.gov.za/speeches/2009/aidsday.pdf> [Accessed: 1 June 2010]

ABBREVIATIONS

ACASI	Audio Computer Assisted Interviews
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ARV	Antiretroviral
ART	Antiretroviral therapy
AUDIT C	Alcohol Use Disorders Identification Test
AZT	Azidothymidine
CDC	United States Centres for Disease Control and Prevention
CHCT	Couple HIV Counselling and Testing
CVCT	Couple Voluntary HIV Counselling and Testing
DHS	Demographic and Health Survey
FDA	United States Food and Drug Administration
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
INA	Influence Network Agent
LSTM	Liverpool School of Tropical Medicine
MMWR	Morbidity and Mortality Weekly Report
NACOSA	National AIDS Coordinating Committee of South Africa
NGO	Non-governmental organisation
OR	Odds ratio
PIP	Partners in Prevention
PLWA	People living with HIV/AIDS
PMTCT	Prevention of Mother-to-Child Transmission
RZHRG	Rwanda Zambia HIV Research Group
SA	South Africa
SANAC	South African National Aids Council
SSA	Sub-Saharan Africa
STD	Sexually transmitted disease
STI	Sexually transmitted infection
TDIB	Traits-Desires-Intentions-Behaviour
UCT	University of Cape Town
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS

USAID	United States Agency for International Development
VCT	Voluntary HIV counselling and testing
WB	Western Blot
WHO	World Health Organisation

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SUMMARY

Introduction

Currently, HIV prevention strategies focus on promoting the modification of those individual behaviours that lead to an increase in susceptibility to and transmission of HIV infection. However, given that the incidence and prevalence of HIV continues to rise, it has been recognised that couple-based approaches might be more effective than addressing individuals only. Couple-focused approaches are therefore highly relevant, particularly in Sub-Saharan Africa, where the majority of HIV transmission occurs in heterosexual partnerships and in a context where sexual decisions are predominantly made by the men rather than the women.

The aim of this study was to identify and understand the characteristics of sexual partnerships and the factors that contribute to HIV transmission in couples. Once these are understood, it is possible to design couple-focused HIV prevention strategies that can be implemented in conjunction with existing strategies, so that HIV prevention is viewed as a collaborative effort between sexual partners.

The following were the objectives of the study:

1. To identify the experiences of couples and their perceptions of Couple HIV Counselling and Testing;
2. To establish the sociobehavioural risk factors for HIV status in couples;
3. To determine the predictors of fertility desire among couples and how these desires may be influenced by knowledge of HIV status;
4. To establish the self-reported management of STIs and the partner notification practices of couples; and
5. To determine the interpartner reliability of self-reporting of sexual and other behaviours.

Methods

A combination of qualitative and quantitative methods was used in the study. With regard to the quantitative component of the study, a cross-sectional study was conducted, using structured interviewer-administered questionnaires among couples who were attending Couple HIV Counselling and Testing (CHCT) at the research clinic. In the first part of the quantitative study, each member of the couple was separately asked a series of questions, prior to HIV counselling and testing. This was followed by the CHCT session. Thereafter, separate interviewer-administered exit interviews were conducted for each member of the couple. All couples were then invited to return to the research centre for a follow-up interview at least one month after the CHCT session. At the follow-up visit, again interviewer-administered interviews were conducted for each member of the couple. Data collected using the structured questionnaires were analysed using the STATA® version 10 statistical package.

With regard to the qualitative component of the study, in-depth interviews were done with 27 couples. These 27 couples included 6 HIV concordant negative couples, 5 HIV concordant positive couples, 10 HIV serodiscordant couples, and 6 couples who were initially serodiscordant until the HIV negative partner seroconverted during the study follow-up. The qualitative interviews explored the couples' experiences of the CHCT process as well as the influence of their HIV status on fertility desires. Domain analysis was used to analyse the data from the qualitative interviews.

Results

It was found that contextual factors (such as the community perceptions and the community levels of HIV/AIDS-related stigma) strongly influenced the couples' decision to undergo HIV testing. Interestingly, the experiences of couples in the CHCT process were predominantly positive, regardless of the resultant couple HIV status. The assurance of HIV test result confidentiality from the counsellors and other research clinic staff was highly appreciated.

Overall, the HIV prevalence in the study sample was 30% (24% in men and 35% in the female participants). Of the 600 couples tested for HIV, 354 (59%) were HIV concordant negative, 136 (23%) were HIV serodiscordant and 110 (18%) were HIV

concordant positive. Of those who were HIV serodiscordant, 101 (74%) were couples in which the HIV positive partner was female, while 35 (26%) had HIV positive males. In the multivariate analysis, it was found that concordant positive couples tended to have a greater age difference, to live together and to be both unemployed than was the case in the other 2 groups of couples.

Post-test risk reduction uptake was high. At the follow-up interview, at least a month after the CHCT process, respondents reported that they had lowered their risk of becoming HIV positive by taking up risk reduction measures, that their communication had improved, and that there had been improvements in other aspects of life, such as a reduction in alcohol consumption. Results also show that, in general, very few couples discussed their fertility desires within their partnership. Almost all respondents indicated that both infertility and HIV infection were highly stigmatised conditions in the community. Therefore, very few HIV positive individuals would opt for voluntary childlessness as this would equally result in being stigmatised as was the case with infertile individuals or couples. Both males and females highlighted the double stigma of being childless and being HIV positive, in situations where HIV positive people chose not to have children. However, it was clear from the majority of respondents that factors such as community and family expectations as well as financial stability seemed to play a greater role in determining their fertility plans than did their own or their partner's HIV status.

Over 95% of both men and women had sought medical treatment for their recent STI episode. The most common source of such medical care for both men and women was the public sector clinic or day hospital. On further enquiry about the STI consultation session, it emerged that a partner notification note had been provided to about half of the respondents; of these, significantly more were males, that is more of the males had received the notes to notify their female partners. Discussion about STIs and HIV/STI risk reduction was more common among couples and individuals that were implementing other risk reduction measures such as using condoms and not consuming alcohol hazardously, and that had previously had an HIV test.

Overall, all couples had high levels of interpartner agreement on the more objective questions regarding whether they were married or living together. Moderate

agreement was obtained in response to the question whether they had ever used condoms in their relationship. When stratified by couple HIV status, the levels of agreement among the 3 groups of couples with respect to the various variables were similar. In general, in all couples there were high levels of agreement in response to questions regarding relationship status, but lower levels of agreement in response to questions regarding previous communication about fertility desires and about STI risk reduction. The age differences between partners, partner concurrency status, marital status and couple hazardous alcohol consumption status did not affect the level of interpartner agreements.

Conclusion

The study demonstrated some key points to consider in couple-based research.

Firstly, approaching couples as a unit is important both in research and in HIV prevention. However, couple-based research is quite complex because of the many variables involved; some of these are measurable (such as age difference), while others are immeasurable (such as strength of partnerships). These result in inter- and intra-couple variations that make each couple a unique entity and that make it almost impossible to make assumptions that couples sharing a common factor (such as HIV concordant negative couples) are a homogenous group. In addition to this complexity, interpartner reliability of reports is low on some variables, which affects the interpretation of the couples' data.

Secondly, the widespread promotion of CHCT needs to take into account the contextual factors and to destigmatise HIV in order to create an enabling opportunity and environment for couples to test for HIV together in order to optimise HIV prevention. It is critical to understand the factors that motivate couples to test so that appropriate promotional materials and messages can be developed. Lastly, the CHCT process, though focused only on HIV counselling and testing, must be able to address adequately the other facets of couples' lives, such as their fertility desires in the face of societal stigma associated with childlessness and STI management in partners, both of which affect HIV prevention.

The findings from this thesis reinforce the realisation that communication between sexual partners is essential for the uptake of CHCT and this realisation could extend to many of the other HIV prevention interventions. Therefore, CHCT implementation might result in less than optimal uptake if some efforts are not invested into intervention uptake feasibility (e.g. by devising ways of promoting couple dialogue).

The implication of the thesis findings for public health practice is that it is vital to understand the potential feasibility of the CHCT strategy within the South African setting. In addition, it highlights the importance of programme integration, particularly with regard to integrating CHCT with family planning, antenatal care, and other health and social services.

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CHAPTER 1: INTRODUCTION

The human immunodeficiency virus (HIV) causes the acquired immunodeficiency syndrome (AIDS), which has adversely affected the lives of many people throughout the world, particularly in Sub Saharan Africa (SSA). The impact of this pandemic on the health, economic growth and development of many countries has been profound, particularly in SSA, which is the worst affected region in the world. The former Joint United Nations Programme on HIV/AIDS (UNAIDS) executive director has stated that HIV is capable of claiming more victims in southern Africa than any man-made catastrophe or any natural disaster.¹ Since the first AIDS cases were reported in 1981, more than 25 million people have died of AIDS-related illnesses worldwide.

Although the extent and impact of the HIV pandemic varies both across countries and within them, the common opinion is that, in the absence of effective HIV prevention, treatment and care it will not only continue to spread, but it could also offset all the improvements in the public health approach to communicable diseases gained over the past decades. Encouraging developments have been the advent of combination antiretroviral therapy (ART), which has resulted in improved life expectancy and better quality of life for HIV infected individuals who initiate this therapy. However, despite efforts over the years, no efficient vaccine has been found, and until there is a safe and effective vaccine or cure for HIV, the primary approach will be to focus on the application of behavioural and other interventions to curb the HIV epidemic.

1.1 HIV transmission

Transmission of HIV can occur through sexual intercourse (heterosexual or homosexual), perinatal transmission from mother to child (during pregnancy, at delivery or during breastfeeding), or through blood transfusion and transfusion of

¹ Dr Peter Piot, quoted in Los Angeles Times - Tuesday, December 1, 1998, 'Southern Africa Faces 'Disaster' as AIDS Spreads', Report by: Dean E. Murphy, Times Staff Writer

blood products. In terms of the global number of cases, the major mode of transmission is heterosexual.

There are different probabilities of HIV transmission for the different routes of transmission, and these are summarised in Table 1-1 .

Table 1-1: Probabilities of HIV transmission per contact

	Mode of transmission	Probability²
1	Sexual Intercourse	
a	Penile-vaginal intercourse	
i	Female to male	0.38% per act (95% CI 0.13-1.10) (Boily et al., 2009)
ii	Male to female	0.30% per act (95% CI 0.14-0.63) (Boily et al., 2009)
b	Penile-anal intercourse	
i	Insertive	0.06% (Vittinghoff et al., 1999)
ii	Receptive	1.7% per act (95% CI 0.3-8.9) (Boily et al., 2009)
2	Mother to child transmission	The estimated RISK of infection (De Cock et al., 2000) is
	a) During pregnancy	a) 5 - 10% during pregnancy
	b) At delivery	b) 10 - 20% during labour
	c) During breastfeeding	c) 10 - 20% during breastfeeding
3	Exposure to blood and blood products	
a	Blood transfusion	92.5% (95% CI, 89.0-96.1%) (Baggaley et al., 2006)
b	Percutaneous exposure	0.23% (95% CI, 0.00-0.46%) (Baggaley et al., 2006)

Many factors affect the HIV transmission probabilities among heterosexuals. Broadly speaking, they can be divided into factors relating to the host, and factors relating to the susceptible individual. The former include biological factors, such as: the HIV viral load (Quinn et al., 2000) and the presence or absence of sexually transmitted infections (STIs). In the susceptible individual, some of the factors that are important are, among others, the presence or absence of STIs, and the circumcision status of the man. Per-sexual act transmission probability also varies based on whether the HIV positive partner is acutely or chronically infected with HIV (Pinkerton, 2008). Furthermore, behavioural factors also influence this HIV transmission probability, such as condom use and concurrency of sexual partners, among others.

² Various other factors affect transmission probability per individual sex act, such as HIV viral load, presence of STIs, male circumcision status etc; therefore, the presented probability is an approximate measure and not a fixed value, as this will be context-specific. In addition, the presented probabilities are in the absence of any intervention.

1.2 HIV epidemiology and burden of disease

1.2.1 Global statistics

In 2008, the AIDS epidemic claimed an estimated 2.0 million lives globally (UNAIDS, 2009). More than two thirds of these deaths occurred in SSA, where 10% of the world's population live. UNAIDS (2009) further reports that, in the same year, about 2.7 million people acquired the virus, thus bringing to 33.4 million the estimated number of people living with the HIV virus. About 67% of these people live in SSA. Approximately 45% of the new infections in adults were young people aged 15 to 24 years (UNAIDS, 2008). Women in this region are disproportionately more affected than men are (UNAIDS, 2008), with women accounting for 60% of those infected with HIV in SSA.

1.2.2 South African statistics

South Africa (SA) is one of the worst affected countries in the world, with the highest number of people living with HIV/AIDS (UNAIDS, 2008). It is estimated that about 5.5 million South Africans are currently infected with HIV, which is the largest number of HIV infections in any country (UNAIDS, 2008). Routine antenatal data collected in SA during 2005 have shown an HIV prevalence of 30% (CI 29% - 31%) among pregnant women (Department of Health, 2006); three years later, in 2008 this prevalence was 29% (CI 29% - 30%) (Department of Health, 2009). In SA, as is the case in SSA, there is a disproportionate HIV burden among women particularly young women (15-24 years old). These account for 90% of new infections in SA (Rehle et al., 2007).

The number of people living with AIDS (PLWA) in SA represents a quarter of the disease burden in the entire region of SSA and about one sixth of the global burden of HIV-related disease (Karim et al., 2009). The national HIV prevalence in SA is 10.6% (Statistics South Africa, 2009). This varies by province, with the lowest prevalence in the Western Cape (3.8%) and the highest in KwaZulu-Natal (>15%). The total new HIV infections in SA for 2009 were estimated to be 413 000, which included 59 000 among children (Statistics South Africa, 2009).

1.3 HIV prevention

1.3.1 Global commitment to HIV prevention

The study of the epidemiology of HIV plays an important role in curbing the spread of the HIV/AIDS pandemic. As more information is obtained about the distribution and the determinants of the HIV epidemic, new prevention interventions are developed and implemented. These can then be tailor-made to meet the various new challenges and to bridge the emerging gaps in response to the epidemic. Because of the complexity of the socio-behavioural and biological factors that lead to HIV transmission, various prevention efforts are being implemented concurrently in many places. In SSA, prevention remains a priority in tackling the HIV/AIDS pandemic. Specifically, the prevention strategies need to be cost-effective, sustainable and acceptable to the communities, if desirable behavioural outcomes are to be achieved.

Attempts are being made throughout the world to curb the HIV/AIDS epidemic. In 2000, the United Nations (UN) proposed and formulated 8 so-called Millennium Development Goals aimed at building a safer and more equitable, poverty-free world. In recognition and acknowledgement of the burden of disease due to HIV, the 6th goal entails the combating of HIV/AIDS, malaria and other diseases (UN, 2001). Part of this goal is to halt or reverse the spread of HIV and to ensure universal access to antiretroviral (ARV) treatment. Most world governments have developed and published policy guidelines that guide national responses to the HIV epidemic. Many governments have also commenced and are committed to the roll-out of anti-retroviral drugs. While this is a significant step in mitigating the effects of the HIV pandemic, there is still an urgent need to upgrade, supplement and improve the current HIV prevention strategies.

In SSA unsafe sexual practices are responsible for the majority of HIV infections (WHO, 2003a). This implies that safer sex promotion should remain an important feature of the HIV prevention programmes in SSA (WHO, 2003a). Both historically and currently, prevention strategies have focused on promoting safer sex by modifying the individual behaviours that increase susceptibility to or transmission of HIV infection. However, as the prevalence of HIV/AIDS continues

to rise, it has been recognised that partner-based approaches, involving both members of a couple simultaneously wherever feasible, regarding safe sex and risk reduction may be more effective than addressing individuals (Jones et al., 2005; Marston & King, 2006; Painter, 2001). This is because the majority of HIV transmission in Sub Saharan Africa occurs in HIV serodiscordant heterosexual partnerships (WHO, 2003a).

HIV serodiscordance means that one of the partners is HIV positive, whereas the other is HIV negative. A few studies in various countries in Africa, including in SA, have shown that the prevalence of HIV serodiscordance among couples is high (Lurie et al., 2003). In fact, it has been estimated that, in some SSA countries, over 50% of new infections in heterosexual adults occur within a marriage or within a cohabitation partnership (Dunkle et al., 2008). This clearly shows that the current approach of encouraging safer sex should prioritize *partnerships*, as it is within these that the bulk of HIV transmission actually occurs.

1.3.2 HIV testing as a cornerstone of HIV prevention

The value of HIV testing is well documented in the literature (De Cock et al., 2003). HIV testing is undoubtedly the cornerstone of HIV prevention for various reasons. It results in the individual becoming aware of their HIV status and therefore taking appropriate actions to manage this. In the case of individuals who are HIV negative, the priority would be to maintain this status by implementing the appropriate risk reduction behaviour. In the case of individuals who test HIV positive, this informs decisions such as risk reduction uptake to prevent HIV transmission to HIV negative sexual partners, and to prevent HIV superinfection in the self. It also informs decisions, such as joining the ART or prevention of mother-to-child transmission (PMTCT) programmes or prophylactic treatment programmes, as appropriate.

1.4 Research Problem

Despite widespread application of individual-based HIV risk reduction prevention strategies, the HIV epidemic continues to spread. Individual efforts are frequently hampered by the fact that individual knowledge and will-power are often

insufficient to reduce risks within a sexual partnership because of various factors. The most important of these is the cooperation of the sexual partner. As a result, creative ways of developing and promoting couple-based HIV prevention interventions need to be devised.

1.5 Research Rationale

The literature review in the next chapter shows that heterosexual transmission of HIV accounts for over 50% of HIV transmission in SSA. Most prevention strategies focus on modification of individual behaviours, and thus target the individual in HIV prevention programmes. A number of studies have indicated the recognition of partnerships as a more effective strategy. One of the ways of addressing partners is by promoting couple HIV counselling and testing (CHCT) as an intervention strategy. Research in some African countries has been done to assess the acceptability and effectiveness of the CHCT strategy, and has found that this approach is advantageous and favourable (Jones et al., 2005; Coates et al., 2008; Olley et al., 2005; Sweat et al., 2000).

However, to deal effectively with couples and address their needs, more information must still be obtained. There are still gaps with regard to the socio-behavioural characteristics of sexual partnerships as risk factors for HIV infection. For example, comparative studies must be done on HIV concordant positive, HIV concordant negative and HIV serodiscordant couples, and the socio-behavioural factors that differentiate these couples from each other must be determined. It must also be assessed whether these differences are useful and sufficiently significant to warrant attention in HIV prevention.

In addition, evaluation of the various stages of the CHCT process from the couple motivating factors to the partnership behavioural outcomes and the determinants of these outcomes is required. Couple experiences of the CHCT process and the changes that couples have to implement after finding out their HIV status and identifying their unmet needs in this adjustment, need more exploration.

One of the most important decisions that couples have to make is the plan whether to have children in the future in the face of the risk of HIV transmission in serodiscordant partnerships. At present, there is limited information on the influence of a couple's HIV status on the desire to have children. Obtaining responses from and perspectives of both the male partner and the female partner on this issue, namely, the factors that influence fertility desire and what role the couple's HIV status plays in this decision, is essential.

In addition, STI management has been noted to be instrumental in preventing the acquisition and transmission of HIV. Studies where sexual partners are the respondents present a unique opportunity of establishing the STI treatment seeking behaviours of both partners in a sexual partnership. The self-reported STI treatment seeking behaviours of partners can then be compared. Differences in the effectiveness of partner notification, for instance, if the male or the female partner is the first one to be diagnosed with an STI, can also be explored.

Almost all the information obtained in socio-behavioural research is based on self-reports. However, self-reported information is fraught with bias. Respondents might give inaccurate information because of many factors (such as lack of knowledge, shame, and a sense of guilt, among others). It is important to consider the varying responses that partners give to questions on sexual practices and other social behaviours, especially where it is expected that the couple would report the same information. It is also important to determine why such variations exist.

1.6 Aim of the study

The study aims to obtain an understanding of some of the socio-behavioural factors that influence HIV transmission in couples and the characteristics of the sexual partnerships that warrant greater focus on them as effective HIV prevention units.

1.7 Specific objectives

1. To identify the experiences of couples and their perceptions of Couple HIV Counselling and Testing;
2. To establish the socio-behavioural risk factors for HIV status in couples;
3. To determine the predictors of fertility desire among couples and how these desires may be influenced by knowledge of HIV status;
4. To establish the self-reported management of STIs and the partner notification practices of couples; and
5. To determine the interpartner reliability of self-reporting of sexual and other behaviours.

1.8 Dissertation structure

This thesis is structured as follows:

Chapter 1 has provided an outline of the rationale and the objectives of the thesis.

Chapter 2 describes the evolution of voluntary HIV counselling and testing (VCT), before discussing CHCT and the possible beneficial effects of the CHCT strategy. A review of the literature on fertility desires (and how HIV affects this), partner notification practices in STI management and the reliability of interpartner reports is presented.

Chapter 3 summarises the methods of this study by outlining the population, the sampling and the data management.

Chapter 4 presents the results of this thesis according to the thesis objectives.

Chapter 5 highlights and examines the key findings and compares these with the results of other or similar studies in the field of HIV prevention.

Chapter 6 presents the public health implications of the study and the thesis conclusion.

CHAPTER 2: LITERATURE REVIEW

This chapter starts with a brief description of the evolution of the individual VCT process on which the couple HIV counselling and testing (CHCT) process is based. The advantages of CHCT over individual VCT are discussed and, in addition, the advantages of partner-based approaches in HIV prevention are explored. The literature is reviewed with regard to the other aspects of couples' lives that affect HIV prevention, such as the influence of HIV status on fertility desires, and a review of the partner notification component of STI management. Finally, the literature review considers the reliability of interpartner reports and the determinants of this.

2.1 HIV prevention

UNAIDS has noted that the key to curbing and reversing the HIV epidemic lies in preventing new HIV infections (UNAIDS, 2008). Although ongoing measurements of HIV incidence are not feasible in many of the SSA countries, a few countries or regions within countries have reported a decline in the incidence of HIV/AIDS (Lopman & Gregson, 2008). Several factors have been identified as contributing to the decline of seroincidence in various settings. Some of these are: early national responses and political commitment, multisectorial response, emphasis on targeting youths and empowering women and girls, social marketing of condoms, role of people living with HIV and AIDS in combating of stigmatisation and discrimination, a strong VCT programme, effective information and education campaigns, committed non-governmental organisation (NGO) responses and the early mobilisation of religious and community leaders, among others. All of these interventions have led to the desired outcome of changing behaviour to some extent. These few examples of the decline of HIV incidence provide evidence that the HIV epidemic is responsive to human intervention.

One of the earliest interventions in the HIV epidemic was the introduction of VCT. In terms of this process, individuals willingly choose to find out their HIV status by means of a service package that consists of: pre-test counselling, informed consent, HIV test and post-test counselling.

2.2 Voluntary HIV Counselling and Testing

VCT is important as it enables individuals to ascertain their HIV status. This in turn allows HIV positive individuals to enter the relevant programmes, such as antiretroviral therapy (ART) programmes and PMTCT programmes, and to make lifestyle changes, such as the prompt treatment of opportunistic infections and the use of condoms to prevent HIV transmission to future partners and re-infection. Enabling people to know their HIV status has been described by the WHO as one of the strategies that it is critical for health sectors to focus on if they are to be successful in achieving the goal of universal access to ART (WHO, UNAIDS & UNICEF, 2008). VCT is still one of the activities that is promoted and considered central in HIV prevention.

2.2.1 Evolution of VCT

In order to understand the existence and evolution of VCT, the history of the first global response to the HIV epidemic is briefly summarised.

The initial publicity surrounding HIV was laden with fear and uncertainty, which brought about severe stigmatisation and discrimination of those who were found to be HIV positive. There was also a general stratification of people into high-risk and low-risk groups. The high-risk group included homosexual men and intravenous drug users. Individuals were also categorised as 'victims' who had become infected with HIV/AIDS by accident (such as haemophiliacs) and those who were 'not victims' (such as known intravenous drug users or individuals with multiple sex partners); further stigmatising HIV infection.

The United States Food and Drug Administration (FDA) approved the first HIV antibody test in 1985. At first, this was mainly used to test blood and blood products, particularly to prevent HIV transmission to haemophiliacs and other recipients of blood products. The issue of most concern before the widespread use of the HIV tests was the confidentiality of the results. In 1986, there was a suggestion that safeguards should be implemented too, such as informed consent, counselling, confidentiality, anonymity and ensuring that the test results

are not disseminated or divulged (CDC, 1986). This was the foundation of the formulation of the VCT process. Therefore, unlike other public health interventions that are usually developed as a result of evidence-based public health research prior to implementation, the VCT process was a public health measure that was mainly informed by the human rights paradigm, as was the early response to the epidemic, which was informed by the *human rights* discourse, rather than by the *public health* discourse (Gostin, 2006). Human rights and health are two concepts that are in synergy with the ultimate goal of having a healthy society (Mann et al., 1999). The link between the two is bidirectional, in that violations of human rights will have health consequences, and poorly developed or badly implemented health policies can actually violate human rights. The history of HIV prevention, particularly as it pertains to VCT, shows the close link between these two, with the predominant factor in the case of VCT development probably being the human rights standpoint.

The United States Centers for Disease Control and Prevention (CDC) developed the first guidelines for VCT in 1986 (CDC, 1986). The main purpose of these first guidelines was to identify individuals who were at highest risk of becoming HIV positive. There were eight categories, which included homosexual and bisexual men, prostitutes and haemophiliacs (CDC, 1986). These were to be offered counselling and testing for HIV. The emphasis was on the dissemination of information about HIV and the facilitation of behaviour change to interrupt the chain of transmission. Those found to be HIV positive would be offered counselling to prevent further transmission to future sexual partners. The other important aim of these first guidelines was the screening of blood and blood products to prevent transmission to recipients of these. The importance of always including counselling in the HIV testing package was emphasised in the revised guidelines published in 1987 (CDC, 1987).

Since there was no medical care available in the form of ART, the main purpose of HIV testing was to identify those who were HIV positive, so that these could be targeted to prevent HIV transmission to the HIV negative people. In order to make this more effective, the tested people also received counselling. Although people were categorised into risk groups, HIV testing could not be made

mandatory in high-risk groups because of the stigma and discrimination associated with the condition. Thus, the voluntary nature of the test was emphasised to prevent stigmatisation and human rights violations associated with knowledge of HIV status.

With the discovery of azidothymidine (AZT) in 1987, VCT continued and its aim was broadened to identify people needing treatment. Despite the limited availability of treatment, stigmatisation continued within the communities. In 1991, it was recognised that the use of AZT reduced HIV transmission from mother to child during the perinatal period. This added a new dimension to the usefulness of HIV testing. The additional aim was thus to encourage women to test for HIV, so that they could make informed choices about having children and participate in programmes aimed at preventing mother to child transmission of HIV (CDC, 1994; Connor et al., 1994; Connor & Mofenson, 1995). In 1993, the CDC released technical guidelines on HIV counselling in an effort to improve the quality of the VCT process. The focus was on the dissemination of client relevant and tailor-made HIV prevention messages after a risk assessment (CDC, 1993). Risk reduction counselling was to be provided to all people who chose to test for HIV as an integral part of the VCT package.

Counselling was labour intensive, however, and thus its usefulness was questioned. Questions have also arisen as to whether people do actually change their behaviour after they have been counselled about their HIV status (Sherr et al., 2007). In the face of these questions, research into these topics indicated that counselling was an essential component of HIV testing that should not be removed (Meursing & Sibindi, 2000). Evidence of positive behaviour change in VCT attendees has been obtained and this is attributed to the pre- and post-test counselling (Cleary et al., 1991; Mola et al., 2006). Despite this evidence, the effectiveness of pre- and post-test counselling with respect to HIV negative people was questionable, with few findings of increased high risk behaviour among this HIV negative population once they knew their HIV status (Sherr et al., 2007).

The initial HIV tests that were used in the VCT process had a turnaround time of more than a day for the results to be returned. This meant that volunteers needed to return to the VCT testing facility to obtain their test results and receive post-test counselling. The first rapid HIV tests using finger pricks became available in 2002. This meant that people could receive the pre- and post-test counselling on the same day. This raised concerns about the effectiveness of counselling that was conducted on a single day compared to the older method of attending two counselling sessions on different days because of the longer turnaround time for the HIV test results. However, studies that compared the effects of one-day versus two-day counselling sessions confirmed that there was no significant difference in the incidence of STIs (as a proxy measure for lack of risk reduction) between those who had received one-day counselling compared to those who had received a two-day counselling session after a one-year follow-up period (Metcalf et al., 2005).

In addition to the convenience of rapid HIV antibody tests, in recent years the use of home-based kits for self-testing of HIV has been suggested. The concerns and controversies surrounding these have been highlighted (Spielberg et al., 2004; Walensky & Paltiel, 2006). These include false HIV negative results in people who test themselves immediately after a high-risk sexual encounter whilst they are still in the window period, that is the period before the antibodies are detected in the blood. This may result in continued high risk behaviour or transmission of the virus during one of the most infectious stages of the HIV disease. There is also the problem of false positives in low HIV prevalence settings, as well as the concern that the link between the HIV disease and the care facilities would be cut, and that conducting these tests privately at home could exacerbate HIV-related stigmatisation. It also eliminates the essential pre- and post-test counselling component.

Table 2-1 summarises some of the changes in HIV knowledge and programmes to reduce its incidence since the onset of the HIV epidemic.

Table 2-1: The changing course of VCT over time

Period	Pre 1985	1986 - 1992	1993- 2001	2001 to date
Transmission knowledge	Poor knowledge of HIV transmission	Better knowledge of HIV transmission; Recognition of MTCT	Good knowledge of HIV transmission	Good knowledge of HIV transmission
HIV test type & availability	No HIV tests; Diagnosis based on clinical presentation	First antibody test in 1985; Western Blot (WB) confirmation	Antibody tests; WB confirmation Viral load tests	Antibody tests; Rapid antibody tests; Oral fluid test; WB confirmation Viral load tests
Target population for VCT		Defined high risk groups and pregnant women	Defined high risk groups and pregnant women	All
Aim of VCT		1985 - protection of blood supply; 1987 - prevention of transmission	1993 - client-centred counselling; 1995 - prevention of transmission and PMTCT; 2001 - HIV test as routine pre-natal care Link HIV positive people to available ART care	2005 - Routine opt-out HIV testing introduced Link HIV positive people to available ART care PMTCT
ART availability		Availability of AZT in developing countries in 1986	Availability of AZT and development of other classes of drugs	Multiple combination ART available

2.2.2 Evolution of VCT in SA

In SA, there have been a few milestones in the fight against HIV/AIDS. One of the earliest developments was the formation of the National AIDS Coordinating Committee of South Africa (NACOSA) in 1992; they developed a National AIDS Strategy that highlighted the need for HIV prevention, research, counselling and human rights, among others. The National AIDS plan was formulated in 1994. There were many controversies, however, as well as a lack of political commitment from leadership over many years, which delayed the country's progress in curbing the HIV epidemic (Karim et al., 2009). Currently, there are a number of campaigns, run by both government and NGOs, to raise HIV/AIDS awareness and encourage VCT uptake. Like NGO-associated VCT centres, the majority of government health facilities provide a free VCT service. Despite this, only about 7% of the population are tested for HIV each year in SA (SA Department of Health, 2007), and it has been estimated that only 20% of PLWHA are actually aware of their HIV status.

Recent reports indicate that an increase in VCT uptake has been noted in South Africa. Results have indicated an increase from 18.9% in 2002 to 30.3% in 2005 and 51% in 2008 among about 23 000 respondents in a South African National HIV Prevalence, Incidence, Behaviour and Communication Survey conducted in 2002, 2005 and 2008 (Shisana et al., 2009). In addition, results from the 2008 survey indicate that there was doubling of the percentage of people who were aware of their HIV status from 11.9% in 2005 to 24.7% in 2008. This increase was seen both among males and females (Shisana et al., 2009).

2.2.3 Evaluation of VCT

Many aspects of VCT such as cost-effectiveness, acceptability and effectiveness have been evaluated within the African context.

VCT has been shown to be generally acceptable (Chirawu et al., 2010). There is furthermore evidence that VCT is a cost-effective HIV prevention strategy (Sweat et al., 2000). The benefits of individual VCT are well documented. Arthur et al. (2007) conducted a study in Kenya, which assessed the changes in behaviour of VCT clients before and after the intervention. At follow-up, it was found that there was a reduction in multiple partners (16% to 6%), a reduction in STI symptoms (40% to 15%) and a reduction in unprotected sex (95% to 89%). Half of those who indicated that they would be using condoms actually did so. Furthermore, VCT did not result in an increase in life events (such as physical abuse, breakdown of relationship, etc), regardless of the test result. Another example is a study done by Mola et al. (2006) to determine the effectiveness of VCT in Mozambique. More men and women who had undergone VCT used condoms over time than those who did not receive VCT; this was particularly the case for the HIV positive population. To address a similar research question, Cremin et al. (2009) did a study in Eastern Zimbabwe in an open cohort of over 15 000 individuals, comparing the behaviour before and after receiving VCT. HIV positive women enhanced their risk reduction behaviour more significantly. There were general reductions in the formation of new partnerships. Fewer changes were reported in the men.

In another post-VCT behaviour evaluation, Lifshay et al. (2009) highlight the importance of involving HIV positive people in HIV prevention. They conducted a qualitative study in Uganda involving in-depth interviews with 37 HIV positive men and women, enquiring about changes in sexual activity, number of partners and condom use since testing HIV positive and motivations and barriers and facilitators to making behaviour changes. Their study results indicated that HIV positive people often decrease their sex frequency and number of partners and increase their use of condoms. Males found it easier to be consistent users of condoms in this study, but females reported that the reduced sexual pleasure of their sexual partners made them unwilling to use them. Power dynamics made men decide against using condoms thus becoming at risk themselves.

The performance of HIV rapid tests was associated with increases in the receipt of both HIV positive and HIV negative results compared to the older method that had a longer turnaround time before the results were obtained (Hutchinson et al., 2006). Furthermore, an evaluation of people's personal experiences of the VCT process has been done. In some of these evaluations VCT attendants reported that they had obtained additional benefits from their visits to the VCT clinic. For example, in addition to making behavioural changes that were directly related to HIV, they also reported making other behavioural improvements, such as reducing alcohol use (Sangiwa et al., 2000). Overall satisfaction was reported with the way in which VCT was conducted (Sethosa and Peltzer, 2005).

Despite its importance, VCT uptake is generally low in developing countries because of various factors, such as a lack of information on its usefulness in HIV prevention, negative attitudes towards HIV, and AIDS related stigmatisation (Kalichman & Simbayi, 2003). From the onset of the HIV epidemic, VCT uptake has been lower than optimal. It was realised that even the availability of ART was not a true motivation for increased VCT uptake, which implies that people do not want to have themselves tested because they do not want to know whether they are HIV infected or not, even though treatment is available. Global initiatives proposed by the WHO, such as universal access to ART, are highly dependent on VCT uptake. Universal access to ART cannot be achieved without increasing

VCT uptake; and conversely increasing VCT provision and encouraging VCT uptake needs to be done in parallel with ensuring universal access to ART.

Due to the generally low VCT uptake, the recent guidance issued by the WHO and UNAIDS recommends a routine “opt-out” approach to provider-initiated HIV testing and counselling (UNAIDS, WHO, 2007). Some researchers have opposed the opt-out option, as they fear that it might do more harm than good by perpetuating HIV/AIDS related stigmatisation; furthermore, since the opt-out option is offered in a clinical setting, there is limited counselling or one-sided didactic information is given, which will not be effective in changing behaviour (Kippax, 2006). The opt-out option is currently in place in some SSA countries, such as Botswana and this has led to rapid increases in HIV testing uptake, with almost half of adults reporting that they had been tested for HIV in a recent population based study in Botswana (Steen et al., 2007; Weiser et al., 2006).

There are also arguments that the initial restraints put on HIV management, such as the requirement that the test must be taken voluntarily and that written consent must be given, were mainly implemented because of a fear of stigmatisation associated with the disease; however, the availability of ART should change this way of thinking, as the benefits of routine HIV testing are known (Bayer and Fairchild, 2006; Gostin, 2006). The widespread availability of ART (although to a lesser extent in developing countries) has led to the notion that a paradigm shift in dealing with HIV must still occur with increased openness and reduction in societal stigmatisation.

2.2.4 Individual VCT and partner notification

Since the inception of VCT, the focus has been on counselling and testing individuals. An important subject is sexual partner involvement in the knowledge of HIV status. Because the predominant form of transmission of the disease is sexual transmission, it was suggested early on that the same partner notification procedures should be used for HIV as are already used with other classic sexually transmitted infections. These procedures include the provision of a partner notification note or alternatively the verbal instruction to inform the sexual partner/s about the need for testing. The view was that the efficacy of

interventions would be greatly improved if the partner had to be notified, as was already the case with any standard communicable disease (Potterat et al., 1989). The main objections to this were: expense, limited use of partner notification in the absence of treatment (prior to the availability of ART), and stigmatisation. Partner notification and contact tracing is very effective for other interventions and in other settings, e.g. in the management of tuberculosis, particularly childhood TB. The first CDC guidelines encouraged infected people to inform their sexual partners and to refer them for testing (CDC, 1986). This was difficult to implement, however, because of the confidentiality issues surrounding HIV. The revised CDC guidelines in 1987 suggested premarital HIV testing based on the prevalence of HIV in the various regions (CDC, 1987). This too was difficult to implement because of the confidentiality around HIV testing.

When individuals attend VCT, they are often burdened with the need to disclose their HIV status to their sexual partners. Individual VCT might also result in information asymmetry, in which one of the partners is familiar with risk reduction information but unable to communicate this to their partner. HIV status disclosure is essential, though, for the uptake of risk reduction activities, particularly condom use. Rates of HIV status disclosure to sexual partners are noted to be generally low. A study by Niccolai et al. (1999) indicated that 23% of HIV positive people reported that they did not use condoms with partners to whom they had not disclosed their HIV status. The rates of HIV status disclosure in a study among 306 HIV positive women were as low as 18%, and only 8% used condoms with their sexual partners (Yacouba et al, 2001).

In general, there are higher rates of disclosure of negative HIV results than of HIV positive results (Maman et al., 2003). The average HIV status disclosure among women in Africa has been noted to be 52% (range 16–86%) (WHO, 2003b). Prior communication with sexual partners about the HIV test and older age or maturity of those who are tested, are some of the strong predictors of sero-status disclosure that were obtained in some studies done to ascertain such predictors. The question on whether there will be relationship breakdown post HIV status disclosure is complex as it has been noted that this is multifactorial (Ateka, 2006).

In 2005, the CDC released new guidelines with reinforced recommendations for partner counselling and referral. People who tested for HIV were to be encouraged to disclose their HIV status to spouses and to both current and previous partners. Health departments were encouraged to assist in the notification of partners, while still maintaining confidentiality in the process.

In both the historic and current VCT model, the role of disclosure to the sexual partners is left to the tested individual. Just as there is concern about the low rates of HIV status disclosure to sexual partners, there is much concern about the outcome of such disclosure. Studies on the outcomes of HIV status disclosure to sexual partners have focused on women's feelings and accounts, in particular on their experiences of gender-based violence. Very few studies have been done to assess male experiences. Some studies have shown low percentages (<5%) of negative reactions to HIV status disclosure (Maman et al., 2003). Globally, there are low rates of negative outcomes (less than 5%) among individuals who disclose their HIV status (WHO, 2003b). Some of the negative consequences noted were blame, anger, stigmatisation, depression and abandonment (WHO, 2003b).

In cases where HIV status disclosure did not lead to any adverse effects in the partnership, another problem arose. This was the fact that one partner's HIV status disclosure led to a situation of 'testing by proxy', whereby the partner assumed that they had the same status as their tested sexual partner (Morrill & Noland, 2006). This proved to be a misleading assumption, as there are cases where male and female partners have a different HIV status; this is referred to as HIV serodiscordance. There is evidence that HIV serodiscordance is common, with a prevalence of 21% obtained in a study done in KwaZulu-Natal province in South Africa (Lurie et al., 2003).

Another misleading assumption was described by Anglewicz et al. (2008) in a study in rural Malawi, which investigated how accurately married partners assessed their spouses' HIV status compared to the actual status, among 768 monogamous couples. Results indicated inaccurate assessments, often with overestimation of the spouse's HIV risk. Both men and women would

overestimate their own risk; reported perceived risk was significantly associated with suspected male infidelity. Anglewicz et al. (2008) concluded by suggesting the importance of CHCT for accurate knowledge of HIV status within a partnership to avoid the subjective assessments of HIV status, which might lead to a lack of uptake of risk reduction measures.

2.3 Couple HIV Counselling and Testing³

With the recognition of HIV serodiscordance and the fact that HIV transmission in Sub Saharan Africa has occurred predominantly in heterosexuals in stable partnerships, couple HIV counselling and testing (CHCT) is hypothesised to be a potentially effective strategy to fill in this gap in HIV prevention. In many settings where VCT is predominantly individual based, CHCT is a new HIV prevention strategy. Couples are encouraged to attend HIV counselling and testing together. In this way, and particularly in serodiscordant partnerships, seroconversion in the HIV negative partner can be prevented by the uptake of risk reduction measures (Carpenter et al., 1999). CHCT brings about a paradigm shift in HIV prevention. It is not necessarily more superior to the other current HIV prevention strategies in general, but in partnerships, where consensual sex is practised, it is thought to be advantageous, and it is certainly more effective and thus preferred (Painter, 2001).

The development of CHCT, like that of VCT, was informed by prevailing circumstances. Pioneering work with HIV serodiscordant couples in Zambia and Rwanda, showed that about 14% of the pregnant women who were attending follow-up sessions in research studies did not have the same HIV status as their partners, and soon a programme was started to counsel couples together (Bashyam, 2008). This resulted in the first officially recorded CHCT programme around which the current CHCT model above was developed.

³ In some settings, this process is referred to as couple voluntary counselling and testing (CVCT); in this thesis, however, the term Couple HIV Counselling and Testing (CHCT) will be used to refer to the same process.

In CHCT, couples as opposed to individuals volunteer for HIV counselling and testing. The couple undergoes pre-test counselling, HIV rapid tests, and post-test counselling together. After CHCT, the individual is thus not burdened with the need to disclose his or her results to the sexual partner. When couples attend CHCT, there are three possible HIV results: both could be HIV negative (which is referred to as HIV concordant negative), both could be positive (that is HIV concordant positive) and lastly, one of them could be HIV positive and the other HIV negative (known as HIV serodiscordance). Risk reduction uptake is particularly important in HIV serodiscordant couples.

Dunkle et al. (2008) analysed Demographic and Health Survey (DHS) data in Zambia and estimated that between 55% and 93% of new infections in cohabitating heterosexual partnerships occurred in serodiscordant relationships and between 60% and 94% in non-cohabitating partnerships. In their discussion, the authors estimate that an intervention that reduces heterosexual HIV transmission from 20% to 7% could avert between 36% and 60% heterosexually transmitted HIV; they suggested that couple based interventions therefore have a great potential for effectiveness.

Several studies have also shown that more safe sex is practised after partners find out that they are HIV serodiscordant, which confirms that CHCT facilitates the update of risk reduction measures between partners. For example, Jones et al. (2005) studied 180 HIV positive women in Zambia and assessed the impact that the male partner's participation in health education had on their sexual behaviour. Their study indicated that such participation resulted in more condom use, safer sex intentions and a reduction in alcohol use.

One of the earliest studies done to evaluate the effect of CHCT on condom use and seroconversion among HIV discordant couples in Africa (Allen et al., 1992) showed that the proportion of serodiscordant couples who used condoms increased from 4% to 57% after one year of follow-up. This finding suggests that CHCT might have beneficial effects.

Many studies have shown that CHCT is effective and recommend that it be more widely practised (Coates et al., 2008; Olley et al., 2005; Sweat et al., 2000). Studies have shown that the presence of male partners during HIV counselling improves the uptake and effectiveness of risk reduction messages (Allen et al., 2003; El-bassel et al., 2005; Jones et al., 2005). There is also evidence of increased condom use in couples once they are aware that they are serodiscordant. An example of this is clearly demonstrated in a study by Allen et al. (2003), whose results indicate that less than 3% of 963 discordant couples reported condom use prior to couple-based VCT; after they had ascertained their HIV status, this proportion increased sharply, with condom use reported in more than 80% of sexual acts.

It is important to note that, although CHCT removes one of the biggest hurdles to the adoption of risk reduction measures, that is that of HIV status disclosure, it is not the magic bullet in HIV prevention. This is because sustained behaviour change, and in particular continued risk reduction uptake in serodiscordant partnerships, is essential to ensure the effectiveness of this intervention. A few studies have assessed this. Skurnick et al. (1998), for example, did a cohort study in which they conducted follow-up interviews with 131 HIV serodiscordant couples six months after initial testing, recording their sexual practices at enrolment and 6 months afterwards. Their study showed initial reductions in sexual activity as well as increased condom use shortly after the couple first learnt of their serodiscordant status. At the end of the 6-month period, however, the proportion of those practising unsafe sex had increased and fewer couples were abstaining. Their conclusion was that it is difficult for couples to change their usual pattern of sexual behaviour, even if one partner is HIV positive. Similar findings have been obtained in other studies (DiFranceis et al., 2005). In another cross-sectional study, Buchacz et al. (2001) looked at inconsistent and infrequent condom use in HIV serodiscordant couples and the factors associated with this. Their findings indicated that inconsistent condom use was not associated with the gender of the infected partner or the duration of the relationship, but that it was associated with unemployment and a low level of education, among other factors. They suggested that the uptake of risk reduction measures could be improved if the risk reduction message was coupled with

improved socio-economic conditions. This literature cited above is from studies done in the United States. This presents a potential gap of assessment of the sustainability of behaviour change within the African setting.

These few studies above indicating a lack of sustained behaviour change do not compromise the usefulness of the CHCT process nor the anticipated impact on HIV prevention. Of note is that understanding of the risk of HIV transmission to the HIV negative partner is essential for sustained behaviour change in HIV serodiscordant couples. Therefore one of the most important determinants of sustained risk reduction measure uptake is that both partners must understand the concept of serodiscordance. Bunnell et al. (2005), for instance, in a qualitative study done in Uganda, showed that there are still many misconceptions about the explanations of HIV serodiscordance among the couples counselled and the counsellors themselves. They recommend the development of HIV counselling protocols that are easy to use, and that give a clear explanation for HIV serodiscordance and support for the risk reduction initiatives.

In other settings, such as in antenatal care, the role of male involvement in antenatal HIV testing was found to be beneficial (Baiden et al., 2005). In addition, studies on the effect of the partner being present in counselling sessions showed an increased uptake of Nevirapine and formula feeding among women in PMTCT programmes (Farquhar et al., 2004). Given the importance of collaborative efforts between partners in HIV prevention, it is crucial to promote couple focused HIV prevention in addition to current prevention measures. This approach would also necessitate defining the couple as an implementation and research entity, with a greater need to understand the unique needs of this entity.

2.4 The importance of partnership-based HIV prevention research

As stated earlier, in Sub Saharan Africa, heterosexual transmission in serodiscordant couples is the most common mode of HIV transmission (WHO, 2003a; De Walque, 2007). HIV, like other infections, has demonstrated the fact that there is a link of infection, which consists of an aetiological agent (HIV) being transmitted from the reservoir (HIV infected individual) to the susceptible host

(HIV uninfected individual). For any transmission event to occur there must be an inter-relationship between the reservoir and the susceptible host. The relationship can be between a man and a woman in a heterosexual serodiscordant partnership, or it can be man-to-man or woman-to-woman in a homosexual serodiscordant partnership. It can also be from a mother to her child in perinatal HIV transmission. In cases of accidental exposure, such as by means of blood transfusion, or occupational exposure, such as by means of needle-stick injuries, the same concept applies. Regardless of the situation being presented, the partnership is a necessary cause in the transmission of HIV. A number of interventions have been targeted at these various “partnerships” to prevent HIV transmission.

Given the importance of partnerships in HIV transmission and prevention, this study explores some of the important dyad⁴-related factors in HIV prevention. It is envisaged that the ‘dyad’ as a unit of HIV research would give comprehensive information that would inform HIV prevention programmes.

2.5 The couple as an intervention and research unit

2.5.1 Contribution of couples’ studies to HIV transmission knowledge

Previously, researchers have recognised the value of having couples as the study subjects in HIV research. Studies among serodiscordant couples have contributed valuable information to the level of knowledge with regard to HIV transmission. Some studies have been done from a biomedical perspective to calculate the probability of HIV transmission per sexual act (Gray et al., 2001). Others have been done to evaluate the effect of specific interventions, such as the role of acyclovir prophylaxis in HSV-2 suppression to prevent HIV transmission in serodiscordant couples (Lingappa et al., 2010). These two examples are among many that indicate the important input that research on couples has contributed to HIV transmission knowledge.

⁴ The word “dyad” comes from the Greek word “dyas”, which means the number two. Dyad can thus be used to refer to a pair of individuals. As a title of this thesis, dyad refers to the relationship between the male and the female who define themselves as a couple.

2.5.2 Contribution of couple data to HIV epidemiology

Knowledge of the impact of individual socio-behavioural characteristics on HIV transmission influences the design of relevant HIV prevention programmes. If information on the sexual risk behaviour patterns is available, this could aid in the development of public health programmes and interventions targeting those specific areas. This is because the social and behavioural characteristics of individuals have a direct impact on their health.

Globally, much research has been done on the individual socio-behavioural risk factors for HIV infection. Some of the socio-behavioural characteristics that have been shown to be determinants of individual HIV status are the following: age at sexual debut, number of sexual partners, concurrency, coital frequency, condom use, sexual practices such as anal sex, alcohol abuse and poverty (as indicated by the exchange of money or material goods for sex) (Dunkle et al., 2004). Biological factors such as HIV viral load, presence or absence of sexually transmitted infections and circumcision status in men affect the probability of HIV transmission too.

It can also be argued that, just as much as individual variables are important in determining the risk of HIV acquisition or transmission, it is equally important to determine the nature of the socio-behavioural characteristics of partnerships. This is because the social and behavioural characteristics of a couple have a direct impact on their health. There are questions as to whether partnerships, in which one or both members are infected with HIV, are different in some behavioural or social factors from partnerships in which neither partner is infected. Evaluating these differences is complex, as partnerships might have formed after the involved partners have already become HIV positive. However, despite this complexity, studies evaluating these differences are essential. One such study was a cross-sectional study done in Uganda to assess the socio-demographic, behavioural and biological risk factors in 49 concordant positive and 126 serodiscordant couples (Malamba et al., 2005). The study indicated that, as compared to HIV serodiscordant couples, HIV concordant positive couples

were more likely to be living together with their partner, to be uncircumcised or to have an uncircumcised male partner.

Further analysis of the socio-behavioural data from partnerships might be helpful in identifying important couple-level risk factors that might not be apparent in individual data. In addition, describing the characteristics of HIV serodiscordant and HIV concordant positive partnerships might help to identify which couple-related characteristics need consideration in couple focused interventions, such as CHCT.

The CHCT process can be hypothesised to have 3 key stages, namely: the motivation to have the HIV test, the experiences of the CHCT process and finally the behavioural outcome after CHCT. As illustrated in Figure 2-1, it is hypothesised that the characteristics of a couple directly influence each of these 3 stages. Examples of such characteristics are: the ages of the partners, the age difference between the partners, the duration of the partnership, the past social and sexual history, the marital status, the cohabitation status, the parity and concurrency of self or of the partner. It is also hypothesised that the couples' experiences in the CHCT session will have a direct, albeit independent, impact on the behavioural outcome. Behavioural outcome assessment is important for evaluation of the effectiveness of CHCT and other HIV prevention strategies.

In addition, Appendix 1 indicates two of the behavioural theories that could be used to explain CHCT uptake.

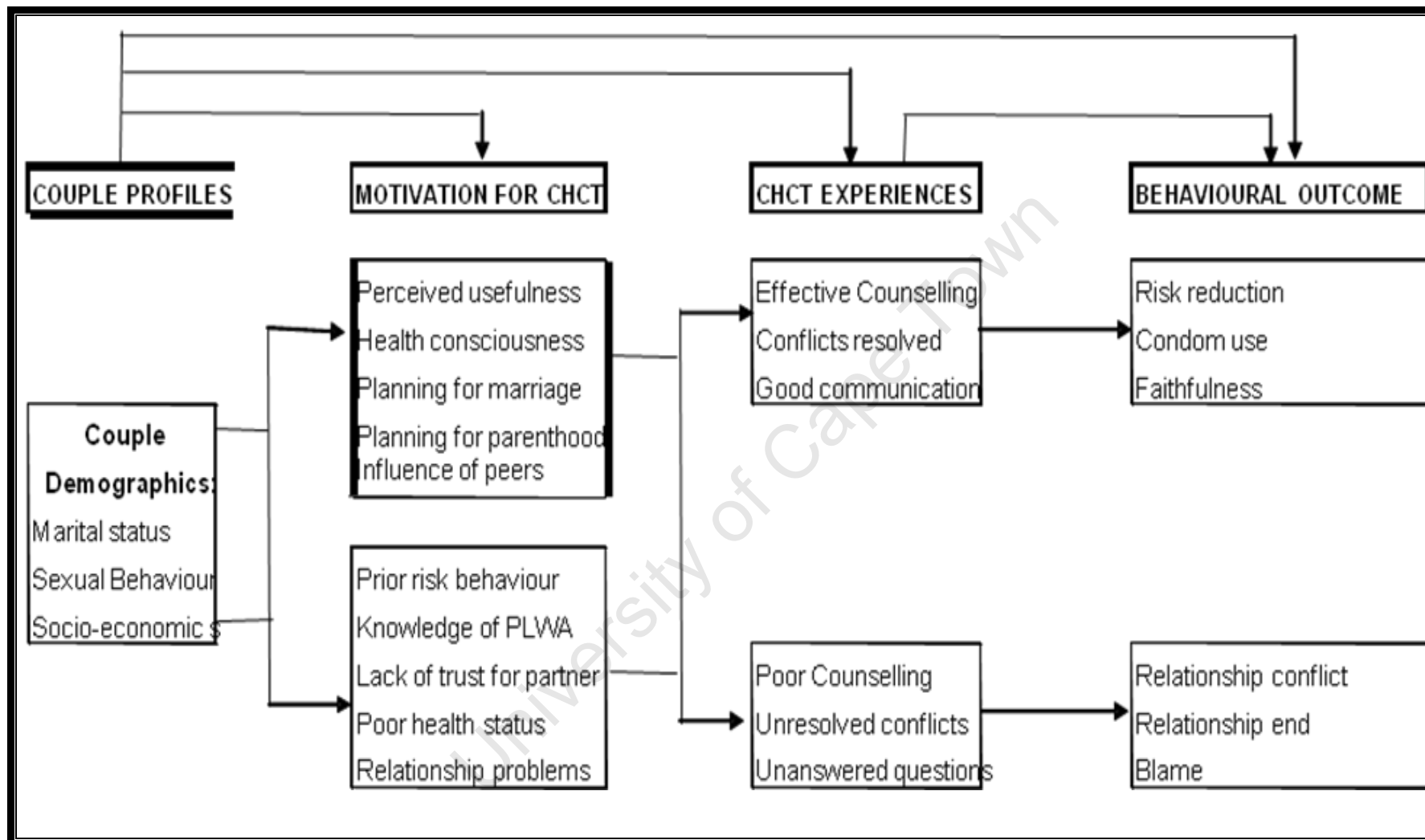


Figure 2-1: CHCT process stages

Little is known in SA on the three stages as defined above. Therefore, this study seeks to explore this gap and to describe the couple motivating factors, experiences and outcomes of the CHCT process within a selected population in SA.

Risk reduction uptake, frequently measured by means of condom use, is the main behavioural outcome for the CHCT process. Although this is a very objective assessment based on subjective input (self-reports), it is also a very one-dimensional measure, as it does not take into account the various needs of the couple during the adjustment phase that follows their discovery of an HIV positive result. It is thus necessary to find out more about the couple dynamics in an HIV serodiscordant or concordant positive relationship after the partners' HIV status has been confirmed. This information includes the emotional experiences of couples involved in CHCT, their coping mechanisms, the apportionment of blame and other lifestyle adjustments after HIV testing. Serodiscordant couples face unique challenges, such as maintaining a sexual relationship in the face of transmission risks, as well as HIV/AIDS-related stigmatisation, which extends to the negative partner who so often is not cared for by the health system (Van der Straten, 1998).

HIV concordant positive and serodiscordant couples are also faced with other life decisions, such as whether they want to have children in the future. Risk reduction involves instructions for the correct and consistent use of condoms, which also function as a barrier method of contraception. However, in couples who are planning to have children in the future despite their own HIV status, such contraception would be undesirable, leaving couples with limited or no options. If couples are not given a safe alternative and a reasonable response to their queries regarding reproductive choices, it could potentially hinder all the progress towards preventing the transmission of HIV infection to the negative partner in HIV serodiscordant couples. Within a partnership, it is important for partners to communicate clearly and openly about HIV as well as about their fertility plans in the face of HIV infection risk.

2.6 HIV and fertility desires

A number of studies using different study designs, such as cross-sectional studies and qualitative studies, have been done to identify and evaluate the factors that influence fertility desire among HIV positive people (Bunger et al., 2000; Kirshenbaun et al., 2004; Klein et al., 2003; Magalhães et al., 2002; Moyo & Mbizvo, 2004; Paiva et al., 2003; Sowell et al., 2002; VanDevanter et al., 1999). Many of these studies have indicated that the majority of HIV positive people want to have children, probably because of three main factors: a natural desire for father/motherhood, societal expectations, and low perceived risk of vertical transmission of HIV.

Many of the studies that have looked at HIV and fertility have asked and answered the question: *Do HIV positive people want to have children?* Many studies indicated that HIV positive people do want to have children (Kirshenbaun et al., 2004). For those HIV positive people who do not intend to have children, the fear of vertical transmission of HIV and the consequent suffering of the HIV infected baby are the major deterrent factors. Many studies have focused on HIV positive women. Other studies have focused on HIV negative women and asked the question: *If they knew that they were HIV positive, would they still want to have another child?* In other studies, increased contraceptive uptake after HIV diagnosis was used as a proxy for the lack of desire for a child. Very few studies have focused on HIV positive men (Paiva et al., 2003), and few studies have focused on serodiscordant couples (Klein et al., 2003; VanDevanter et al., 1999). HIV serodiscordant couples have also been noted to be actively requesting fertility assistance to have children (Klein et al., 2003).

Although a number of studies have examined the topic of HIV infection and the desire to have children, there are some gaps in the literature on this subject. Many studies have been done in the United States and in South America (Kirshenbaun et al., 2004; Klein et al., 2003; Magalhães et al., 2002; Paiva et al., 2003; Santos et al., 1998; VanDevanter et al., 1999). The information from these studies might not be generalisable to SSA, however, because of cultural and other differences. In addition, females have been the major respondents in the

studies mentioned above and some of the studies done in SA, and this cannot be generalised to males, because of the varying gender roles and power dynamics in relationships. Very few studies have looked at the responses of both partners concurrently, with even fewer studies done among serodiscordant couples. The sample sizes of the previous studies on this topic vary too. One of the largest studies was done in Zimbabwe amongst 2250 ever-married women (Moyo & Mbizvo, 2004); again, their restriction of looking only at married women of unknown HIV status means that this information is not generalisable.

In SA, Myer et al. (2006) did a study in Cape Town, which indicated that 77% of the 843 women interviewed said that they felt that HIV positive people should not have children. The most common reasons were that children would be more likely to become orphans, and that HIV might be transmitted to the child. It was found that those who held these views were older, had not been tested for HIV, and did not know someone with HIV/AIDS. Another South African study was done by Laher et al. (2009) in Soweto, among 42 HIV positive women aged between 15 and 40, to explore their reasons for either using or not using contraceptives, and to ascertain how this was linked to their intentions to have children. Some of the fears raised by the women about future pregnancies were that the child could be HIV infected, that it could be orphaned, that there could be re-infection in self, and that the pregnancy might lead to deterioration in the mother's health. Many women in this sample indicated that the risk of having a child after having been diagnosed with HIV outweighed the benefits. In the discussion, they additionally noted that personal bias and the negative impressions of the health care workers might also influence women's decision not to have children.

Furthermore, Cooper et al. (2007) conducted a study in SA looking at the fertility choices and intentions of HIV positive people. In this study, factors related to wanting children included the desire for parenthood, and the role of societal expectations, among others. Negative factors that discouraged HIV positive people from wanting children included the fear of HIV transmission, the fear of orphan hood, and the deaths of previous children. It was observed that HIV modified but did not eliminate fertility desires. These results indicated that several

factors (person, partner and society) influenced fertility-related decision making and that these outweighed the influence of HIV status. Men were less likely to be affected by societal pressures, and the pressure to have children applied more to married women in this study.

Several factors can influence whether a couple plans to have children. This thesis identifies the determinants of fertility desire among couples, and thereafter sets out to determine whether HIV status influences the desire to have children, particularly in HIV serodiscordant and HIV concordant positive couples. Some of the determinants studied include: the partners' fertility history, the gender of the HIV positive partner in serodiscordant relationships, the level of education and socio-economic status, among others. From the available literature, factors that influence this decision can be divided into two broad categories that are interlinked namely: individual and socio-cultural. Table 2-2 lists some of these hypothesised factors.

Table 2-2: Factors influencing fertility desire among HIV positive people

Individual	Socio-cultural
Perceived vertical transmission risk	Partner's attitude and expectations
Fertility history	Partner's HIV status
Desire for mother/fatherhood	Religious and other values
Parity	Expectations of family members
Health status	Expectations of community
Knowledge of PMTCT	Attitudes of health care workers

It must be noted that the decision to have children in the future, or not, is complex, as the individual factors interact with the socio-cultural factors to affect that decision. This thesis utilises the Traits-Desires-Intentions-Behaviour (TDIB) approach as a conceptual framework for assessing the couple responses on the topic of fertility desires (Miller, 1994; Miller et al, 2004). Based on this theory, the motivations to have a child are often shaped by personal and socio-cultural characteristics; the motivations shape the individual's fertility desires; these desires are turned into intentions and ultimately to the reproductive behaviour. This theory has also been used in other studies that assess fertility desires and intentions in HIV positive people (Oladapo et al., 2005). Figure 2-2 illustrates the

hypothesised decision-making pathway with regard to fertility decisions based on this theory.

There are different motivating factors that influence people’s desire for children. Personal motivating factors include the yearning for mother/fatherhood, fertility history and socio-economic status. HIV status of self or partner HIV status could influence this. Socio-cultural factors that affect motivation include the negative views of society towards individuals with or without children, and the presence or absence of stigmatisation in relation to this.

These motivating factors are activated as desires, usually with a binary outcome: desire for children versus no desire for children. The desires are converted into intentions, which ultimately result in behavioural outcomes. Both the motivation and the desires are psychological states that the individual can possess, but they might not necessarily be converted into intention and behavioural action. The intentions would be represented by some tangible behavioural actions, such as the use and non-use of condoms, or contraception, and the actual planning as to the number of children they would like to have in the future. Various factors affect whether or not individuals ultimately act on their intentions.

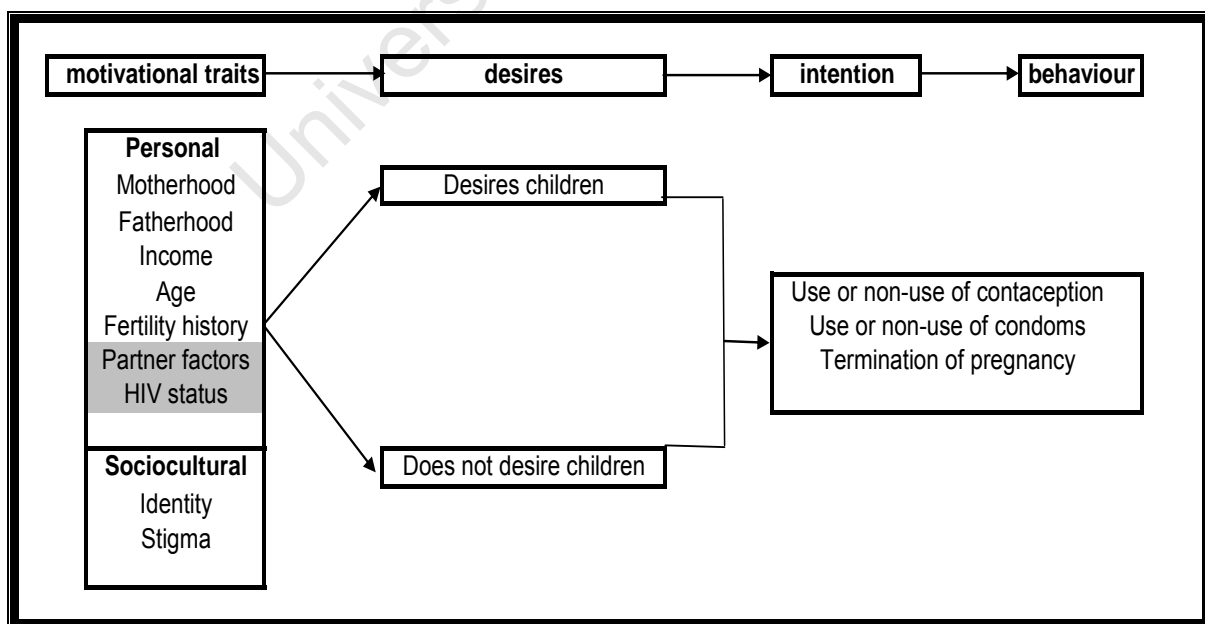


Figure 2-2: Fertility desire conceptual framework

This thesis explores the stages of the framework as illustrated in Figure 2-2 by attempting to answer the questions:

- What are the factors that motivate individuals and couples to have children?
- What are the determinants of fertility desire in individuals and couples?
- How does HIV status of self or of partner influence fertility desires and fertility intentions?

In addition to fertility issues in couples, another important topic on which couples are advised as part of the risk reduction counselling is to ensure the prompt treatment of STIs and of their sexual partner. Although the focus of this particular thesis is on the role of sexual partnerships in HIV prevention, it presents a unique opportunity to ascertain the STI treatment seeking behaviours of both partners in a sexual partnership with particular emphasis on the partner notification practices.

2.7 Sexually Transmitted Infections and HIV

2.7.1 Sexually Transmitted Infections and HIV transmission

The commonality between HIV and STIs resides in the similar behaviours that lead to their acquisition and transmission. STI prevention programmes are therefore usually integrated into HIV prevention programmes and vice versa. Integrating STI and HIV prevention efforts could lead to and improve the success of both programmes. Korenromp et al. (2005) concluded that STI management in areas with a high prevalence of STIs and high-risk behaviour is an important strategy for HIV prevention.

The link between HIV and other STIs goes beyond common disease acquisition behaviour. Studies have shown that STIs increase both HIV infectiousness and susceptibility (CDC, 2008). The current medical literature indicates that the presence of STIs is an important determining factor in HIV transmission and acquisition (Cohen, 2004; McClelland & Baeten, 2006; UNAIDS, 2006). A systematic review of the interactions between HIV and STIs indicates that there is a bi-directional relationship between HIV and STIs (Rottingen et al., 2001). This

has been referred to as “epidemiological synergy” (Rottingen et al., 2001). Various studies have shown that HIV infection itself significantly increases the risk of STIs after controlling for sexual practices. This is because HIV infection affects the susceptibility to STIs, as well as STI severity, duration and response to therapy.

In a study done in South Africa in Hlabisa, rural South Africa, the burden due to STIs was noted to be high and the researchers estimated that least 9% of men and 9% of women 15 to 49 years of age contracted an STI each year (Wilkinson et al., 1997)

Given the evidence of the link between STIs and HIV, and the estimations of the high disease burden due to STIs in SA, it is essential that STI management be intensified. The WHO recommends the syndromic approach to the management of STIs in resource-poor settings. The syndromic approach is made up of five essential elements, namely: appropriate case management, encouraging compliance with medication, encouraging condom use, counselling and partner notification and management (WHO, 2003c).

2.7.2 Partner notification in STI management

Partner notification involves informing all the sexual partners of people diagnosed with an STI of the fact that they have been exposed to infection and might need treatment too. Partner notification is important, as it prevents re-infection of the treated partner and breaks the chain of infection in the population.

The presence of STIs affects the transmission efficiency of the HIV virus, that is the probability of HIV transmission per contact is increased in the presence of an STI. Partner notification would result in the treatment of sexual partners thus reducing the HIV transmission probability per contact and indirectly, a reduction in the R_0 (the basic reproductive rate). In this way it is an effective HIV prevention strategy.

There are different ways of undertaking partner notification (Hogben et al., 2004). In ‘patient referral’, the treated partner informs his or her sexual partners about

the need for treatment. 'Provider referral' means that the health care provider attempts to contact all the sexual partners of the index case and refer them for treatment. A variation of the 'provider referral' strategy is called the 'contract referral', in which the provider asks the index case to notify all sexual partners and to agree that, if they have not reported for treatment by a certain time, the provider will then contact them. Lastly, in some settings there is also the possibility of reporting of cases to health departments (Hogben et al., 2004).

Patient referral is the most commonly used strategy in SSA. Patient referral can be simple, in which case the patient verbally communicates the message of the need for treatment to his or her sexual partners; or it can be assisted, in which case the partner is provided with some aids, such as partner notification notes. Matthews et al. (2002) did a study in South Africa to evaluate whether the use of video-based educational interventions in the STI clinic would result in improved partner notification. The study indicated that the video-based educational method resulted in improvements in 'self-efficacy' in notifying partners. Some studies have looked at partner notification from the health care providers' perspectives (Hogben et al., 2004). Patient referral has been noted as the preferred and most cost-effective option of partner notification.

A population based survey indicated that most adults would notify the main partner, but not occasional partners. The survey also indicated that men were less likely to notify their partners than women were (Warszawski & Meyer, 2002). Other studies of STI treatment seeking behaviour have indicated that women and men have different preferences for various providers, based on factors such as affordability, perceived quality of care and accessibility (Voeten et al., 2004).

However, the success of partner notification is highly dependent on client cooperation and the relationship dynamics between the infected person and their sexual partners. Some studies have attempted to obtain information from STI patients to help design the best partner notification models (Hennessy et al., 2002; Mathews et al., 2002).

Given the importance of partner notification in STI management, it is essential to be aware of couples' partner notification practices and to identify the factors that either hinder or enable this process.

2.8 Interpartner reliability of self-reporting of sexual practices and other social behaviours

In order to develop effective HIV prevention programmes it is important to understand human behaviour fully, and particularly sexual practices. In research, conclusions and inferences are often based on self-reported sexual practices by the study participants. These practices include the use of condoms and the frequency of sexual activity, among others. These and other sexual practices are important to identify, as they are regarded as the risk factors for HIV transmission. In order to be able to evaluate the effect of any of these sexual practices on the transmission of HIV, it is vital that this information is accurate. If partners in a sexual relationship give varying responses to questions on sexual practices, it reduces the validity of the resultant outcomes and makes the possible interpretation of results challenging.

Many studies have shown varying levels of agreement between partners in reporting sexual practices (De Boer et al., 1998; Sison et al., 2004; Upchurch et al., 1991). These studies have been done both in SSA and on other continents. Harvey et al. (2004), for instance, studied 112 heterosexual couples; the results indicated high levels of agreement on sexual behaviour and condom use, but low levels of agreement on who had more power in the relationship and who was sexually dominant. In Upchurch et al.'s (1991) study of 71 couples in Baltimore; it was found that interpartner agreement was not affected by socio-economic status, age or marital status. Largarde et al. (1995) carried out a study among 62 couples, which they followed over a five-week period in rural Senegal. In this study, they assessed the reliability of self-reported sexual activities. They realised that the degree of agreement was greater if couples were asked about recent sexual activities (over the past 7 days), than about activities dating back four weeks, in which case both men and women tended to over-report sexual activity. Finally, a study done in Thailand among 529 couples (of whom 283 were

serodiscordant) assessed the reliability of self-reported sexual activity. Follow-up interviews were conducted with the serodiscordant couples for 6 to 12 months. The study indicated that agreement was good for common sexual practices but was lower for condom use, oral sex and anal sex (de Boer et al., 1998).

From the studies reviewed, there seems to be wide-ranging evidence that there are varying levels of agreement between couples' responses; these varying levels of agreement of interpartner reports might be context-dependent. Little data is available on the interpartner reliability of reports in SA. This study therefore examines the reliability of self-reporting of sexual practices in the South African context. Factors that determine these differences (such as demographic and socio-behavioural variables) are explored.

2.9 Summary

In summary, there are significant gaps in the literature concerning the potential for CHCT and other partnership-based HIV prevention approaches in South Africa. In addition, information on the effect of couple HIV status on fertility desire is not comprehensive. Added to that, couples research presents the opportunity to explore other aspects that directly relate to HIV prevention, such as the partner notification practices in STI management. Lastly, the interpartner reliability of responses to questions asked provides insight into the consistency of responses and allows discrepancies in responses to be explored.

CHAPTER 3: METHODS

This chapter outlines the methodology of the study. As such, it describes the research clinic location, participant recruitment procedures, an overview of the study design, data management and the data analysis approach, as well as the ethical considerations.

3.1 Research site description

3.1.1 Description of Guguletu

This study took place in a South African township called Guguletu. This is located in SA's Western Cape Province, 20 kilometres outside central Cape Town. This area is one of the oldest black townships in SA, having been established in 1958 for migrant workers from the Eastern Cape Province (as it is now known).

The population of Guguletu is approximately 170 552 people according to the 2001 census statistics. About 51% of the population are between 16 and 45 years of age. The majority of the people from this area are IsiXhosa speaking black Africans. The City of Cape Town's Economic and Human Development Department indicated that, in 2006, 26% of males aged 15-65 were employed, compared to 18% of females, and that the majority of these were in unskilled or semi-skilled professions. Only 15% of people were residing in a house or brick structure, whereas 63% of people lived in an informal dwelling. Of the adults above 20 years of age, 16% have had no schooling and 79% have attended school between grades 1 and 12. With regard to household income per annum, 28% of all households are reported to have no income, while about a quarter have an annual household income of between R9600 (US\$1270) to R19200 (US\$2550). The average monthly income is R1100 (US\$146)⁵. Please see Figure 3-1 for a map of the study location.

⁵ Please note that all the currency conversions in this thesis were done on 20 July 2010 using the conversion rate of: 1US\$ = 7.5ZAR.

HIV prevalence in Guguletu is the second highest in the Western Cape Province, with an antenatal prevalence of 29% in 2006. This high HIV prevalence has been attributed to many factors, such as unemployment, high population density, migration, high risk sexual networks and the practice of unprotected sex. Between 2005 and 2006, the Western Cape HIV VCT programme uptake was 8% among individuals 15 years or older, and of these two thirds were medical referrals.

3.1.2 Description of Research Clinic

The research clinic where this study took place is called the Manyanani@Empilisweni Clinic. *Manyanani* means 'come together' in IsiXhosa, whereas *Empilisweni* means 'place of wellness'; the full meaning of the name was thus: 'come together (with your partner) to the place of wellness'. The research clinic, which is situated at the Uluntu Resource Centre, NY108 in Guguletu, was opened in February 2005 as a Couple HIV Counselling and Testing centre in preparation for a Phase III clinical trial.

Prior to opening, the clinic building was part of the Uluntu Resource Centre buildings, which were being used on a short-term or long-term rental agreement for various community activities. After a lease had been obtained for use of this space for conducting the Phase III clinical trial, all the necessary renovations were done to convert the space into 4 counselling rooms, 3 clinical rooms, a reception, a dispensing area, a kitchen, and a data room.

The Phase III trial (also known as the Partners in Prevention (PIP) study) commenced at the clinic in September 2005 and follow-up of trial participants was completed in June 2008. During its period of operation, the clinic was serving as a CHCT centre, in addition to conducting the PIP study. The clinic was open every weekday from 8.30am to 4.30pm and at least two Saturdays per month. More than 2000 couples attended the clinic for CHCT over the 3 year period of its operation. Of these, about 1500 were screened for the PIP study and 196 were enrolled into PIP study.



Figure 3-1: Map indicating study area

Additional services for the couples that attended the clinic included treatment for STIs, support group activity for HIV serodiscordant couples, and referral to appropriate places for contraception, clinical and psychosocial support. The research clinic did not serve as a primary care clinic. Referrals were thus made to the appropriate places for all other medical problems and HIV care.

3.1.3 The Partners in Prevention (PIP) study

The PIP study was a multicentre trial that was conducted by researchers from the University of Washington in collaboration with researchers at 14 African research centres. Seven of these research centres were in southern Africa in the following countries: South Africa, Zambia and Botswana. The other seven research centres were in the following East African centres: Uganda, Kenya and Tanzania. The trial enrolled 3408 heterosexual HIV-serodiscordant couples in which the HIV infected partner was also infected with HSV-2, had a CD4 cell count of at least 250 cell/mm³, and was not receiving ART. Follow-up meetings were held with these couples for periods of up to 24 months; monthly follow-up meetings were held with the HIV positive partner and 3-monthly follow-up consultations were held with the HIV negative partners. The primary objective of the trial was to measure the efficacy of daily acyclovir suppressive therapy in preventing HIV transmission among heterosexual HIV-serodiscordant couples in which the HIV-infected partner also had an HSV-2 infection. The results of this trial showed that there were some reductions in plasma and genital HIV levels in the acyclovir arm. However, it was found that the acyclovir suppressive therapy was not effective in reducing HIV transmission to the HIV negative partner in the HIV serodiscordant couples. The effect was not statistically significant: of the 84 HIV transmission events determined by viral sequencing to have occurred within the partnership, there were 41 and 43, respectively, on the acyclovir and placebo arms (HR 0.92, 95% CI 0.60-1.41, p=0.7) (Lingappa, 2010). Please see Appendix 2 for the media package that gives additional information regarding the PIP study.

3.2 Study population recruitment

The couples who came to the research clinic had heard about the CHCT services that were being offered. Recruitment of study participants involved various strategies. The most commonly used recruitment techniques involved the use of

peer recruiters. In this strategy, couples who tested for HIV at the research centre were asked to inform their peers about the CHCT service. They were provided with pamphlets or invitation cards to use as aids in communicating the message. Another commonly used method was the use of a vehicle playing music with a loud speaker system that went into the community with the recruitment team; once they were in the community, people gathered around to listen to the music, and the recruitment team told them about the existence of the CHCT clinic and the research being undertaken there. Other methods that were less successful in recruiting couples included: advertisements in the local newspaper, on billboards and on graffiti walls; radio presentations; street drama and presentations in hospital waiting areas, at shopping centres and at other places where people gather.

This PhD sub-study to the main clinical trial was ethically approved in July 2006 and the first couple was enrolled in September 2006. Couples that attended the clinic for couple counselling were recruited for the study. Consecutive couples were offered the chance to participate in the PhD study. All the couples that met the eligibility criteria (described below) were enrolled in the study. As the PIP study was being conducted in the clinic, some participants were co-enrolled in this study as well as in the PIP study, if they met the eligibility criteria for the PIP study. This applied to about 40% of the HIV *serodiscordant* couples. The majority of the participants for this PhD study were not part of the PIP study.

3.3 Sample size

The required sample size was calculated using the Stata® version 10 statistical software. The primary outcomes of two of the study objectives were used in this calculation. As couple HIV status was going to be one of the main outcome measures in the thesis results, consideration was taken so that the sample size was sufficiently powered to assess any differences between the three groups of couples (concordant positive, concordant negative and serodiscordant couples). In addition, because each couple was considered as a 'cluster', the sample size calculation took into account the cluster effect by doubling the calculated sample size.

A 95% confidence level and power of 90% were used in the calculation of the sample size. The following assumptions were made:

- Among the couples that attended the clinic, it was hypothesised that about 25% of them would be HIV-serodiscordant. This was because the ongoing couple status statistics collection at the research clinic before the onset of this PhD indicated that about 25% of the couples were in serodiscordant relationships.
- The proportion of HIV concordant negative couples that would like to have children was estimated to be 0.95. This proportion was obtained from the review of literature on estimated proportions of HIV negative women who would like to have children in the future. The proportion of concordant positive and serodiscordant couples that would like to have children was estimated to be 0.75.
- The proportion of couples that report positive experiences after going through CHCT was hypothesised to be 0.7.

Using above assumptions, the sample size required for the study was found to be 602 couples.

3.4 Sampling

The study population consisted of consecutive couples attending CHCT at the Manyanani@Empilisweni Clinic in Guguletu, Cape Town from September 2006 and November 2007.

3.4.1 Inclusion criterion

The study included only couples in which both partners were aged 18 years and above who were both competent to provide informed consent. Age was ascertained by self-reports. The duration or nature of the partnership was not assessed for eligibility.

3.4.2 Exclusion criteria

Participants were offered the opportunity to join the study the first time they attended at CHCT. It was noted that some participants had multiple partners and would thus have liked to attend CHCT with each of the partners. In other cases, partnerships broke up and participants returned to the research clinic to participate in CHCT with their new partners. Participants returning to the clinic with new or additional partners were not eligible for the study. This was ascertained by self-reports and verified by checking the database of people who had tested for HIV at the clinic before. Less than 50 couples were excluded based on returning to the clinic for repeat testing with additional or new partners.

Same-sex couples were not eligible for inclusion in the study. However, throughout the entire duration of the couple counselling clinic, only three same-sex couples presented for CHCT.

3.5 Study Design

The study combined qualitative and quantitative methodologies. The quantitative component involved a cross-sectional study of 602 couples. In respect of the qualitative component, in-depth interviews were done with 27 couples.

3.6 CHCT process

3.6.1 Couple HIV Counselling and Testing Protocol

The CHCT process that was done in this study followed the CHCT Intervention and Training Curriculum developed by the CDC in collaboration with the Rwanda Zambia HIV Research Group (RZHRG) and the Liverpool School of Tropical Medicine (LSTM) (CDC, 2007).

In terms of this counselling protocol, the couple went through pre-test counselling together. This entailed having both members of the couple in the counselling room together at the same time with the counsellor. Each member of the couple would then consent individually to undergo HIV testing. If both members consented to have the test, they went through the testing process. The post-test counselling, including the giving of the HIV test results, would then happen with

the couple together in the same room. The following are the modules of this counselling protocol:

- Module 1: Background of CHCT and Discordance
- Module 2: Introduction to Couple Counselling Skills
- Module 3: Initial Session of the CHCT Intervention
- Module 4: Providing Concordant Negative Results
- Module 5: Providing Concordant Positive Results
- Module 6: Providing Discordant Results
- Module 7: Support and Prevention Services
- Module 8: Outreach and Recruitment

Please see Appendix 3 for the details of the content of each of the modules stated above.

The CHCT at the research centre was conducted by CHCT-trained counsellors. These counsellors had previously worked in VCT clinics and were experienced in the individual VCT process. In addition, some also had ARV adherence counselling experience. Two members of the research centre staff had been trained to be trainers of the CDC's CHCT curriculum. These in turn trained all the counsellors that were working at the research clinic.

3.6.1.1 HIV/STI risk reduction counselling

A significant proportion of the post-test counselling is focused on HIV/STI risk reduction counselling. The purpose of this risk reduction counselling is to promote behaviour change and to provide the knowledge, skills and the self efficacy that the attendants would require to prevent the acquisition and transmission of HIV. The risk reduction plan and behaviours promoted are in most cases client-centered so as to increase their relevance for the attendants concerned. Some of the components of the risk reduction strategy include: promotion of the correct and consistent use of condoms as well as provision of these, promotion of a decrease in the number of concurrent partners, reduction in the use of alcohol and/or drugs and the promotion of early treatment seeking behaviour for STIs. The risk-reduction plan for each attendant (or in the case of CHCT; for each couple) should be appropriate and acceptable with clear and realistic options of how to implement it.

3.6.2 The HIV test algorithm

The HIV tests were done in parallel. The two tests that were used in this study were the Abbott Determine™ HIV-1/2 (Abbott Diagnostics, Illinois, USA) test and the Uni-Gold™ HIV (Trinity Biotech) test. For each member of the couple, blood was taken by fingerpick for the HIV rapid tests. If both tests were found to be reactive, then the individual was considered to be HIV positive. At completion of the CHCT process on the same day of the HIV test; all HIV positive individuals were given a referral letter to take with them to the primary care facility, which has an ART clinic.

If both rapid tests were non-reactive, then the individual was considered to be HIV negative. In cases where one of the tests was reactive and the other non-reactive, in other words, if there were discordant results in an individual, a blood sample was collected by venipuncture and sent to the local laboratory for the HIV ELISA test. Over the course of the research clinic operation, there were less than 5 such cases of discordant HIV rapid tests in an individual. In such cases, the individual with the discordant results and their partner would be asked to return to the clinic a week later for the HIV ELISA results.

The HIV test algorithm that was used in this study is shown in Figure 3-2 :

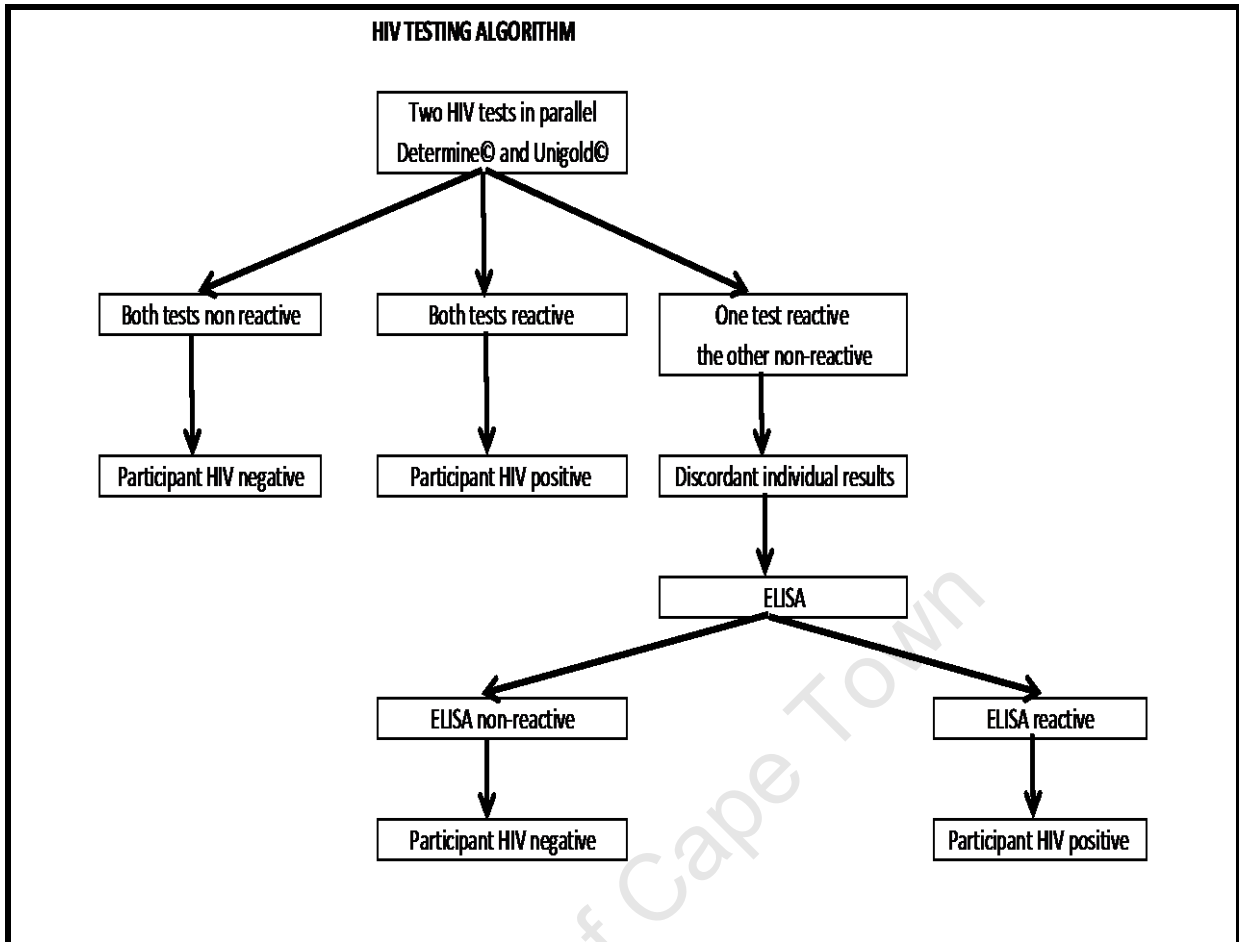


Figure 3-2: HIV test algorithm

When interpreting the HIV results of couples, the following logic applied: in cases where both partners were HIV negative, the couple was referred to as an HIV concordant negative couple. Where both were HIV positive, the couple was an HIV concordant positive couple. Lastly, in cases where one partner was HIV positive and the other was HIV negative, the couple was referred to as HIV serodiscordant.

3.7 Methods of data collection

Data were collected for this study using four main methods, namely:

- A structured questionnaire was administered by the interviewer to each member of the couple before the CHCT occurred.
- Exit interviews were conducted with the couples who had gone through CHCT. This too was an interviewer-administered questionnaire, consisting of both closed and open-ended questions.
- Follow-up interviewer-administered questionnaires were applied at least one month post-CHCT.
- In-depth interviews were held with 10 serodiscordant couples, 5 concordant positive couples, 6 concordant negative couples, and 6 couples who were initially serodiscordant, until the negative partner seroconverted.

3.7.1 Quantitative component of the study

The questionnaires in this study were administered to each member of the couple separately before the pre-test counselling took place, and immediately post-CHCT to consenting individual members of the couple separately. In addition, the couples were requested to return for a follow-up questionnaire one to two months after CHCT. The participant flow in the study was as shown in Figure 3-3 .

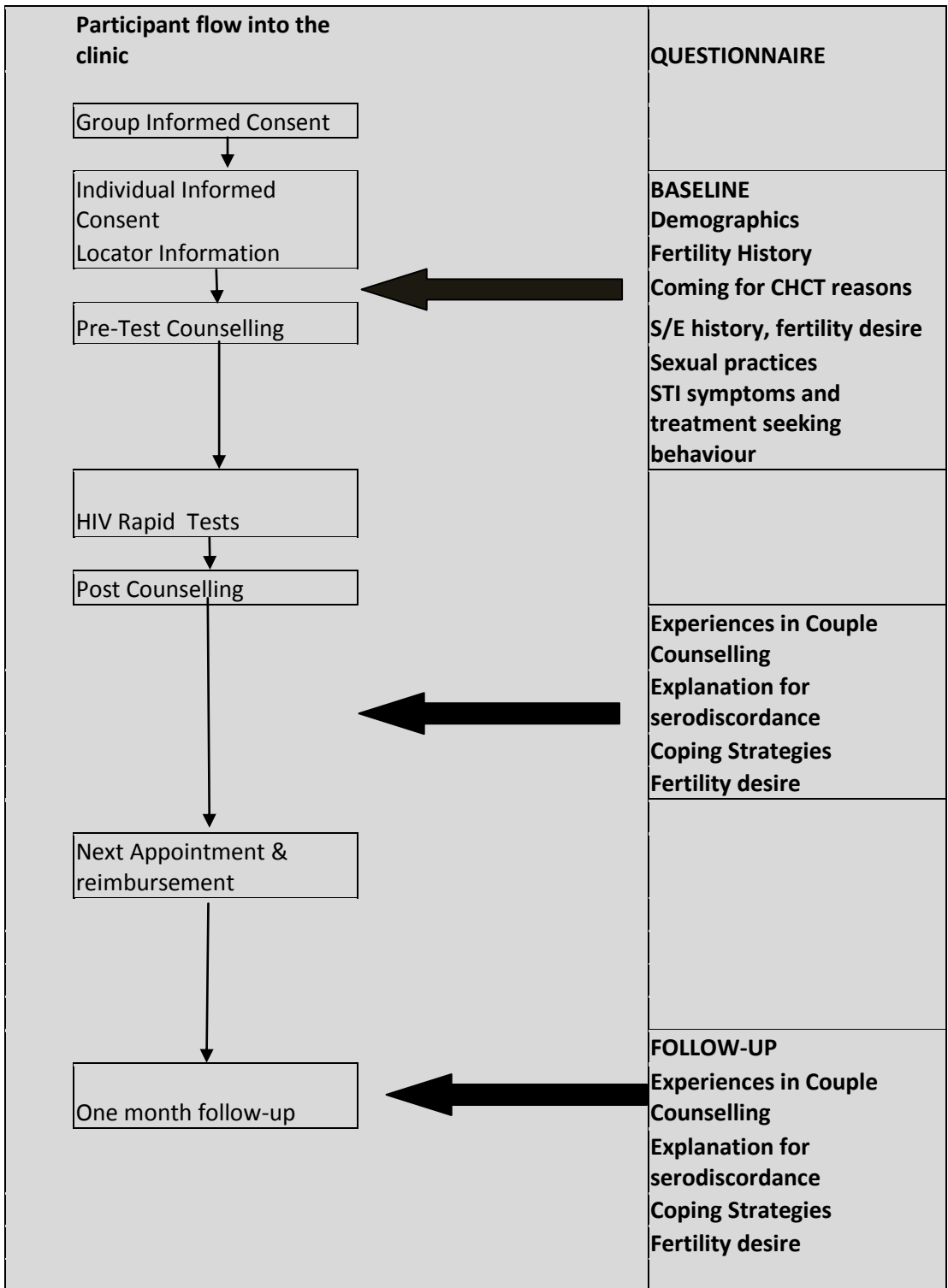


Figure 3-3: Visit and Procedure Flow

All the couples that met the inclusion criteria were given information about the study and invited to participate. Each member of the couple gave informed consent individually in a private room. Only if both members of a couple gave informed consent would the couple be enrolled for the study. The couple was assigned identification numbers both for each couple and for each member of the couple. Couples were assigned consecutive identification numbers. Partner numbers were 1 for the female partner and 2 for the male partner. For example, the first couple enrolled would be identified as: *Female*: 001.1 and the *Male*: 001.2

All the questionnaires in the study were interviewer-administered. For all eligible consenting couples, each member of the couple was interviewed individually in a private room. The couple was not interviewed together at any stage. Trained interviewers conducted the interviews. Training for the quantitative interviews was done with regard to both the content and the conduct of the interviews. A pilot study was done with 6 couples who did not subsequently enrol into the study. During this training, the logistical considerations of the questionnaire implementation were discussed. There were six trained interviewers for the quantitative study (2 men and 4 women). As far as possible, the men interviewed the male members of the couple, while the women interviewed the female members.

The quality control of the interview process included daily checking of questionnaires for completeness and weekly interviewer debriefing and retraining during the period of data collection. The interviews were done in a language with which the individual participant was comfortable, either English or IsiXhosa. Over 90% of the interviews were done in IsiXhosa. Each interview took about forty minutes.

3.7.2 Pre-CHCT questionnaire structure

The pre-CHCT questionnaire was structured as follows:

- Demographic and socio-economic factors
- Partnership characteristics
- HIV testing history
- Fertility desires
- Sexual characteristics
- Sexually transmitted infection management history

Please see Appendix 4 for the full baseline questionnaire.

3.7.2.1 Demographic and socio-economic factors

This section focused on obtaining information on the individual demographic characteristics, such as age, and economic status (measured by the number of years at school, employment status and type of employment, total household income). Participants were also asked whether they were married to their partners, and living with them. Other behavioural characteristics, such as alcohol consumption were also assessed. Hazardous alcohol consumption in this study was measured by means of the Alcohol Use Disorders Identification Test (AUDIT-C). The AUDIT score has been developed and validated by the WHO Department of Mental Health and Substance Dependence (WHO, 2001). The AUDIT helps to identify whether the person is engaging in hazardous (or risky) drinking or harmful drinking, or is alcohol dependent. The AUDIT-C is a 3 item questionnaire derived from the AUDIT and is used to screen for hazardous drinking. Hazardous drinking is a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others. A score of 4 or more in men or 3 or more in women is regarded as a positive AUDIT-C score. Please see Appendix 6 for further details of this tool.

3.7.2.2 HIV testing history

Individuals were asked about their HIV testing history and their HIV status, if they knew it from previous testing at other HIV testing facilities. Their decision to attend the clinic for CHCT was also explored. Questions focused on who had

made the decision to attend CHCT, why the decision had been made, and what the HIV risk perception of self and of partner were.

3.7.2.3 Partnership Characteristics

The following partnership characteristics were explored: marital status, cohabitation status, perceived relationship strength, and communication behaviour. The duration of the partnership was also assessed. Men and women were interviewed separately, and therefore some might have reported the duration of partnerships differently. For the data analysis of this thesis, the variable that was used was the reported duration of partnership if the male and female reports were identical, or the average duration for those who reported differently.

3.7.2.4 Fertility history and fertility desires

Participants were asked about their fertility history, which included the total number of children that they had, as well as the number of children with the current partner. Fertility desires were explored by enquiring about the participants' plans to have more children in the future. It was also asked who the influential people were who might influence this decision in their lives, and how the HIV status of self or of the partner would influence the decision to have a child in the future.

3.7.2.5 Sexual characteristics

Participants were asked about their sexual behaviour. These questions included questions about, among other things, their age at sexual debut (McGrath, et al., 2009), total lifetime sexual partners, concurrent partners, and condom use at most recent sexual encounter, among other indicators of sexual behaviour. There were also some questions about the partner's sexual behaviour.

3.7.2.6 Sexually transmitted infection history

Recent STI in this study was defined as having had an STI, as self-reported by the participant in the previous year. Participants were asked about their treatment seeking behaviour the last time they had an STI. The partner notification practices were also explored.

After the pre-CHCT interview, the couple went through the pre-test counselling, rapid HIV test and post-test counselling. After the post-test counselling session, if the participants were willing to be interviewed, the same interviewer who had conducted the initial interviews before the HIV testing (or a different interviewer) would interview each member of the couple separately. At the end of the post-CHCT interview, participants were requested to return to the study clinic a month later for follow-up interviews. Those who refused to participate in the immediate post-CHCT interview were also invited to participate in the follow-up interview. It is worth noting that, even if only one member of the couple decided to be interviewed immediately post-CHCT, he or she was interviewed.

The immediate post-CHCT questionnaire was short (about 5-10 minutes administration time) and focused on the participant's experiences in the CHCT session. The questionnaire aimed to obtain information from the couples as to their experiences of being counselled as a couple. The ability of the couple to express their risk issues and concerns in the presence of their partner, as well as the positive and negative aspects of being counselled and tested for HIV together, were evaluated. Please see Appendix 5 for the full questionnaire.

At the end of this immediate post-CHCT interview, the interviewer requested the partners to attend a follow-up interview in one or two months' time. If the participant(s) consented to a repeat interview, this was noted on the baseline questionnaire and the participant was given a review date to return to the clinic. Even if only one member of a couple gave informed consent for the follow-up interview, he/she would be requested to come to the research clinic for the follow-up interview.

There was no active retention of the participants, and participants came back voluntarily for the follow-up interview.

3.7.3 Follow-up questionnaire structure

The follow-up interview was carried out using an interviewer-administered questionnaire. The follow-up questionnaire was structured as follows:

- Experiences in CHCT session
- Relationship status post-CHCT
- Fertility desires

Please see Appendix 7 for the full questionnaire.

3.7.3.1 Experiences in CHCT session

The participants were asked to describe their experiences of attending CHCT. Both positive and negative experiences were explored. Information was also obtained from both serodiscordant and concordant positive couples on what their coping strategies were, and what challenges they had encountered since they became aware of their HIV status.

3.7.3.2 Relationship status post-CHCT

Questions relating to how the knowledge of HIV status post-CHCT influenced the partnership were asked. These questions looked specifically at relationship strength and commitment to each other as well as at communication regarding HIV and STI risk reduction. Assessment on risk reduction uptake was also done by enquiring about condom use behaviour after CHCT as compared to before CHCT.

3.7.3.3 Fertility desires

Participants were again asked about their fertility plans. They were particularly asked whether knowledge of the HIV status of self or of the partner influenced their fertility desires.

3.7.4 Questionnaire comparisons

The following sections were present on both the baseline and the follow-up questionnaire.

Fertility desires

- Plans to have children in the future by self or by partner
- Emotions of self or of partner if there was pregnancy in the relationship
- Risk reduction uptake (indicated by condom use and reduction or elimination of multiple partners)
- Use of condoms at the last sexual encounter

The duration of data collection for the quantitative component of the study was 13 months.

3.8 Qualitative study

The purpose of the qualitative component of the study was to capture in-depth information that might not necessarily arise or become apparent during the quantitative component of the study. The qualitative study was done concurrently with the quantitative study.

In order to obtain in-depth information on the process of CHCT, qualitative interviews were done with 27 couples. Of these, 5 were concordant positive, 6 were concordant negative, 10 were HIV serodiscordant, and 6 were couples who were initially serodiscordant until the HIV negative partner became HIV infected during the course of the PIP study of which this study was a sub-study. The couples who were invited to participate in this study had all undergone CHCT before, either as part of the quantitative component of this study, or as part of the ongoing PIP study. The couples had all had previous HIV tests (CHCT), within one month to one year prior to the interviews.

A register of participants who attended the research clinic was updated every day. From this register, couple categories could be obtained, that is concordant positive, concordant negative, and serodiscordant; information could also be obtained on couples enrolled in the PIP study who were initially serodiscordant

but who had become HIV concordant positive after the negative partner had seroconverted during the study. In order to identify couples for interviewing in the qualitative study, convenience sampling was done. Retention officers contacted couples from the four categories who were still in intact relationships after going through the CHCT process. Where couples were no longer together or not willing to attend the qualitative interviews, the next available couple on the list was contacted.

These couples were invited, either telephonically or by means of a home visit, to participate in this study. Interviews were open-ended, with each member of the couple being interviewed individually in a separate private room. The men were interviewed by a male interviewer and the women by a female interviewer. Interviews were all conducted in IsiXhosa, recorded on a digital tape and transcribed.

Two interviewers were trained to administer the qualitative interview. These two interviewers were asked to sign a confidentiality agreement (see Appendix 8 for the confidentiality agreement and Appendix 9 for a description of the qualitative interview process). The training involved going through the content of the interview guide as well as reinforcing the qualitative interview techniques. Role plays were done and piloting was done with one concordant negative couple who were not part of the couples that were in the study.

The individual members of the couples gave their consent separately. If both members of the couple consented, the interview would continue separately. The interviews were conducted using a semi-structured questionnaire, and they were tape recorded.

3.8 .1Qualitative interview guide

The list of topics that that were covered in the qualitative interview were:

- CHCT
- Fertility desires
- Sexual practices

3.8.1.1 CHCT

The interviews started by obtaining current contextual factors that are mentioned in the community regarding HIV testing. These factors are thought to influence the decision to test or to affect the motivation to test for HIV. These are factors identified by community members. Participants were then asked about the motivating factors for couples in the community in general and for the couple in particular to attend HIV testing. Thereafter, information was obtained on the experiences of CHCT, and lastly, the relationship status after the HIV testing process was determined. The experiences of CHCT that were assessed were:

- Feelings before HIV testing
- Self experience of test session
- Partner experience of test session
- Reaction to HIV test results
- Effect of CHCT on relationship
- Discussion topics / issues post CHCT
- Disclosure of HIV results
- Overall rating of CHCT experience

3.8.1.2 Fertility desires

Participants were asked about the general community's perceptions of childlessness, as well as about the community's perceptions of HIV positive people having children. There was greater exploration of issues that the participants considered important determinants in their decision to have children in the future.

3.8.1.3 Sexual practices

Participants were asked about their sexual practices and how, if at all, CHCT had changed some of their sexual practices and norms. Risk reduction uptake was explored in detail, particularly for HIV serodiscordant couples.

Please see Appendix 10 for the qualitative interview guide.

After the interview had been completed, the voice recording was saved in an access controlled computer. The interviewers transcribed and translated the interviews into English. The translated versions were reviewed against the tape recording by two independent IsiXhosa speakers, after the interviews had been transcribed and translated into English.

3.9 Data management and analysis

3.9.1 Quantitative study

Double data entry of the quantitative data was done. The quantitative data were entered into Microsoft Excel by two independent data entry personnel. The data from Excel were exported to Stata®, version 10 (Copyright 1996–2009 StataCorp LP, 4905 Lakeway Drive, College Station, TX 77845 USA). The two separate Stata datasets were merged to detect areas of inconsistencies. Inconsistent data entries were cleaned by referring to the original questionnaires.

The clean data collected using the structured questionnaire were analysed using Stata® version 10 statistical package. The initial analysis involved data exploration and univariate analysis with tabulations and graphs.

For continuous variables such as age, income, number of children and so forth., normality was determined using the Shapiro Wilk test. For variables that were normally distributed, mean and standard deviation are presented. For those that were not normally distributed, median and range are presented.

For categorical variables such as marital status, employment status and so forth, frequency distributions and proportions are presented.

Differences between groups were reported using the Pearson Chi-squared test statistic (for categorical variables), students' independent t test (for means) and Wilcoxon test (for medians). All statistical tests were two-sided and considered significant at $\alpha=0.05$.

Since the questionnaires were administered separately, the initial stage of the analysis presented the individual results as stratified by gender (males versus females), HIV status of respondents and other key variables. Further analysis involved bivariate, multivariate and logistic regression analysis. The key outcome variable in the individual dataset was the individual's HIV status. The second stage of the analysis presented the couple results as stratified by couple HIV status (concordant positive, concordant negative and serodiscordant). The key outcome variable in the couple dataset was the couple's HIV status.

3.9.1.1 Missing values

Some questions on the questionnaires were not answered by all respondents. In such cases where respondents had missing data for specific items, the respondents were removed from the question sample for the calculation of percentages or other summary statistics. The respondents were still included in the samples for any other questions for which they had provided data. Missing values resulted in slightly different cell sizes for some variables, but never exceeded 8% of the respondents. The worst affected variables were variables regarding sexual behaviour, such as the number of sexual partners.

3.9.1.2 Outliers

In cases where respondents gave responses that were on the extreme for continuous variables (such as the number of sexual partners or the number of sexual encounters in the past month), the extreme values were considered to be outliers. Analysis of the variables thus involved analysis with the outliers, as well as analysis without these.

3.9.1.3 Socio-behavioural risk factors for HIV status

Baseline variables described and compared included demographic characteristics (age, home language, dwelling type, household size, highest educational level attained, marital status, type of work and monthly income), sexual behaviour (number of sexual partners, age at sexual debut, total lifetime sexual partners, concurrent partners, condom use at last sexual encounter, use of contraception and contraceptive methods), STI history (recent STI symptoms,

STI treatment provided). The key outcome variable in the individual dataset was the individual's HIV status and in the couple dataset was the couple HIV status.

3.9.1.4 Predictors of fertility desires

The response to the question: '*Do you want to have children in the future?*' was used as the outcome variable respondents who indicated that they were planning to have children in the future were compared to those who indicated that they had no desire to have children in the future. Some of the factors used in the comparison were: gender, age, marital status, employment status, number of living children, among others. Further analysis involved multivariate and logistic regression analysis. The key outcome variable was the individual's desire to have children in the future. Further analysis of this objective identifies who the other influential people were in making this decision and how seriously these would influence the individual's or the couple's fertility desires.

3.9.1.5 Interpartner reliability of self-reports

Interpartner agreement with regard to the responses to the variables mentioned above was measured using the kappa statistic for the categorical variables and the Spearman and Pearson correlations for the continuous variables. For the interpretation of the kappa statistics, Table 3-1 indicates the various cut-offs and the explanations given (Landis and Koch, 1977).

Table 3-1: Kappa statistic interpretation

Kappa value	Interpretation
0	Poor agreement
0 – 0.20	Slight agreement
0.21 – 0.4	Fair agreement
0.41 – 0.6	Moderate agreement
0.61 – 0.8	Substantial agreement
> 0.81	Almost perfect (excellent agreement)

3.9.2 Couples data

As stated above, the second part of the analysis involved the use of the couple dataset. This was generated by separating the males and the females from the individual Stata® dataset and then merging them using the couple identification. Couple specific variables were then generated in Stata®. Some of the variables that were generated were: couple HIV status, cohabitation status, marital status and age difference, among others.

The results of the couple as a unit were presented. Analysis evaluated the characteristics of HIV concordant positive, concordant negative and serodiscordant couples, and checked for any significant differences in their social and behavioural characteristics. Data analysis was also done to determine the level of agreement between the responses from the same couple to the various questions. Interpartner agreement with regard to the responses of the variables selected for this analysis was measured by using the kappa statistic for categorical variables and the Spearman and Pearson correlations for continuous variables.

3.9.3 Multivariate analysis of couple data

Multinomial logistic regression was done with the 3 groups of couples being the outcome variable. In this analysis, the concordant negative couples were the reference category. The adjusted odds ratios and a 95% confidence interval are reported. After the unadjusted logistic regressions, the multivariate analysis included all the dependent variables that were statistically significant ($P < 0.05$) in

the unadjusted analysis. The forward and backward elimination of variables not significant at $\alpha=0.05$ was done to obtain the final models and the adjusted odds ratios.

3.9.4 Qualitative study analysis

In-depth interviews were transcribed and translated into English. They were then coded by an analysis team consisting of the researcher and a research assistant. After reading four transcripts, the researcher and a research assistant collaboratively developed a codebook of themes around the main interview topics. Coding of the interviews was performed using the ATLAS.ti (v.5.0) software (ATLAS.ti centre, Berlin). The researcher verified all the information that was coded by the research assistant independently.

The analysis of the qualitative data was done by using the domain analysis method (Atkinson & Abu El Haj, 1996). Domain Analysis is a 4-step process, which entails:

1. Identification of domains: this involves reading through the transcripts and identifying the primary domains or key concepts that recur in the interviews;
2. Constructing a taxonomy of subcategories: these are subtopics that fall under each domain;
3. Specifying the component or content: this involves presenting the information under each subcategory as direct quotes;
4. Identification of the relationship between the subcategories and between the domains.

The domain analysis method was slightly modified in this analysis, as pre-determined domains were used that corresponded with the qualitative questionnaire categories. This was done to maintain the categories, as these were separately of public health importance.

During the qualitative data analysis, a comparison was made of the motivating factors of male versus female participants to attend CHCT. It was also examined whether males and females had different experiences of the CHCT process, as

presented in the qualitative data analysis. In addition to this analysis, comparisons were made within couples with regard to answering the following questions, among others:

- Within the same couple, are the factors motivating the male and female members to test their HIV status the same?
- Within the same couple, do the male and female members of the couple report the same experiences in the CHCT session or not?
- Do both members of a couple have the same post-CHCT experiences?
- What do couples and individuals think and report about HIV infection and its influence on fertility desires?

3.10 Ethics

The protocol and the informed consent forms were reviewed by the University of Cape Town Research Ethics Committee as well as by the PIP Ancillary Study Committee at the University of Washington. Before the onset of the study, approval was obtained from both of these committees. Appendix 11 is a copy of the UCT ethics approval letter.

3.10.1 Consent procedures

Study personnel obtained written individual informed consent from all participants before qualitative or quantitative data were collected. Participants who were illiterate were asked to mark a thumbprint in the presence of an impartial witness. The informed consent explained:

- the purpose of the study;
- the voluntary nature of participation;
- what was involved in participation, including the duration of the interview;
- the risks and benefits of participation;
- the protection of the participant's privacy (that is confirming that all information provided would be completely confidential and would only be viewed and used by the researchers on this project and
- the participant's right to decide not to participate, to refuse to answer any question, or to withdraw from the interview at any time without any penalty.

The informed consent forms are presented in Appendices 10 and 11. Please note that the attached consent forms are in English. These were translated to IsiXhosa and back translated to English for verification. Participants gave their consent, and they were interviewed, in a language of their choice that ensured maximum comprehension. Over 95% of the participants chose IsiXhosa as their preferred language. The informed consent documents were translated into isiXhosa (with back-translations to ensure appropriate phrasing) prior to the initiation of research.

3.10.2 Protection of privacy and confidentiality

All data were identified only by a unique participant number and kept in confidential files. Assurance that no individual identifying information would be disclosed in reports, publications, or presentations was given.

3.10.3 Risks and benefits of participation

The only risk of participation was some risk of loss of privacy; however, procedures to ensure the protection of privacy and confidentiality were observed to minimize this possibility. There were no guaranteed benefits to individual participants from participation, but couples were informed that participation in this study could help to improve CHCT services. Each participant in this study was given a transport reimbursement of R25.00 (US\$3.30) for each interview attended.

3.10.4 Risk reduction counselling and couple referrals

The participants were informed at all stages in the process about the importance of risk reduction to prevent HIV transmission to the negative partner in serodiscordant relationships, to prevent HIV acquisition in HIV concordant negative couples, and to prevent super-infection in HIV concordant positive couples. Couples were informed about the importance of the use of condoms to prevent HIV transmission. Male and female condoms were provided free of charge to all couples who needed them. In cases where sensitive information about marital conflict or abuse was revealed, the couples were referred to relevant places for counselling. Please see Appendix 14 for a list of these referral places.

3.11 Summary of methods

In summary, in this study, after the couple had presented to the research clinic, individual consent was obtained from each member of the couple. There were questionnaire administered at baseline (prior to CHCT) and immediately post CHCT. Couples were invited to return to the clinic a month later for a follow-up interview. All the questionnaires in this study as well as the qualitative interview were administered to each member of the couple separately. Figure 3.3 is the schematic of the study conduct for the quantitative component of the study.

University of Cape Town

CHAPTER 4: RESULTS

Section 4.1 presents the background to this study. The characteristics of the male and female respondents are delineated and compared to arrive at a clear picture of the nature of this particular research population, as this influences the interpretation of the findings in this thesis. The remainder of the chapter discusses the different issues of interest in couples, according to the study objectives.

Using *individual HIV status* as the outcome variable, the first part of Section 4.2 compares HIV positive and HIV negative individuals and identifies the socio-behavioural predictors of HIV serostatus in individuals. In contrast, the second part of this section uses *couple HIV status* as the outcome variable, by comparing HIV concordant negative, HIV concordant positive and HIV serodiscordant couples, as well as determining the behavioural predictors of HIV serostatus in couples.

Using data from both the quantitative and qualitative components of the study, Section 4.3 describes couples' experiences of the couple HIV counselling and testing sessions, which are the focus of this study. A predominantly qualitative evaluation of the CHCT process is presented herein.

Section 4.4 compares the STI treatment seeking behaviours of males and females with regard to the self-reported recent STIs. At the same time, the health services offered in relation to STI treatment are indirectly evaluated with regard to the counselling offered by service providers, the provision of condoms and their advice on notifying the sexual partner. The male and female partner notification practices are described.

The data presented in Section 4.5 is derived mainly from the qualitative exploration on the issue of fertility. This includes the broad community perceptions regarding fertility issues, as well as couples' issues and perceptions regarding fertility. The key results focus on the influence of individual and couple HIV status on couples' fertility plans and desires.

Lastly, Section 4.6 compares the responses of individual members of the couple to questions where it is expected that partners would provide identical responses. The aim of this is to assess interpartner reliability of self-reporting in respect of key demographic characteristics and sexual practices in couples.

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4.1 Background

Between September 2006 and November 2007, all couples who attended the research clinic were asked to participate in the study. In total, 835 couples were invited to participate. Of these, 602 couples (1204 individuals) agreed to do so, giving a response rate of 72%. The demographic characteristics of those who were not willing to participate and their reasons were not obtained as part of this study. In addition, data from two couples who did participate in the study was ultimately excluded from the data analysis, as they had not responded to most of the questions on the questionnaire, and as their HIV status was unknown, because they did not proceed with the HIV testing. In the end, therefore, data were analysed for 600 couples (or 1200 individuals).

All the individuals were requested to return to the research centre for a follow-up interview about a month after the HIV test and the baseline interview. In total, 566 (47%) individuals returned for the follow-up interview. Of these, there were 258 couples (43% of the 600 couples) in addition to 50 individuals (who had previously been part of couples). The follow-up rate was lowest for serodiscordant partnerships.

Figure 4-1 is a schematic diagram of the study participants.

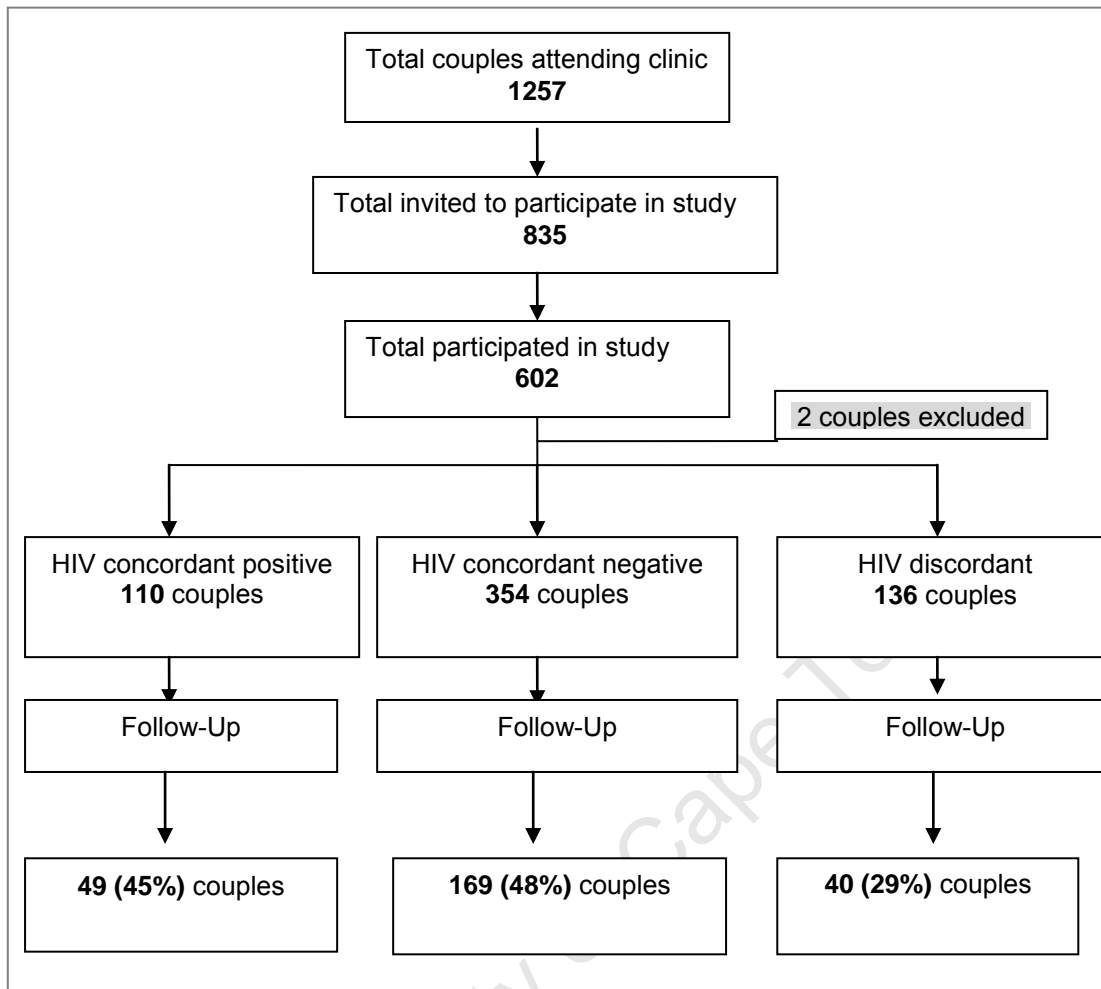


Figure 4-1 : Study respondents

4.1.1 Individual demographic characteristics

Table 4-1 shows the demographic characteristics of the study participants. Aged between 18 and 67 years, their median age was 33 years. Male respondents were significantly older than female respondents were (median age of 35 years compared to 31 years, $p < 0.01$). The research took place in a predominantly IsiXhosa speaking area and, as expected, over 95% of both male and female respondents were IsiXhosa speaking. About half of the respondents lived in informal housing with a median household size of four individuals (adults and children included). Household sizes ranged from one to 16 occupants. Overall, 61% of all respondents lived together with their partner. Nineteen per cent of all respondents were married to their partner. Further analysis of the marital and cohabitation status indicated that 2% were married but not living together, whereas 70% were living together but not married. The number of years of

education ranged from 0 to 15 years, with the median being 10. Less than 2% of the participants had never been to school.

Almost a third (28%) of all respondents was employed. Significantly more men than women were employed (38% versus 18% $p < 0.01$). Of all those who were indeed employed, 91% were semi-skilled employees. This category included builders, general labourers, domestic workers, child-minders and craft-makers. The median household income was R600 (US\$80) a month. The median household income reported by women (R500 or US\$66) was significantly less than that for men (R840 or US\$111) ($p = 0.023$). It is important to note that 13% of all respondents reportedly earned no income at all.

The individual members of the couples were asked about the duration of their relationship. In about 40% of the couples, there was inconsistency in their responses to this question (that is the male and female members of the couple reported different durations). This variation was by months in many cases and in fewer cases, years. Because of the difficulty of verifying this data field, the average duration (that is male report plus female report divided by 2) was presented instead. In summary, the shortest duration of partnership reported was one month, and the longest was 36 years. The median duration was 4 years and the mean duration was 5.7 years.

Table 4-1: Demographic characteristics by sex

	Females N =600	Males n =600	P value	Total n = 1200
Age (years)				
-Median (Range)	31(18 – 66)	35(18 – 67)	<0.01	33(18 – 67)
Home Language				
-Xhosa	572 (95.3)	572 (95.3)		1144 (95.3)
-Zulu	4 (0.7)	9 (1.5)		13 (1.1)
-Afrikaans	20 (3.3)	4 (0.7)		24 (2.0)
-English	0	3 (0.5)		3 (0.3)
-Other	4 (0.7)	12 (2.0)	<0.01	16 (1.3)
Married	106 (17.8)	117(19.6)	0.422	223(18.7)
Living with partner	359 (60.0)	364 (61.3)	0.660	723 (60.7)
Housing type				
-Informal	293 (48.8)	298 (49.7)		591 (49.3)
-Formal	307 (51.2)	302 (50.3)	0.773	609 (50.7)
Household size				
-Median(Range)	4(1 – 16)	3(1 – 16)	0.051	4(1 – 16)
Importance of Religion				
-Very important	505 (84.2)	375 (62.7)		880 (73.4)
-Somewhat important	60 (10.0)	153 (25.6)		213 (17.8)
-Not very important	35 (5.8)	69 (11.5)		104 (8.7)
-Don't know		1 (0.2)	<0.01	1 (0.1)
Education (years at school)				
-Median (Range)	10 (0 – 15)	10 (0 – 15)		10 (0 – 15)
Number of years at school				
0	4 (0.7)	14 (2.3)		18 (1.5)
1 - 7	90 (15.0)	133 (22.2)		223 (18.6)
8 - 12	487 (81.3)	438 (73.0)		925 (77.1)
>12	18 (3.0)	15 (2.5)	<0.01	34 (2.8)
Employed	110 (18.3)	230 (38.3)	<0.01	340 (28.3)
Main kind of work (n=340)				
-Professional	2 (1.8)	3 (1.3)		5 (1.5)
-Skilled	10 (9.1)	15 (6.5)		25 (7.4)
-Semi-skilled	98 (89.1)	212 (92.2)	0.644	310 (91.1)
Household income (monthly)				
-Median (Range)	500 (0 – 8000)	840 (0 – 14000)	0.023	600(0 – 14000)
Income categories (monthly)				
0	35 (5.8)	115 (19.2)		150 (12.5)
R1 - R1000	391 (65.3)	230 (38.5)		621 (51.9)
R1001 - R2500	132 (22.0)	184 (30.8)		316 (26.4)
>R2500	41 (6.8)	69 (11.5)	<0.01	110 (9.2)

4.1.2 HIV testing history and HIV status

Table 4-2 summarises the individual HIV testing history and HIV status stratified by sex. Of the 1200 individuals who were enrolled in this study, 844 (70%) tested HIV negative and 354 (30%) tested HIV positive. There was a significant association between HIV status and gender. Overall, 35% of the female participants compared to 24% of the male participants tested HIV positive ($p < 0.01$). The couple HIV status is illustrated in Table 4-8 and described in detail in Section 4.2.3 .

A total of 574 individuals (48%) had previously been tested for HIV in the context of individual VCT at another testing facility; the participants in this study had had between one and 12 previous HIV tests, with a median of one previous test. There was a significant association between gender and previous HIV test, with 56% of women reporting that they had previously had an HIV test, compared to 40% of the men ($p < 0.01$). The HIV results from the previous test were not significantly different between males and females (11% of the females were HIV positive compared to 7% of the males in previous HIV tests ($p = 0.36$)).

When asked about the self-perception of risk for HIV infection, there was a significant association between this and gender ($p = 0.01$) (Table 4-3). Women (22%) were more likely than men (15%) to consider themselves at risk of being infected with HIV. The significant reasons why women thought they were at increased risk were: the suspicion that their partner had multiple partners ($p = 0.005$), and the lack of trust in their male partner ($p < 0.01$). For men, the significant reason for perceiving themselves to have an increased risk of HIV infection was having multiple partners ($p < 0.01$). However, overall the biggest reason in both men and women, reported by over 40% of the participants in this regard, was the non-use of condoms. For those who did not consider themselves at risk of HIV infection, the most common reason for their perceived reduced HIV infection risk was not having multiple partners (69%).

Table 4-2: Individual HIV status and HIV testing history by sex

	Females n =600	Males n =600	P value	Total n = 1200
HIV status				
-Negative	389 (64.8)	455 (75.8)		844 (70.3)
-Positive	211 (35.2)	145 (24.2)	<0.01	356 (29.7)
Tested for HIV before	337 (56.2)	237 (39.5)	<0.01	574 (47.8)
No. of previous HIV tests (n= 574)				
-Median (Range)	1 (1 – 12)	1(1 – 6)	0.122	1 (1 – 12)
No of previous HIV tests (n= 574)				
1	241 (71.5)	181 (76.4)		422 (73.5)
>1	96 (28.5)	56 (23.6)	0.194	152 (26.5)
HIV status from previous test (n= 574)				
-Positive	36 (10.7)	17 (7.2)		53 (9.2)
-Negative	297 (88.1)	217 (91.6)		514 (89.6)
-Don't know/ don't remember	4 (1.2)	3 (1.3)	0.360	7 (1.2)
Previous status disclosure (n= 574)				
-Yes	279 (82.8)	187 (78.9)	0.241	466 (81.2)
Perceived HIV status today				
-Positive	37 (6.2)	20 (3.4)		57 (4.8)
-Negative	93 (15.5)	87 (14.7)		180 (15.1)
-Don't know	469 (78.3)	487 (82.0)	0.061	956 (80.1)
Whether a positive HIV result will surprise the participant				
-Very surprised	372 (62.0)	268 (44.7)		640 (53.3)
-Surprised	60 (10.0)	171 (28.5)		231 (19.3)
-Not so surprised	119 (19.8)	116 (19.3)		235 (19.0)
-Not surprised at all	49 (8.2)	45 (7.5)	<0.01	94 (7.8)
Do you know an HIV positive person				
-Yes	407 (68.3)	282 (47.7)	<0.01	689 (58.1)

Overall, 57% of the respondents reported that they had used condoms with their current partners at some time point. Significantly more females than males reported condom use during the last sexual encounter (70% versus 57%; $p < 0.01$). On rating the protective effect provided by condoms on a five point scale from 'Don't know' to 'Completely effective', women were significantly more likely to rate them as completely effective ($p < 0.01$). Men, in contrast, were more likely to state that the protection provided by condoms was incomplete and to question their effectiveness. Lastly, significantly more men than women did not know the level of protection afforded by condoms.

Table 4-3: Individual HIV risk perception and condom and contraceptive practices

	Females n =600	Males n =600	P value	Total n = 1200
Do you consider yourself at risk of HIV infection?				
-No	116 (19.6)	131 (22.2)		247 (20.9)
-Yes	131 (22.1)	90 (15.3)		221 (18.7)
-Don't know	346 (58.4)	368 (62.5)	0.010	714 (60.40)
Why do you consider yourself at risk? n = 221				
-I don't use condoms	58 (44.6)	38 (42.2)	0.725	96 (43.6)
-I don't trust my partner	45 (34.6)	10 (11.1)	<0.01	55 (25.0)
-My partner has multiple partners	24 (18.5)	5 (5.6)	<0.01	29 (13.2)
-I have multiple partners	6 (4.6)	22 (24.4)	<0.01	28 (12.7)
-I had a blood transfusion	3 (2.31)	1 (1.1)	0.514	4 (1.8)
Why don't you consider yourself at risk? n = 247				
-I don't have multiple partners	82 (70.1)	88 (67.7)	0.758	170 (68.8)
-I trust my partner	34 (28.6)	30 (22.9)	0.305	64 (25.6)
-My partner doesn't have multiple partners	35 (29.4)	25 (19.1)	0.056	60 (24.0)
-I use condoms	16 (13.5)	29 (22.3)	0.069	45 (18.1)
Contraception Use				
-Yes	239 (40.2)	220 (36.8)		459 (38.5)
-No	356 (59.3)	352 (59.0)		708 (59.4)
-Don't know	0 (0)	25 (4.2)	<0.01	25 (2.1)
Prior use of condoms at any time (Yes)	341 (56.8)	340 (56.7)	0.954	681 (56.8)
Use of condoms at last sex (Yes)	240 (70.4)	193 (56.8)	0.000	433 (63.6)
Reason for condom use				
-Pregnancy prevention	64 (35.7)	52 (29.4)		116 (32.6)
-STI prevention	178 (74.2)	134(69.4)	0.275	312 (72.1)
-HIV prevention	147 (61.3)	127(65.8)	0.329	274 (63.3)
- Always use condoms	24(10.0)	44 (22.9)	<0.01	68 (15.7)
Rating the protective effect provided by condoms				
-Completely effective	465 (77.5)	375 (62.5)		840 (70)
-Incomplete protection	25 (4.2)	38(6.3)		63 (5.3)
-Effectiveness questionable	16 (2.7)	35(5.8)		51 (4.3)
-Ineffective	1(0.2)	2(0.3)		3 (0.3)
-Don't know	93 (15.5)	150(25.0)	<0.01	243(20.3)

Regarding the use of contraception in the relationship, significantly more men were unaware whether there was any use of contraception in the relationship ($p < 0.01$). Overall, 239 (40%) of the women reported that they were using some kind of contraception. The most common method of contraception reported by the female respondents was Depo Provera (medroxyprogesterone acetate 3 monthly injections – 17.5%), while the least common was the female condom (0.5%) (Table 4-4). After combining the female responses, the main contraceptive category was the use of injectible hormones, used by 31.3% of the women. Only 2% of the respondents reported using the oral contraceptive pill. Dual

contraceptive use (defined as the use of the barrier method – in other words, a male or female condom – in addition to another hormonal form of contraception or in addition to female sterilisation) was reported by 2% of the women.

Table 4-4: Contraception use reported by female respondents

Type of contraception	Females (n =600)
Male condom	38 (6.3)
Depo (3 months)	105 (17.5)
2 months Injectable	82 ()
Injectible (type not known)	1 (13.7)
Oral contraception	11 (1.8)
Female sterilization	6 (1.0)
Female condom	3 (0.5)
Type of contraception	
Condom	41 (6.8)
Injectible contraceptive	188 (31.3)
Oral contraceptive	11 (4)
Female sterilisation	6(1.8)
Dual Contraception Use	
Yes	10 (1.7)
No	229 (38.2)
Not on contraception	356 (59.3)
No contraception information	5 (0.8)

4.1.3 Sexual characteristics

Table 4-5 shows the sexual characteristics of the study participants. Male and female respondents portrayed substantial differences in their sexual characteristics. Men had their sexual debut at a younger age (Median 17 versus 18, $p < 0.01$). Men had significantly more total lifetime sexual partners (Median 6 versus 2, $p < 0.01$), and reported significantly more sexual acts in the previous month (Median 4 versus 3). Men were less likely to report that their partners had other partners (2% versus 7%, $p < 0.01$), and they were also less likely to know whether their partner had other partners.

Table 4-5: Sexual characteristics of participants by sex

	Females n =600	Males n =600	P value	Total n = 1200
Age at first sexual encounter(n=1191)				
-Mean	17.6	17.1		17.4
-Median	18	17	<0.01	17
-Range	12 to 30	9 to 38		9 to 38
Total lifetime sexual partners (n=1178)				
-Mean	3.08	9.6		6.3
-Median	2	6	<0.01	3
-Range	1 to 21	1 to 250		1 to 250
New sexual partners in the past 6 months (n=813)				
-Mean	0.2	0.4		0.3
-Median	0	0	<0.01	0
-Range	0 to 4	0 to 8		0 to 8
New sexual partners in the past year (n=1105)				
-Mean	0.16	0.6		0.4
-Median	0	0	<0.01	0
-Range	0 to 4	0 to 10		0 to 10
Total sexual partners in the past year (n=1190)				
-Mean	1.2	1.6		1.4
-Median	1	1	<0.01	1
-Range	1 to 10	1 to 20		1 to 20
Total current partners (n=1179)				
-Mean	2.1	3.5		2.8
-Median	2	2	0.017	2
-Range	1 to 15	1 – 70		1 to 70
Average sexual encounters in the past one month (n=1179)				
-Mean	4.3	6.6		5.4
-Median	3	4	<0.01	4
-Range	0 - 31	0 - 60		0 - 60
Does your partner have other partners?				
-Yes	43 (7.2)	11 (1.8)		54 (94.5)
-No	408 (68.5)	367 (61.5)		775 (65.0)
-Don't know	145 (24.3)	219 (36.7)	<0.01	364 (30.5)
Partner's current partners (n=54)				
-Mean	2.3	2.4		2.3
-Median	2	2	0.475	2
-Range	2 to 6	2 to 4		2 - 6
Circumcised	568 (94.7)	560 (93.3)	0.331	1128 (94.0)

Alcohol use in the study was measured by means of AUDIT-C as the hazardous drinking screening tool. Over 50% of the individuals interviewed had a positive AUDIT-C score, thus indicating that they are hazardous alcohol drinkers (Table 4-6). Hazardous drinkers were more likely to be residing in informal areas ($p<0.01$) and less likely to have had a previous HIV test ($p<0.01$). Hazardous drinkers were also less likely to have ever used condoms with their current partner ($p=0.017$) and less likely to have used a condom during the last sexual encounter

($p < 0.01$). They were generally poorer ($p < 0.01$) and reported more lifetime sexual partners, as well as more sexual encounters in the past one month ($p < 0.01$). There was a significant association between gender and positive AUDIT-C score, with 46% of women compared with 71% of males being AUDIT-C positive ($p < 0.01$).

In general, less than 2% of the participants reported having ever had transactional sex (that is having received something in return for sex, such as money, clothes, shelter or protection). Five per cent reported that they had been forced to have sex against their will at least once. About a third of the participants reported that they had had sex under the influence of alcohol. Compared with women, more men reported having sex under the influence of alcohol ($p < 0.01$) and having sex under the influence of mind-altering drugs ($p < 0.01$). (In this study community the most commonly used mind-altering drugs are methamphetamines and marijuana)

Table 4-6: Alcohol and drug use by sex

	Females n =600	Males n =600	P value	Total n = 1200
AUDIT-C score				
-Median	3	7	<0.01	6
-Range	(0 – 13)	(0 – 13)		(0 – 13)
Positive AUDIT-C score	275 (45.8)	425 (70.8)	<0.01	700 (58.3)
Ever paid money for sex				
-Yes	5 (0.8)	13 (2.2)		18 (1.5)
-No	595 (99.2)	587 (97.8)	0.057	1182 (98.5)
Ever been offered money for sex				
-Yes	9 (1.5)	10 (1.7)		19 (1.6)
-No	591 (98.5)	590 (98.3)	0.817	1181 (98.4)
Ever been forced to have sex				
-Yes	31 (5.2)	29 (4.8)		60 (5.0)
-No	569 (94.8)	571 (95.2)	0.791	1140 (95)
Ever had sex under the influence of alcohol				
-Yes	129 (21.5)	257 (42.8)		386 (32.2)
-No	471 (78.5)	343 (57.2)	<0.01	814 (67.8)
Ever had sex under the influence of mind-altering drugs				
-Yes	4 (0.7)	21 (3.5)		25 (2.1)
-No	596 (99.3)	579 (96.5)	<0.01	1175 (97.9)

The participants' history of STIs was assessed. Recent STIs in this study were defined as having had genital ulcers and/or genital discharge (as self-reported by respondents) in the past year. Table 4-7 shows the previous STI history of participants. Significantly more females reported having had a genital discharge

in the past year (23% versus 9%, $p < 0.01$). It is worth noting that more than 75% of those with a history of genital ulcers or discharge had discussed these symptoms with their sexual partners.

Table 4-7: STI history

	Females n =600	Males n =600	P value	Total n = 1200
Genital discharge in the past 1 year				
-Yes	138 (23.0)	53 (8.8)		191 (15.9)
-No	462 (77.0)	547 (91.2)	<0.01	1009 (84.1)
Discussed discharge with partner				
-Yes	104 (75.9)	46 (86.8)		150 (79.0)
-No	33 (24.1)	7 (13.2)	0.099	40 (21.1)
Genital ulcers in the past 1 year				
-Yes	37 (6.2)	37 (6.2)		74 (6.2)
-No	563 (93.8)	563 (93.8)	1.00	1126 (93.8)
Discussed ulcer with partner				
-Yes	29 (78.4)	33 (89.2)		62 (83.8)
-No	8 (21.6)	4 (10.8)	0.207	12 (16.2)
STI treatment ever in lifetime				
-Yes	151 (25.2)	141 (23.5)		292 (24.3)
-No	449 (74.8)	459 (76.5)	0.501	908 (75.7)

4.1.4 Couple characteristics

Table 4-8 summarises the characteristics of the couples who participated in this study. A comparison of their HIV status reveals that, of the 600 couples tested for HIV, 354 (59%) were HIV concordant negative, 136 (23%) were HIV serodiscordant, and 110 (18%) were HIV concordant positive. Of those who were HIV serodiscordant, 101 (74%) were couples in which the HIV positive partner was female, whereas 35 (26%) were couples in which the HIV positive partner was male. The age differences between members of a couple ranged between 0 to 28 years, with a median of 4 years. In 49 (8%) couples, the male and female partners were of the same age. In 425 (71%) couples, the male partner was older. This ranged from one year older to 28 years older, with a mean of 7 years older. In 126 couples (21%), the female was the older partner by one to 17 years, with a mean of 4 years older.

It is noteworthy that, in 38% of the couples, both members of the couple were classified as hazardous drinkers, as measured by the positive AUDIT-C score. It is also worth noting that, in 27% of the couples, both partners had previously undergone an HIV test in the context of individual VCT at another HIV testing facility.

Table 4-8: Couple Characteristics

	Total n=600
Couple HIV Status	
Concordant positive	110 (18.3)
Concordant negative	354 (59.0)
Serodiscordant	136 (22.7)
Age	
Age difference (y)	
-Median	4
-Range	0 – 28
Marriage And Living Together	
Married	102 (17.0)
Both report living together	341(56.8)
Socio-economic Status	
One employed	273 (45.5)
Both employed	67(11.2)
Both unemployed	327 (54.5)
Total income	
-Median	1 600
-Range	0 – 14000
Alcohol Consumption	
Positive AUDIT-C score in one or both	472(78.7)
Positive AUDIT-C score in both	228(38.0)
HIV testing behaviour	
One or both have had previous HIV test	413(68.8)
Both have had previous HIV test	161(26.8)

4.1.5 Follow-up participants

All the individuals who participated in the study at baseline were requested to return to the research centre for a follow-up interview one month later. 566 individuals (47%) returned for this interview. Of these, 289 (48%) were female and 277 (46%) were male participants. Of the 566 individuals who returned for follow-up, there were 258 couples (43% of the 600 couples) in addition to 50 individuals who returned without their partner.

Over 70% of the individuals who returned for the follow-up interviews were HIV negative (Table 4-9). The median age of the follow-up participants was 35 years. With regard to marital status, 19% of the participants who returned for the follow-up interview were married and 66% were living with their partner.

Table 4-9: Demographic characteristics of the individuals returning for the follow-up interview (n = 566)

	Females n = 289 (48.2%)	Males n = 277 (46.2%)	P value	Total n =566 (47.2%)
HIV status				
-Negative	195 (67.5)	210 (75.8)		405 (71.6)
-Positive	94 (32.5)	67 (24.2)	0.028	161 (28.5)
Age (years)				
-Median (Range)	34 (18 -66)	35 (19 -67)	<0.01	35 (18 -67)
Married	51 (17.8)	53 (19.3)	0.661	104 (18.5)
Living with partner	188 (65.3)	183 (66.6)	0.751	371 (65.9)
Housing type				
-Informal	140 (48.4)	137 (49.5)		277 (48.9)
-Formal	149 (51.6)	140 (50.5)	0.809	289 (51.1)
Education (years)	10 (1 - 15)	10 (0 - 15)		10 (0 - 15)
Employed	55 (19.0)	105 (37.9)	<0.01	160 (28.3)
Previous HIV test	161 (55.7)	105 (37.9)	<0.01	266 (47.0)
Positive AUDIT-C Score	147 (50.9)	208 (75.1)	<0.01	355 (62.7)

Table 4-10 shows a comparison of the participants who came for follow-up interviews and those who did not. Individuals who returned for the follow-up interview were significantly older than those who did not return ($p < 0.01$); they were also more likely to be living together with their partner ($p < 0.01$) and to be hazardous drinkers ($p < 0.01$).

Table 4-10: Comparison of demographic information of those who attended follow-up interviews and those who did not

	Followed-up n = 566	Not followed-up n = 634	P value	Total n = 1200
Sex				
-Females	289 (51.1)	311 (49.1)		600 (50.0)
-Males	277 (48.9)	323 (51.0)	0.488	600 (50.0)
HIV status				
-Negative	405 (71.6)	439 (69.2)		844 (70.3)
-Positive	161 (28.5)	195 (30.8)	0.381	356 (29.7)
Age (years)				
-Median (Range)	35 (18 -67)	31 (18 - 66)	<0.01	33 (18 - 67)
Married	104 (18.5)	119 (18.8)	0.898	223 (18.7)
Living with partner	371 (65.9)	352 (56.0)	<0.01	732 (60.7)
Housing type				
-Informal	277 (48.9)	314 (49.5)		591 (49.3)
-Formal	289 (51.1)	320 (50.5)	0.838	609 (50.8)
Education (years)	10 (0 - 15)	10 (0 - 15)		10 (0 - 15)
Employed	160 (28.3)	180 (28.4)	0.962	340 (28.3)
Previous HIV test	266 (47.0)	308 (48.6)	0.583	574 (47.8)
Positive AUDIT-C Score	355 (62.7)	344 (54.3)	0.003	699 (58.3)

4.2 The socio-behavioural risk factors for HIV serostatus in individuals and couples

Section 4.2 describes the predictors of HIV status in individuals and in couples.

4.2.1 Individual demographic characteristics by HIV status

Table 4-11 indicates the socio-demographic characteristics of the study participants as stratified by HIV status with unadjusted associations. Some of the key findings are that HIV positive individuals were significantly more likely to be female ($p < 0.01$), informal settlement residents ($p < 0.01$), unemployed ($p < 0.01$) and poor ($p < 0.01$). In addition, significantly more HIV positive people (69%) lived with their partner than did HIV negative people (57%) ($p < 0.01$).

Table 4-11: Demographic characteristics by HIV status

	HIV neg. 844 (70.3%)	HIV pos. 356 (29.7%)	P value	Total 1200 (100%)
Sex				
-Females	389 (46.1)	211 (59.3)		600 (50.0)
-Males	455 (53.9)	145 (40.7)	<0.01	600 (50.0)
Age (years)				
-Median(Range)	34(18 – 67)	32(18 – 66)	0.081	33(18 – 67)
Home Language				
-Xhosa	804 (95.3)	340 (95.5)		1144 (95.3)
-Zulu	7 (0.8)	6 (1.7)		13 (1.1)
-Afrikaans	18 (2.1)	6 (1.7)		24 (2.0)
-English	3 (0.4)	0 (0)		3 (0.3)
-Other	12 (1.4)	4 (1.1)	0.497	16 (1.3)
Housing type				
-Informal	390 (46.2)	201 (56.5)		591 (49.3)
-Formal	454 (53.8)	155 (43.5)	<0.01	609 (50.7)
Household size				
-Median(Range)	4(1 – 16)	3(1 – 16)	0.003	4(1 – 16)
Importance of Religion				
-Very important	620 (73.6)	260 (73.2)		880 (73.4)
-Somewhat important	147 (17.4)	66 (18.6)		213 (17.8)
-Not very important	75 (8.9)	29 (8.2)		104 (8.7)
-Don't know	1 (0.1)	0 (0)	0.858	1 (0.1)
Education (years)	10 (0 – 15)	10 (0 – 15)	0.069	10 (0 – 15)
Employed	261 (30.9)	79 (22.2)	<0.01	340 (28.3)
Main kind of work				
-Professional	3 (1.2)	2 (2.5)		5 (1.5)
-Skilled	24 (9.2)	1 (1.3)		25 (7.4)
-Semi-skilled	234 (89.7)	76 (96.2)	0.044	310 (91.1)
Household income				
-Median	800	450	<0.01	600
-Range	(0 – 14000)	(0 – 7000)		(0 – 14000)
Living with partner	477 (57.0)	246 (69.3)	<0.01	723 (60.7)
Married	162(19.3)	61(17.2)	0.384	223(18.7)

Before the HIV test and the pre- and post-test counselling at the research clinic, all the participants were individually interviewed by means of interviewer-administered questionnaires regarding their HIV testing behaviour as well as their perceptions of HIV infection risk. Overall, 574 (48%) individuals had previously tested for HIV at another HIV testing facility, not at the research clinic (Table 4-12). Individuals who had previously tested for HIV were more likely to know someone who was HIV positive and to know about ARVs, than were those who had not tested before. Significantly more of those who had previously undergone HIV testing reported that they had ever used condoms with their current partner (64% versus 51%, $p < 0.01$). A comparison of those who had tested for HIV before and those who had not revealed no significant difference in the proportion of those who reported condom use during their last sexual encounter.

There was a significant association between previous HIV testing and current HIV status ($p < 0.01$). HIV negative individuals were significantly more likely to have undergone previous HIV testing than were HIV positive individuals. Regarding their HIV status from the previous test, 97% of those who were HIV negative after the current test reported that their previous test result was HIV negative too. 12 (3%) of those who tested HIV negative in the current test reported that they had previously tested HIV positive, which might have been a recall error. Another attention-grabbing finding is that 68% of the individuals who tested HIV positive this time reported being HIV negative at the previous test.

On being asked to classify themselves, based on what they thought their HIV status was going to be on the day of HIV testing, the majority (80%) did not know; 18 (2%) of those who were HIV negative at the research clinic thought that they were going to have an HIV positive result; 20 (6%) of the HIV positive individuals thought that they were going to have an HIV negative result.

Table 4-12: HIV testing history by HIV status

	HIV neg. n = 844	HIV pos. n = 356	P value	Total n = 1200
Tested for HIV before	426 (50.5)	148 (41.6)	<0.01	574 (47.8)
No. of previous HIV tests (n= 574)	1	1	0.350	1
-Range	(1 – 12)	(1 – 6)		(1 – 12)
HIV status from previous test (n= 574)				
-Positive	12 (2.8)	41 (27.7)		53 (9.2)
-Negative	413 (97.0)	101 (68.2)		514 (89.6)
-Don't know/ don't remember	1 (0.2)	6 (4.1)	<0.01	7 (1.2)
Previous status disclosure (n= 574)				
-Yes	351 (82.4)	115 (77.7)	0.208	466 (81.2)
Perceived HIV status today				
-Positive	18 (2.1)	39 (11.1)		57 (4.8)
-Negative	160 (19.0)	20 (5.7)		180 (15.1)
-Don't know	663 (78.8)	293 (83.2)	<0.01	956 (80.1)
How a positive result will surprise				
-Very surprised	473 (56.0)	167 (46.9)		640 (53.3)
-Surprised	164 (19.4)	67 (18.8)		231 (19.3)
-Not so surprised	159 (18.8)	76 (21.4)		235 (19.0)
-Not surprised at all	48 (5.7)	46 (12.9)	<0.01	94 (7.8)
Do you know an HIV positive person?				
-Yes	487 (58.5)	202 (56.9)		689 (58.1)
Do you consider yourself at risk of HIV infection?				
-No	193 (23.0)	54 (15.7)		247 (20.9)
-Yes	140 (16.7)	81 (23.6)		221 (18.7)
-Don't know	505 (60.3)	209 (60.8)	<0.01	714 (60.4)
Why do you consider yourself at risk?				
-I have multiple partners	21 (15.1)	7 (8.6)	0.165	28 (12.7)
-My partner has multiple partners	17 (12.2)	12 (14.8)	0.585	29 (13.2)
-I don't trust my partner	33 (23.7)	22 (27.2)	0.572	55 (25.0)
-I don't use condoms	61 (43.9)	35 (43.2)	0.922	96 (43.6)
-I had a blood transfusion	0 (0)	4 (4.9)	<0.01	4 (1.8)
Why don't you consider yourself at risk?				
-I don't have multiple partners	137(71.4)	33(60.0)	0.109	170 (68.8)
-My partner doesn't have multiple partners	49 (25.3)	11 (19.6)	0.386	60 (24.0)
-I trust my partner	51 (26.3)	13 (23.2)	0.642	64 (25.6)
-I use condoms	38 (19.6)	7 (12.7)	0.243	45 (18.1)

4.2.2 Perceptions of HIV infection risk

Among all the study participants, 19% of individuals indicated that they considered themselves to be at risk of HIV infection. Of these, a significantly higher proportion was among the HIV positive participants (24%) compared to the HIV negative ones (17%) ($p<0.01$). Of those who considered themselves to be at risk, the most common reason was that they had not used condoms (44%). The most common protective factor, as perceived by the participants, was that of not having multiple partners; this was mentioned by 69% of respondents. There was a non-significant association between resultant HIV status and having sex under

the influence of alcohol or having sex under the influence of mind-altering drugs. Most of the individual sexual characteristics did not differ significantly according to individual HIV status (Table 4-13). HIV positive individuals were more likely to have had a genital discharge (21% versus 14%, $p < 0.01$) and genital ulcers (10.1% versus 4.5%, $p < 0.01$) in the past year.

Table 4-13: Sexual characteristics

	HIV neg.	HIV pos.	P value	Total
Age at first sexual encounter (n=1191)				
-Mean	17.4	17.3		17.4
-Median	17	17	0.484	17
-Range	11 to 38	9 to 32		9 to 38
Total lifetime sexual partners (n=1178)				
-Mean	6.4	6.1		6.3
-Median	3	3	0.294	3
-Range	1 to 250	1 to 70		1 to 250
New sexual partners past 6 months (n=813)				
-Mean	0.37	0.22		0.3
-Median	0	0	0.027	0
-Range	0 to 8	0 to 4		0 to 8
New sexual partners in the past year (n=1105)				
-Mean	0.4	0.3		0.4
-Median	0	0	0.389	0
-Range	0 to 10	0 to 10		0 to 10
Total sexual partners in the past year (n=1190)				
-Mean	1.4	1.3		1.4
-Median	1	1	0.739	1
-Range	1 – 20	1 – 5		1 to 20
Total current partners (n=1179)				
-Mean	2.7	2.9		2.8
-Median	2	2	0.102	2
-Range	1 – 50	1 – 70		1 to 70
Average sexual encounters in past one month				
-Mean	5.4	5.6		5.4
-Median	4	4	0.068	4
-Range	0 to 60	0 to 31		0 - 60
Does your partner have other partners?				
-Yes	32 (3.8)	22 (6.2)		54 (94.5)
-No	548 (65.4)	227 (63.9)		775 (65.0)
-Don't know	258 (30.8)	106 (30.0)	0.195	364 (30.5)
Partner's current partners (n=54)				
-Mean	2.4	2.3		2.3
-Median	2	2	0.443	2
-Range	2 to 5	2 to 6		2 - 6
Circumcised ⁶	786 (93.13)	342 (96.1)	0.050	1128 (94.0)

⁶ Questions asked were: **Men:** Are you circumcised? **Women:** Is your partner circumcised?

Transactional sex was quite rare and reported by less than 2% of all participants. Only 5% of respondents reported having ever been forced to have sex before (Table 4-14).

Table 4-14: Hazardous drinking and transactional sex

	HIV neg.	HIV pos.	P value	Total
AUDIT-C score				
-Median	6	6	0.933	6
-Range	(0 – 13)	(0 – 13)		(0 – 13)
Positive AUDIT-C score	490 (58.1)	210 (59.0)	0.765	700 (58.3)
Ever paid money for sex				
-Yes	12 (1.4)	6 (1.7)		18 (1.5)
-No	832 (98.6)	350 (98.3)	0.731	1182 (98.5)
Ever been offered money for sex				
-Yes	11 (1.3)	8 (2.3)		19 (1.6)
-No	833 (98.7)	348 (97.8)	0.232	1181 (98.4)
Ever been forced to have sex				
-Yes	46 (5.5)	14 (3.9)		60 (5.0)
-No	798 (94.6)	342 (96.1)	0.271	1140 (95)
Ever had sex under the influence of alcohol				
-Yes	267 (31.6)	119 (33.4)		386 (32.2)
-No	577 (68.4)	237 (66.6)	0.544	814 (67.8)
Sex under the influence of mind-altering drugs				
-Yes	19 (2.3)	6 (1.7)		25 (2.1)
-No	825 (97.8)	350 (98.3)	0.531	1175 (97.9)

Genital discharge was reported by significantly more HIV positive (21%) compared to HIV negative (14%) individuals ($p < 0.01$) (Table 4-15). Similar findings were obtained with regard to genital ulcers, which were reported by significantly more HIV positive (10.1%) than HIV negative people (4.5%).

Table 4-15: STI history

	Females	Males	P value	Total
Genital discharge in the past 1 year				
-Yes	117 (13.9)	74 (20.8)		191 (15.9)
-No	727 (86.1)	282 (79.2)	<0.01	1009 (84.1)
Discussed discharge with partner				
-Yes	88 (75.9)	62 (83.8)		150 (79.0)
-No	28 (24.1)	12 (16.2)	0.192	40 (21.1)
Genital ulcers in the past 1 year				
-Yes	38 (4.5)	36 (10.1)		74 (6.2)
-No	806 (95.5)	320 (90.0)	<0.01	1126 (93.8)
Discussed ulcer with partner				
-Yes	33 (86.8)	29 (80.6)		62 (83.8)
-No	5 (19.4)	7 (19.4)	0.463	12 (16.2)
STI treatment ever in lifetime				
-Yes	194 (23.0)	98 (27.5)		292 (24.3)
-No	650 (77.0)	258 (72.5)	0.094	908 (75.7)

Univariate analysis indicated a number of significant risk factors for HIV serostatus in individuals shown in Table 4-16 . Logistic regression analysis to predict the best model of the determinants of HIV positive serostatus in all individuals (men and women) resulted in 4 predictor variables: sex, having a previous HIV test, use of condoms during the last sexual encounter and living together (Table 4-17). Having a previous HIV test and being of the male gender were found to be protective risk factors for HIV infection. More specifically, among the study respondents, males were 56% less likely to be HIV infected compared to women. Individuals who have had a previous HIV test were 44% less likely to be HIV positive than those who had not tested for HIV before. Conversely, it was found that living together with one's sexual partner and having used a condom during the last sexual encounter did not offer protection against HIV infection. In fact, partners who lived together were almost 3 times more likely to be HIV positive than those who did not live together. Lastly, those who reportedly used condoms during their last sexual encounter were 91% more likely to be HIV infected than those who reported not using condoms at the last encounter.

Table 4-16: Univariate model of the determinants of HIV status in individuals

Risk Factor	OR (95% confidence limits)	P value
Sex	0.58 (0.46 – 0.75)	<0.01
Age	0.99 (0.97 – 0.99)	0.026
Employed	0.64(0.48 – 0.85)	<0.01
Married	0.87 (0.63 – 1.20)	0.384
Live together	1.70 (1.31 – 2.22)	<0.01
Housing type	0.66 (0.52 – 0.85)	<0.01
Previous HIV test	0.70 (0.54 – 0.90)	<0.01
Self-perceived risk	1.05 (0.95 – 1.16)	0.309
Positive AUDIT-C score	1.04 (0.81 – 1.34)	0.765
Genital discharge in past year	1.63 (1.18 – 2.25)	<0.01
Genital ulcers in past year	2.39 (1.48 – 3.82)	<0.01
Previous STI treatment	1.27 (0.96 – 1.69)	0.094
Circumcised	1.80 (0.99 – 3.28)	0.053
Age at sexual debut	0.99 (0.95 – 1.04)	0.835
Total lifetime sexual partners	1.00 (0.98 – 1.01)	0.602
Total sexual partners in the past year	0.88 (0.76 – 1.01)	0.067
New sexual partners in past year	0.93 (0.80 – 1.08)	0.321
New partners in past 6 months	0.77 (0.62 – 0.96)	0.023
Frequency of sex in past 1 month	1.01 (0.99 – 1.03)	0.486
Previous use of condoms with current partner	1.02 (0.79 – 1.30)	0.902
Condom use at last sexual encounter	1.65 (1.16 – 2.35)	<0.01

Table 4-17: Multivariate logistic regression model of determinants of HIV sero-status in individuals

	All participants		Women only		Men only	
	OR	95% CI	OR (95% CI)		OR (95% CI)	
Sex	0.44 (0.29 – 0.69)	<0.001				
Age			0.97(0.95-0.99)	0.001		
Live together	2.87 (1.86 – 4.42)	<0.001	1.91(1.31-2.80)	0.001	1.89 (1.24-2.88)	0.003
Housing type						
Previous HIV test	0.56 (0.36 – 0.87)	0.010	0.53(0.36-0.76)	0.001	0.53 (0.34 –0.81)	0.003
Positive AUDIT-C score			1.65(1.14-2.40)	0.008		
Genital ulcers in past year			2.59(1.25-5.40)	0.011		
Condom use at last sexual encounter	1.91 (1.26 – 2.90)	0.002				

Note: Risk factors entered in model building include: sex, age, male circumcision, living together, housing type, employment status, income, previous HIV test, new partners in the past 6 months, genital discharge, genital ulcers and condom use during their last sexual encounter. (p =0.05)

4.2.3 Couple demographic characteristics by HIV status

Of the 600 couples who were enrolled in the study, 354 (59%) were HIV concordant negative, 136 (23%) were HIV serodiscordant and 110 (18%) were HIV concordant positive. Of those who were HIV serodiscordant, 101 (74%) were HIV positive female and 35 (26%) were HIV positive male partners. Only 17% of couples reported that they were married to each other, and this proportion did not differ by HIV status (Table 4-18). Couples who were HIV concordant positive were significantly more likely to be living together (71%) compared with concordant negative (54%) and serodiscordant couples (54%) ($p < 0.01$).

There was no significant association ($p = 0.262$) between median age difference and the couple's HIV status. There was also no significant difference between the three groups of couples with regard to employment status. However, concordant negative couples were the richest (median total monthly income R1700), whereas concordant positive couples were the poorest (median R1200) ($p = 0.03$).

In over 75% of the couples, at least one member of the couple was a hazardous drinker as indicated by a positive AUDIT-C score. This did not differ among the three categories of couples. In slightly more than a third (38%) of the couples, both partners were hazardous drinkers. Again, this did not differ among the three categories of couples.

In 68% of the couples, at least one member of the couple had undergone a previous HIV test. This proportion was highest in concordant negatives (73%) and lowest in concordant positives (62%), which was a significant association ($p=0.05$). Furthermore, in close to a third of concordant negative couples (32%) both members had had previous HIV tests, compared with 23% of serodiscordant couples and 15% of concordant positives (15%) ($p<0.01$).

Table 4-18: Demographic characteristics by couple status

	Concordant negative n= 354	Concordant positive n=110	Serodiscordant n=136	P value	Total n=600
Age					
Age difference (y)					
-Median	4	5	5	0.262	4
-Range	0 - 23	0 - 25	0 - 28		0 - 28
Marriage and living together					
Married	63 (17.8)	20(18.2)	19 (14.0)	0.562	102 (17.0)
Both report living together	190 (53.7)	78 (70.9)	73 (53.7)	<0.01	341(56.8)
Socio-economic status					
One employed	175(49.4)	42(38.2)	56 (41.2)	0.060	273 (45.5)
Both employed	45 (12.7)	9 (8.2)	13 (9.6)	0.334	67(11.2)
Both unemployed	179 (50.6)	68 (61.8)	80 (58.8)	0.060	327 (54.5)
Total income					
-Median	1 700	1 200	1 555	0.030	1 600
-Range	0-14 000	0 -11000	0 – 11 500		0 - 14000
Alcohol consumption					
Positive AUDIT-C score in one or both	270 (76.3)	90(81.8)	112(82.4)	0.227	472(78.7)
Positive AUDIT-C score in both	127(38.9)	41(37.3)	60(44.1)	0.239	228(38.0)
HIV testing behaviour					
One or both have previous HIV test	257 (72.6)	68 (61.8)	88 (64.7)	0.050	413(68.8)
Both have previous HIV test	114 (32.2)	16 (14.6)	31 (22.8)	<0.01	161(26.8)
Condom use practices					
Both report condom use at last sex	71 (20.1)	25 (22.7)	45 (33.1)	<0.01	141(23.5)
Both report having previously used condoms	154 (43.5)	46 (41.8)	68 (50.0)	0.346	268(44.7)

Condom use behaviour was compared between the three categories of couples, with 45% of all the couples reporting that they had used condoms at some stage in their relationships. There were no differences between the three categories. However, there was a significant association with regard to the reporting of condom use during the last sexual encounter. Most condom use at last encounter

was reported by serodiscordant couples (33%), as compared to concordant positive (23%) and concordant negative couples (20%) ($p < 0.01$). Figure 4-2 gives a summary graphical comparison of the three groups of couples.

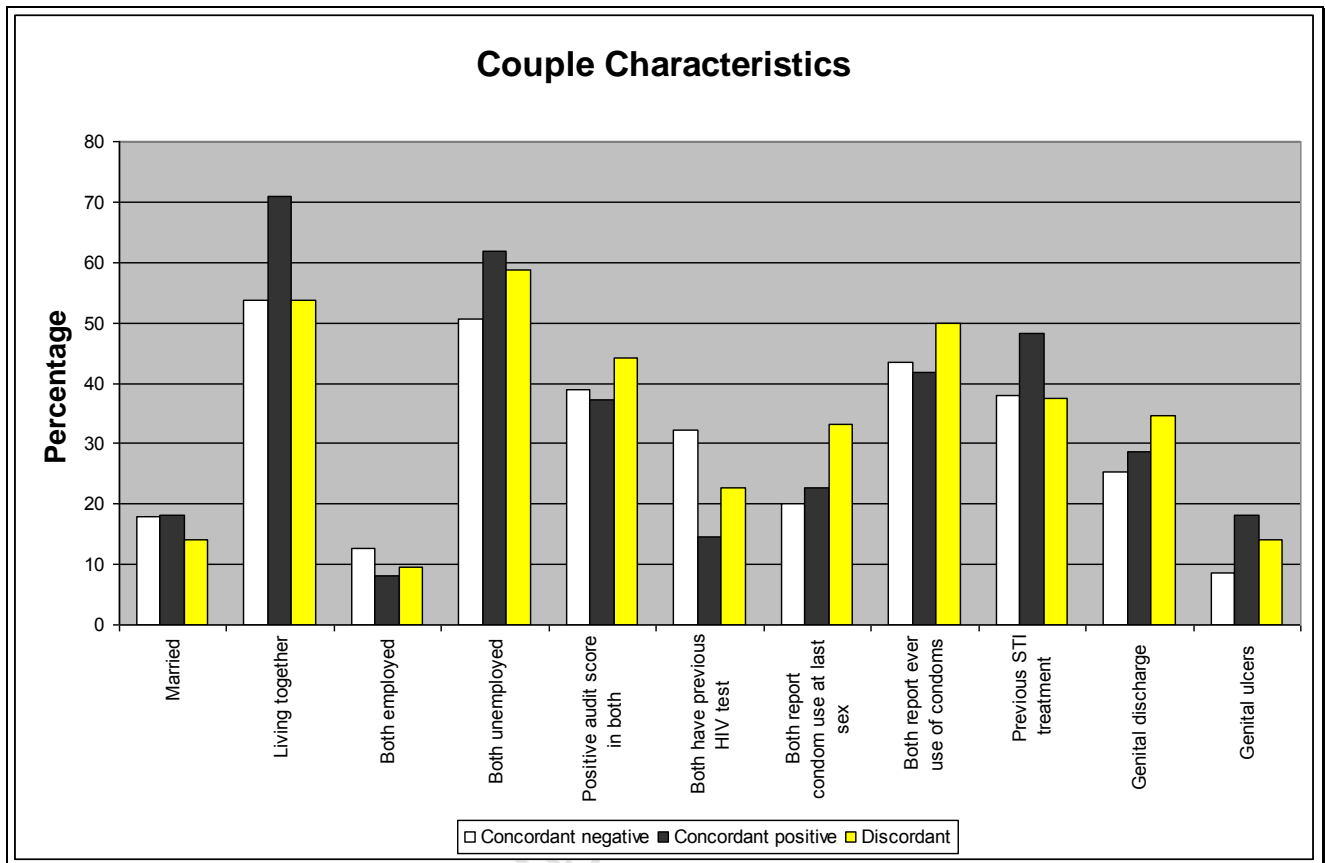


Figure 4-2 : Couple characteristics

Table 4-19 indicates the male and female individual demographic characteristics stratified by couple status. There were some significant differences recorded with regard to HIV testing history. Significantly more females and males in concordant negative partnerships had tested for HIV before. Furthermore, females in concordant positive relationships considered themselves to be at HIV infection risk, whereas significantly more men in HIV serodiscordant relationships considered themselves to be at HIV infection risk.

Table 4-19: Male and female individual demographic characteristics stratified by couple status

	Concordant negative n= 354	Concordant positive n=110	Serodiscordant n=136	P value
Age (Years) median				
-Females	32 (18 - 66)	30(18 - 64)	30(18 - 58)	0.370
-Males	36(18 - 67)	35(21 - 66)	35(18 - 64)	0.695
Number of years at school median				
-Females	10(0 - 15)	10(0 - 15)	10(0 - 15)	0.161
-Males	10(0 - 15)	9(0 - 15)	10(0 – 15)	0.138
Socio-economic Status				
Employed %				
-Females	75 (21.2)	15 (3.6)	20 (14.7)	0.093
-Males	145 (41.0)	36 (32.7)	49 (36.0)	0.246
Income median				
-Females	600(0 - 8000)	380(0 - 7000)	400(0 - 7000)	0.020
-Males	900(0 - 14000)	550(0 - 7000)	995(0 - 9000)	0.089
Alcohol Consumption				
Positive AUDIT-C score%				
-Females	150 (42.4)	55 (50.0)	70 (51.5)	0.121
-Males	247 (69.8)	76 (69.1)	102 (75.0)	0.473
Sex under the influence of alcohol%				
-Females	71 (20.1)	24 (21.8)	34 (25.0)	0.489
-Males	146 (41.2)	51 (46.4)	60 (44.1)	0.601
HIV Testing Behaviour				
Tested for HIV before%				
-Females	213 (60.2)	49 (44.6)	75 (55.2)	0.015
-Males	49 (44.6)	35 (31.8)	44 (32.4)	<0.01
Consider themselves at risk of HIV infection%				
-Females	61 (17.3)	28 (25.9)	42 (22.1)	<0.01
-Males	42 (11.9)	18 (17.0)	30 (22.9)	<0.01
Sexual Behaviour				
Age at sexual debut median				
-Females	18(13 - 30)	17(13 - 29)	18(12 - 23)	0.498
-Males	17(11 - 38)	17(11 - 32)	17(9 - 30)	0.562
Total lifetime sexual partners median				
-Females	2(0 - 20)	3(1 - 21)	3(1 - 15)	<0.01
-Males	6(1 - 60)	7(1 - 70)	6(1 - 103)	0.193
Current partners median				
-Females	2(2 - 5)	2(2 - 6)	2(2 - 5)	0.150
-Males	2(2 - 4)	2(2 - 3)	2(2 - 2)	0.006
Condom Use Behaviour				
Previous use of condoms %				
-Females	199 (56.2)	64 (58.2)	78 (57.4)	0.927
-Males	197 (55.7)	59 (53.6)	84 (61.8)	0.368
Use of condoms at last sexual encounter				
-Females	131 (65.8)	49 (76.6)	60 (76.9)	0.093
-Males	100 (50.8)	35 (59.3)	58 (69.1)	0.016
Rating of condoms as completely effective %				
-Females	269 (76.0)	89 (80.9)	107 (78.7)	0.870
-Males	214 (60.5)	72 (65.5)	89 (65.4)	0.520

As stated earlier, there were a total number of 136 serodiscordant couples and of these, 35 had an HIV positive male and the rest had an HIV positive female member. A comparison was made between those serodiscordant couples in which the positive partner was male and those in which the positive partner was female. The only significant difference between these partnerships was that those in which the female was the positive partner had a greater age difference (with women being the younger partner) compared to those in which the male was the positive partner. Table 4-20 shows the results of this comparison.

Table 4-20: Serodiscordant couples

	Serodiscordant Positive female n = 101	Serodiscordant Positive male n=35	P value	Total n=136
Age				
Age difference (y)				
-Median	6	3		
-Range	0 -28	0-13	0.022	
Marriage and living together				
Married	12 (11.9)	7 (20)	0.232	19 (14.0)
Both report living together	56 (55.5)	17(48.6)	0.482	73 (53.7)
Socio-economic Status				
One employed	39 (38.6)	17 (48.6)	0.302	56 (41.2)
Both employed	10 (9.9)	3 (8.6)	0.818	13 (9.6)
Both unemployed	62 (61.4)	18 (51.4)	0.302	80 (58.8)
Total income				
-Median	1540	2200		
-Range	0 - 11500	100 - 7500	0.302	
Alcohol Consumption				
Positive AUDIT-C score in one or both	84 (83.2)	28 (80.0)	0.672	112 (82.4)
Positive AUDIT-C score in both	45 (44.6)	15 (42.9)	0.862	60 (44.1)
HIV testing behaviour				
One or both have previous HIV test	66 (65.4)	22 (62.9)	0.791	88 (64.7)
Both have previous HIV test	24 (23.8)	7 (20.0)	0.647	31 (22.8)

Table 4-21 indicates the STI treatment history stratified by couple HIV status.

Table 4-21: STI history by couple status

	Concordant negative n= 354	Concordant positive n=110	Serodiscordant n=136	P value	Total n=600
Previous STI treatment in one	134 (37.9)	53 (48.2)	51 (37.5)	0.130	238 (39.7)
Previous STI treatment in both	31 (8.8)	9 (8.2)	14 (10.3)	0.821	54 (9.0)
Genital discharge in one or both	90 (25.4)	39 (28.7)	38 (34.6)	0.170	167(27.8)
Genital discharge in both	9 (2.5)	8 (5.9)	7 (6.4)	0.090	24(4.0)
Genital ulcers in one or both	30(8.5)	20(18.2)	19(14.0)	0.012	69(11.5)
Genital ulcers in both	1(0.28)	2(1.82)	2(1.47)	0.196	5(0.83)

Multivariate analysis resulted in 6 significant risk factors that are determinants of couple status (Tables 4-22 – 4-25). These predictor variables are: partner age difference, living together, employment status, having had a previous HIV test, use of condoms during the last sexual encounter and total sexual partners in the past one year. As compared to HIV concordant negative couples, HIV concordant positive couples were more likely to have a greater age difference ($p=0.046$), to be living together ($p<0.01$), to be both unemployed ($p=0.04$) and less likely to have had a previous HIV test ($p<0.01$). Conversely, when compared to HIV concordant negative couples, HIV serodiscordant couples were more likely to have used a condom during the last sexual encounter ($p<0.01$), to have more total sexual partners in the past year ($p=0.022$) and less likely to have tested for HIV before ($p=0.042$).

Table 4-22: Univariate model of the determinants of HIV sero-status in couples (with concordant negative couples as the reference category)

Risk Factor	HIV concordant positive		HIV serodiscordant	
	OR (95% confidence limits)	P value	OR (95% confidence limits)	P value
Average age sexual debut	0.97 (0.87 – 1.10)	0.657	1.02 (0.92 – 1.14)	0.643
Both had STI Treatment	0.93 (0.43 – 2.02)	0.851	1.20 (0.62 – 2.32)	0.598
Both unemployed	1.58 (1.02 – 2.45)	0.040	1.40 (0.94 – 2.08)	0.102
Both employed	0.61 (0.29 – 1.30)	0.199	0.73 (0.38 – 1.39)	0.335
Married	1.03 (0.59 – 1.79)	0.927	0.75 (0.43 – 1.31)	0.311
Live together	2.10 (1.33 – 3.34)	0.002	1.00 (0.67 – 1.49)	0.999
Condom use last sex	1.17 (0.70 – 1.96)	0.546	1.97 (1.27 - 3.07)	<0.01
Ever condoms	0.93 (0.61 – 1.44)	0.755	1.30 (0.87 – 1.93)	0.196
Average sex past 1 month	1.03 (0.98 – 1.08)	0.247	1.05 (1.01 – 1.10)	0.029
One year sexual partners	0.90 (0.73 – 1.12)	0.356	1.18 (1.02 – 1.36)	0.022
Lifetime sexual partners	1.01 (0.99 – 1.02)	0.410	1.00 (0.99 – 1.02)	0.902
Positive AUDIT- C	1.06 (0.68 – 1.65)	0.790	1.41 (0.94 – 2.11)	0.093
Both tested before	0.36 (0.20 – 0.64)	0.000	0.62 (0.39 – 0.98)	0.042
Age difference	1.04 (1.00 – 1.09)	0.046	1.04 (1.0 – 1.08)	0.083
Total Income	1.00 (1.00 – 1.00)	0.017	1.00 (1.00 – 1.00)	0.589
Genital discharge in one or both	1.54 (0.98 – 2.45)	0.063	1.12 (0.76 – 1.83)	0.464
Genital discharge in both	2.61 (0.95 – 7.17)	0.064	2.40 (0.90 – 6.34)	0.079
Genital ulcers in one or both	2.40 (1.30 – 4.43)	0.005	1.75 (0.95 – 3.24)	0.072
Genital ulcers in both	6.54 (0.59 – 72.8)	0.127	5.27 (0.47 – 58.6)	0.176

Model 1: Demographic variables only

Table 4-23: Multivariate logistic regression model of determinants of HIV sero-status in couples

Risk Factor	HIV concordant positive		HIV serodiscordant	
	OR (95% confidence limits)	P value	OR (95% confidence limits)	P value
Total years at school	1.01 (0.96 -1.07)	0.605	1.00 (0.95 -1.05)	0.981
Total income	1.00 (1.00- 1.00)	0.276	1.00 (1.00- 1.00)	0.357
One or both tested for HIV before	0.84 (0.51 - 1.39)	0.500	0.84(0.52 - 1.35)	0.478
Both tested for HIV before	0.39 (0.20 – 0.74)	<0.01	0.73(0.43- 1.23)	0.238
Positive AUDIT-C score in one or both	1.37 (0.74 - 2.55)	0.317	1.27 (0.72 -2.25)	0.403
Positive AUDIT-C score in both	0.85 (0.51 - 1.42)	0.543	1.16(0.73 -1.83)	0.529
Live together	2.18 (1.31 - 3.63)	<0.01	1.11 (0.71 -1.74)	0.632
Married	0.96 (0.51 - 1.83)	0.909	0.80(0.43 -1.52)	0.500
At least one member employed	0.95 (0.54 - 1.65)	0.852	0.79(0.48 - 1.29)	0.348
Both employed	1.17(0.48- 2.82)	0.727	0.89 (0.42 -1.88)	0.763
Age difference	1.04(1.00 - 1.09)	0.057	1.04 (1.00 -1.08)	0.064

Note: Risk factors entered in model building include: total years at school, total income, one or both tested for HIV before, both tested for HIV before, Positive AUDIT-C score in one or both, Positive AUDIT-C score in both, living together, married, at least one member employed, both employed, age difference.

Model 2: Sexual behaviour variables

Table 4-24: Multivariate logistic regression model of determinants of HIV sero-status in couples

Risk Factor	HIV concordant positive		HIV serodiscordant	
	OR (95% confidence limits)	P value	OR (95% confidence limits)	P value
Total regular sexual partners	1.01 (0.96- 1.08)	0.614	1.04(0.98 1.11)	0.220
New partners in the past 6 months	0.85 (0.55- 1.29)	0.437	0.93 (0.67 1.28)	0.641
Ulcer one or both	2.87 (0.88- 9.37)	0.080	1.88 (0.60 5.84)	0.276
Discharge in one or both	2.37 (0.33-17.02)	0.391	2.65 (0.36 19.55)	0.339
Average sexual debut	1.10(0.91- 1.33)	0.314	1.14 (0.95 1.38)	0.157
Total lifetime partners	1.01 (0.98 -1.05)	0.486	0.97 (0.93 1.02)	0.208
Sexual partners in the past one year	0.97 (0.69 -1.37)	0.872	1.33 (1.03 1.70)	0.027
Average sexual encounters in the past one month	1.04 (0.98 -1.12)	0.197	1.07 (1.01 1.14)	0.031
Ever condom use in both	1.02(0.45- 2.27)	0.970	0.47 (0.20 1.10)	0.082
Condom use last sex in both	1.33 (0.51-3.48)	0.560	2.50 (0.98 6.37)	0.056
STI in past year in one or both	0.51 (0.06 -4.13)	0.525	0.45 (0.06 3.63)	0.453
STI past year in both	0.80 (0.19- 3.43)	0.768	1.59 (0.47 5.40)	0.454
Circumcision	0.69 (0.27- 1.73)	0.423	1.34 (0.66 2.71)	0.413
Concurrency	0.91(0.53 1.57)	0.741	0.93 (0.55 1.58)	0.802

Note: Risk factors entered in model building include: total regular sexual partners, new partners in the past 6 months, ulcer in one or both, discharge in one or both, average sexual debut, total lifetime partners, sexual partners in the past one year, average sexual encounters in the past one month, ever condom use in both, condom use during last sex one or both, condom use during last sex in both, STI in past year in one or both, STI in past year in both, circumcision, concurrency.

Table 4-25: Multivariate logistic regression model of determinants of HIV sero-status in couples (significant variables from models 1 and 2)

Risk Factor	HIV concordant positive		HIV serodiscordant	
	OR (95% confidence limits)	P value	OR (95% confidence limits)	P value
Age difference	1.04 (1.00 – 1.09)	0.046	1.04 (1.0 – 1.08)	0.083
Live together	2.10 (1.33 – 3.34)	<0.01	1.00 (0.67 – 1.49)	0.999
Both unemployed	1.58 (1.02 – 2.45)	0.040	1.40 (0.94 – 2.08)	0.102
Both tested before	0.36 (0.20 – 0.64)	<0.01	0.62 (0.39 – 0.98)	0.042
Condom use last sex	1.17 (0.70 – 1.96)	0.546	1.97 (1.27 - 3.07)	<0.01
One year sexual partners	0.90 (0.73 – 1.12)	0.356	1.18 (1.02 – 1.36)	0.022

Note; Risk factors entered in model building include: both unemployed, living together, both tested for HIV before, age difference, both report condom use during the last sexual encounter, average sexual encounters in the past 1 month, total sexual partners in the past one year, at least one member of the couple had genital ulcers in the past 1 year.

4.3 The experiences in and perceptions of CHCT

In this section, data will be presented from both the qualitative and the quantitative study to investigate the experiences of couples in the CHCT process.

4.3.1 CHCT attendance and immediate assessment post HIV test

The CHCT process that was followed in this study complied with the CDC CHCT protocol guidelines as described in the Section 3.6.1. The questionnaires in this study were administered to each member of the couple separately before the CHCT process and immediately post-CHCT to consenting individual members of the couple. In addition, the couples were requested to return for a post HIV-test questionnaire about one month later.

Before undergoing the HIV test at the research centre, the respondents were asked whether they had ever tested for HIV before, either as individuals or together as a couple. The results indicate a high prevalence of individual HIV testing in the research population but low levels of CHCT experience. A total number of 574 individuals (48%) had previously had themselves tested for HIV. Of these, 59% were women and 41% were men. The HIV results from the previous test were not significantly different between males and females: 11% of the females and 7% of the males were HIV positive ($p=0.36$). Among the 574 individuals who had had previous tests, 81% had disclosed their HIV status to their partner before attending the CHCT on this particular day. Of the 600 couples who attended CHCT at the research centre, at least one member of 69% of the couples was aware of his/ her HIV status from previous tests. It is significant that both members of 27% of the couples had previously had themselves tested. However, less than 4% of the respondents reported that they had attended CHCT in the past.

Participants were asked how they had decided to attend CHCT at the research centre (Table 4-26). In significantly more of the cases, that decision had been made by the female members of the couple. In addition, when couples were asked whether they had told anyone else outside the partnership that they were

attending CHCT, females were more likely to have done so. Over 80% of both males and females reported that they thought that their partner was very interested in attending the CHCT session, with less than 2% reporting that their partner was not interested at all. The main reasons cited by individual members of the couple for attending HIV testing were the need to know their own status (83%), the need to know their partner's status (40%) and their partner's recommendation to have the HIV test (24%). There was a significant association between needing to know one's status and gender: 86% of men and 81% of women ($p=0.016$) wanted to know their HIV status. There was also a significant association between needing to know the partner's status and gender ($p<0.01$). Twice as many women as men reported wanting to know their partner's status (54% of women versus 23% of men). Lastly, there was a significant association between the partner recommending an HIV test and gender ($p<0.001$). Overall, 57% of men were asked by their female partner to go for an HIV test, whereas only 12% of women were asked to do so by their male partner. The reasons for attending CHCT are shown in Figure 4-3 .

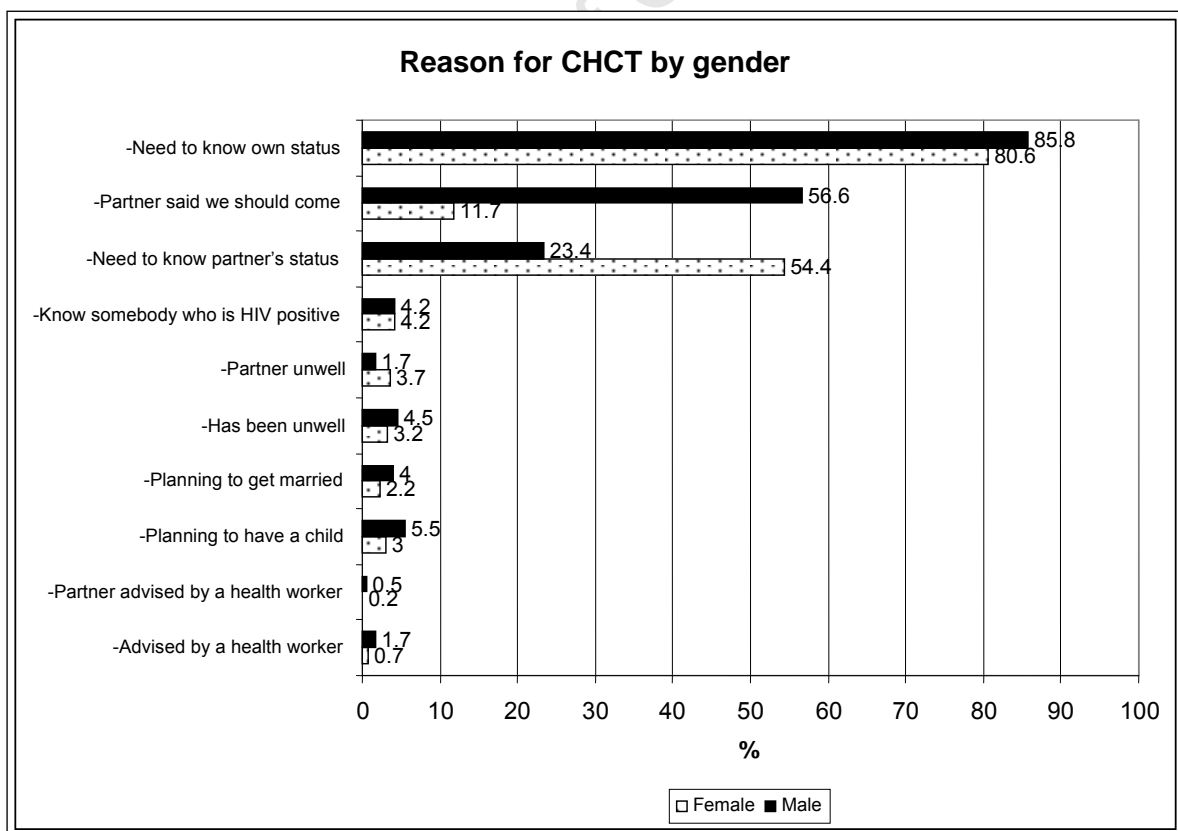


Figure 4-3: Reasons for attending CHCT

Table 4-26: CHCT attendance

	Females N = 600	Males N=600	P value	Total N=1200
Pre-Test Questions				
Tested for HIV before	337 (56.2)	237 (39.5)	<0.01	574 (47.8)
Previous Couple HIV Counselling Testing				
-Yes	27 (4.5)	18 (3.0)		45 (3.8)
-No	573 (95.5)	582 (97.0)	0.171	1155 (96.2)
Who made the decision to attend CHCT				
-Self	189 (31.5)	103 (17.2)		292 (24.4)
-Partner	96 (16.3)	204 (34.1)		300 (25.1)
-Both at the same time	313 (52.3)	289 (48.3)		602 (50.3)
-Other	1 (0.2)	2 (0.3)	<0.01	3 (0.3)
Partner attitude about CHCT				
-Very interested	491 (81.8)	498 (83.1)		989 (82.5)
-Interested	75 (12.5)	83 (13.9)		158 (13.2)
-Slightly interested	27 (4.5)	8 (1.3)		35 (2.9)
-Not interested at all	7 (1.2)	6 (1.0)		13 (1.17)
-Don't know	0 (0)	4 (0.7)	<0.01	4 (0.3)
Disclosure about CHCT attendance	125 (20.8)	97 (16.2)	0.039	222 (18.5)
Reason for attending CHCT				
-Need to know own status	482 (80.6)	514 (85.8)	0.016	996 (83.2)
-Need to know partner's status	325 (54.4)	140 (23.4)	<0.01	465 (38.9)
-Planning to have a child	18 (3.0)	33 (5.5)	0.032	51 (4.3)
-Planning to get married	13 (2.2)	24 (4.0)	0.067	37 (3.1)
-Know somebody who is HIV positive	25 (4.2)	25(4.2)	0.995	50 (4.2)
-Has been unwell	19 (3.2)	27 (4.5)	0.231	46 (3.8)
-Advised by a health worker	4 (0.7)	10 (1.7)	0.107	14 (1.2)
-Partner advised by a health worker	1 (0.2)	3 (0.5)	0.317	4 (0.3)
-Partner said we should come	70 (11.7)	219 (56.6)	<0.01	289 (24.1)
-Partner unwell	22 (3.7)	10 (1.7)	0.031	32 (2.7)

Immediately after the post-test counselling, individual members of the couple were briefly interviewed about their CHCT experiences. The response rate here was 92% (1099/1200). Overall, over 95% of all respondents reported that they were very glad to have attended CHCT (Table 4-27). When compared by HIV status, over 90% of both HIV positive and HIV negative individuals indicated that they were glad to have attended CHCT, although significantly more HIV negative individuals reported this than did HIV positive individuals. The proportion with this experience did not differ by gender. Individuals who tested HIV positive did not prefer to have had themselves tested on their own, that is without their partner. However, significantly more women preferred to have had the test on their own (13% of the women versus 10% of the men). HIV disclosure plans did not differ according to individual HIV status but they did differ according to gender:

significantly more women than men were planning to disclose their HIV test results to another person.

Table 4-27: Immediate post CHCT process assessment by gender and HIV status

	INDIVIDUAL HIV STATUS			SEX			Total n = 1099
	HIV neg. n = 777	HIV pos. n = 322	P value	Females n = 549	Males n = 550	P value	
Are you glad you attended CHCT?							
-Very glad	754 (97.0)	299 (92.9)		527 (96.0)	526 (95.6)		1053 (95.8)
-Glad	21 (2.7)	17 (5.3)		18 (3.3)	20 (3.6)		38 (3.5)
-Not very glad	2 (0.3)	6 (1.9)	<0.01	4 (0.7)	4 (0.7)	0.949	8 (0.7)
Do you prefer to have tested alone?							
Yes	95 (12.3)	36 (11.2)		72 (13.1)	59 (10.8)		131 (12.0)
No	616 (79.5)	249 (77.6)		447 (81.6)	418 (76.3)		865 (78.9)
Unsure	64 (8.3)	36 (11.2)	0.288	29 (5.3)	71 (13.0)	<0.01	100 (9.1)
Are you going to disclose the HIV results?							
Yes	367 (47.3)	165 (51.2)		310 (56.6)	222 (40.4)		532 (48.5)
No	397 (51.2)	150 (46.6)		230 (42.0)	317 (57.6)		547 (49.8)
Unsure	12 (1.6)	7 (2.2)	0.332	8 (1.5)	11 (2.0)	<0.01	19 (1.7)

In addition to the pre-test and the immediate post-test responses to the questions regarding CHCT experiences, couples were requested to return to the research centre at least one month after CHCT for a follow-up assessment of their CHCT experiences as well as of the relationship dynamics after ascertaining their HIV status.

In order to obtain in-depth information on the process of CHCT, additional qualitative interviews were also conducted with 27 couples as planned. Of these, 5 were HIV concordant positive, 6 were HIV concordant negative, and 10 were HIV serodiscordant; a further 6 were couples who initially had been HIV serodiscordant, until the HIV negative partner was infected with HIV during the course of the PIP clinical trial, of which this study was a sub-study (these are called 'seroincident' in the table below). Table 4-28 gives a breakdown of the total number of couples who attended this interview.

Table 4-28: Qualitative participants

	Couple group	N
1	Concordant positive	5
2	Concordant negative	6
3	HIV serodiscordant	10
	HIV serodiscordant – HIV negative male	7
	HIV serodiscordant – HIV negative female	3
4	HIV seroincident	6

The median age of the male and female participants of the qualitative study was 41, ranging from 22 to 61 years old. The majority (15 out of 27) of the couples were not married but lived together. Another 8 couples said they did not live together at the time of the survey.

The following section describes the results from the qualitative study as well as from the follow-up interview.

4.3.2 Contextual factors and their influence on HIV testing

The couples participating in this research come from communities where there has been much discussion regarding HIV and HIV testing in particular; many myths are propagated and people have different perceptions of the disease. Against this background, the individual members of the couple were asked about their community's perceptions and statements about HIV testing. Broadly speaking, respondents identified both negative and positive factors and perceptions.

Negative responses or reports about HIV testing were mainly linked to individuals whom the communities regarded as susceptible to HIV infection and what the consequences of an HIV test result would be. Both male and female respondents indicated that the community generally believed that certain categories of people, particularly homosexual and promiscuous people, were the ones who became HIV infected. Therefore, if an individual decided to have an HIV test, it was assumed that they were motivated by a fear that they had been at risk of HIV infection, and thus the community assumed that they fell into the above two categories.

28 year old female member of an HIV concordant negative couple

“Some people still have that mindset that if you have AIDS then you sleep around and you are a prostitute; they still have that attitude. For instance, a family member of mine is HIV positive. She found out about it a long time ago but she recently told us about it. She says she had not yet come to terms with it because she does not have multiple partners. She sticks to one partner at a time.”

In addition, both male and female respondents reported that the community would isolate HIV positive people and discriminate against them. On the individual level, there was also a fear that the individual would die from the shock of having to deal with positive HIV test results, and that they would be unable to deal with HIV serodiscordant results, in the case of CHCT. Male respondents reported more suicidal thoughts and plans if others in the community were to find out that they were HIV infected. Female respondents spoke of their fears of having to depend on other people because of resultant ill-health, rejection by their partners and difficulties surrounding their children’s welfare after an HIV positive parent has died.

41 year old male member of an HIV serodiscordant couple

“People are also scared for their HIV status to be known by other people. That is the most worrying part; being scared to have your HIV status known is the worst killer in HIV positive people.”

33 year old female member of an HIV serodiscordant couple

“... for others, for example my partner and I, since he is HIV negative and I am HIV positive, maybe others think of such things, that oh Lord what if my partner were to be HIV negative and I HIV positive, what would we do?”

28 year old male member of HIV concordant negative couple

“...they say ...I don’t want to be dependent on other people. If I learn that I am HIV positive, it is better to kill myself by being run over by a train or hang or shoot myself.”

Despite the mainly negative contextual factors, respondents also mentioned some positive factors as general motivating factors for community members and for the couple specifically to test for HIV. The benefit of testing, which was commonly mentioned by community members and reported by both males and females, was that testing for HIV enabled early diagnosis of HIV infection so that care could be sought before the disease had progressed too far. This perception was reinforced by community members witnessing the recovery of people on ARVs and hearing the experiences of those who had previously tested

themselves for HIV. There were also reports of people categorising HIV infection in the same category as other chronic illnesses, such as diabetes and hypertension, thus destigmatising HIV.

41 year old female member of an HIV serodiscordant couple

“... Because there are many diseases out there, one should know their own disease; whether it is diabetes, high blood pressure or even TB...”

41 year old male member of an HIV serodiscordant couple

...when the results are positive, that is, HIV positive you can be able to protect yourself... so that you do not die before your time. For example, if you were someone who likes boyfriends or girlfriends you can try to control that and take your treatment in order to live a longer life.

The results indicate that there were diverse variations between what motivated couples to test and what motivated specific members of each couple to test for HIV. The factors that motivated other community members to test themselves for HIV also applied to the individual members of the couple. An issue that was often cited was the perceived health benefits of knowing one's HIV status. In addition, individual members of the couple highlighted some more personal motivational factors, such as the death of former partners and the use of HIV testing as a bargaining tool in the promotion of condom use within the relationship. Infidelity in the current male partner was also cited by mainly female respondents as the main reason for attending CHCT. A number of female participants indicated that they already knew their status, and were making use of the CHCT opportunity to disclose their HIV status to their sexual partner. In some cases, the female member of the couple who was aware of her HIV status would disclose her status in the presence of the counsellor, but in other cases, the female member would go through the HIV testing process under the pretence that this was occurring for the first time. In a few cases, one of the partners (in all of these cases it was the male partner) was not aware of the reason where they were going and why they were attending the clinic; they were only informed on arrival and in the counselling room that this was an HIV testing facility because the female partner would have hidden this fact from him.

In some cases, the partner who knew his/her HIV test results from a previous HIV test might have disclosed the results to her partner, but the other partner who was unaware of his or her own HIV status would thus have been motivated to attend CHCT in order to ascertain their own status.

29 year old female member of an HIV serodiscordant couple

"...I was afraid to disclose to him at home rather... .. I made it seem as if I was going to test for the first time. So we both went to the clinic and I told him in front of the nurse that I was HIV positive..... I was mainly thinking about him, for me it was not really a problem anymore, I was just worried about him, which was also the reason why I took him to the clinic and told him in front of a nurse."

38 year old male member of an HIV concordant negative couple

"...I did not know what she got up to; the same way she did not know what I got up. We are a couple that drink alcohol excessively, and so I can say we did not trust each other. I made the decision, but we both agreed on this."

For those who had heard about HIV serodiscordance, the fear of knowing that they could be HIV serodiscordant was the main reason for having the HIV test. It instilled some fear in couples, motivating particularly the partners who did not know their HIV status.

42 year old female member of an HIV concordant negative couple

"...we were told that it sometimes happens that one partner might be infected and the other partner might not be infected ... So we decided to come here for testing."

29 year old female member of an HIV concordant negative couple

"I think for me it's mostly about being in love. When you are in love with this person, you want to know where you stand so that you do not infect them and you also want to know where they stand so they do not pass the virus on to you. We were motivated by the love we have for each other. I just wanted to know my status so that when I get infected, I know I got it from him because I am sure of my status."

4.3.3 CHCT attendance decision

In many instances, one member of the couple had first heard about the CHCT process. Both male and female respondents indicated that it was not easy to persuade or encourage their partner to attend CHCT. Many invitations were offered indirectly, and were not based on the advantages of knowing one's HIV status per se but on other factors. Discussion mainly involved highlighting the previous HIV status of self or of previous partners, or even of other people with HIV. The intention seemed to be mainly to present a conversation that was not

accusatory or that hinted at any suspicion of infidelity. In other cases, however, the discussion was intentionally accusatory.

28 year old male member of an HIV serodiscordant couple

"She said that she knows that she is not my first girlfriend as I am not her first partner, so she suggested that we come here before we get serious. It was not easy on the first day we started talking..."

43 year old male member of a sero-incident couple

"... I confessed my unfaithfulness and we both agreed that we don't want to see our health falling into pieces. We decided it will be better for us to get help soon if we should test HIV positive..."

46 year old female member of an HIV serodiscordant couple

"... I told him I'm HIV positive and I started crying and he said: "Don't worry it is alright, you must go to the clinic". I was already on ARV treatment that time but I was taking my medication secretly. Then he said did you attend the clinic and I said yes. He said next time you go to the clinic I'll go with you and then he also got tested.We only argued in the house and did not go outside arguing. He did not shout at me about it. ... It was not easy my dear...."

35 year old female member of an HIV concordant positive couple

"It was not easy but it became easier because he understood. He himself ended up one day telling me that "X there is something I've never told you" I asked what it was and he said he went to the clinic because he had a headache. It so happened that it was not just a headache, it was meningitis and all bloods were drawn and he was told that he was HIV positive. That is where I also felt that I should also go and test because sometimes we do not use the condom, and nowadays I find strange things coming from my genitals. It was not that hard we spoke about it in general."

41 year old male member of an HIV serodiscordant couple

"... Our conversation started by me disclosing my HIV status to her and she was shocked and scared. So I asked what would be the best thing for us to do, she said in order to make sure that she has not contracted HIV let us go to the clinic again but not to the same clinic, let us change the direction now let us go to Uluntu clinic and find out if the results would match, then we took the decision as to when we are coming."

27 year old female member of an HIV serodiscordant couple

"... I told him the news that I was 8 months pregnant by then so I was told that I'm HIV positive so when I was at home I told him. I didn't care how was he going to take the news, I told myself I cannot change the situation and there's no one else I'm going to tell and I have to tell him. I told him and he was hurt so that's when he didn't want to come for testing he was saying that if I'm HIV positive that means he is also HIV positive..."

The response of the invited partner in some cases included shock, which resulted in the use of begging and persuasion to convince the partner to attend CHCT. Once a couple had agreed to have the test, though, most of them attended the

counselling as soon as possible. Of those who delayed the test, some of the reasons cited were fear of the process and fear of the results; this resulted in couples waiting to hear about the experiences of other couples who had attended the CHCT process. In some cases, the delay was due to logistical problems such as not being able to take time off work.

4.3.4 The CHCT process

Just before the HIV testing at the research centre, the individual members of the couples reported that they were experiencing multiple emotions, and that many conflicting thoughts were going through their minds. The predominant emotion was fear of the HIV test results. The outcome of the results was often interpreted in the plural, in other words, the individual's HIV status was not the primary concern, but also the outcome of the partner's results. They were particularly fearful that they might be HIV serodiscordant. The fear was often more intense if they had not used condoms in their sexual encounters. The possibility that other people might know their HIV results and HIV status was another common fear. In some cases, participants admitted to planning how they were going to disclose the results, if they were HIV positive, and how they would accept such results.

43 year old male member of a sero-incident couple

"I was feeling very anxious; I did not want to hear the results that I am HIV positive. What was in my mind was the fact what if one of us is HIV positive, what if the HIV negative partner says to the one who is positive, no we should stop loving each other now because you have HIV, so that was what I was thinking."

28 year old female member of an HIV concordant negative couple

"... A lot of "what if's"...what if I am HIV positive and what if my partner is HIV positive..."

33 year old male member of an HIV concordant positive couple

"I felt nervous even though I knew that I was already here...I had to welcome and accept the results. It was like I was in a football match...a win or a loss, positive or negative."

30 year old male member of an HIV serodiscordant couple

"I was afraid but I told myself I would do it anyway. I was thinking whether I would be positive and I also had the worry of who I was going to turn to and tell."

The experience of having the test and obtaining the results itself was described as either positive or negative. Positive experiences could be divided into two

broad categories, which were independent of the HIV status, namely: the counsellor's assurance that their test results were confidential, and education regarding the various aspects of HIV, such as education on promiscuity, living positively with HIV, HIV risk reduction and the ability to ask questions and clarify general issues regarding HIV. Many people liked and appreciated the discussions on how to disclose one's HIV status to third parties, and many individuals, regardless of their HIV status, highly rated the ability to obtain their HIV test results at the same time.

Those who had negative experiences of the process spoke of experiencing shock when they were given their test results, particularly on obtaining serodiscordant results. The fear of being rejected by the partner was raised by both the male and female HIV positive members of serodiscordant couples.

27 year old female member of an HIV serodiscordant couple

"... when I was told that I'm HIV positive I had many thoughts, some people would say "When I heard that I am HIV positive, my partner, the father of my children left me with my HIV". And some would say: "When I was diagnosed HIV positive my husband left me and I lost my marriage". So that also came to my mind and it still does, that he is HIV negative, he might leave me."

41 year old female member of a sero-incident couple

"After they told me my results, I was counselled. I did not like the way I was told of my results in front of him, I thought I was going to be called on the side and be told privately since I was the one who was HIV positive."

52 year old female member of an HIV concordant positive couple

"It was easy for us to come here, but we were shocked when we were told our results."

35 year old female member of an HIV concordant positive couple

"I was scared and crying after I heard my results."

22 year old female member of an HIV concordant positive couple

"I was very shocked but then I had no choice but to accept it."

4.3.5 The outcome of the CHCT process

At least one month post HIV testing, 566 interviews were conducted among 289 (51%) females and 277 (49%) males who voluntarily returned to the research clinic. Of these follow-up individuals, 150 (29%) were HIV positive and 369 (71%) were HIV negative (Table 4-29). The median age of the follow-up participants was 35 years. 19% of the follow-up participants were married and 66% were

living with their partner. Individuals who returned for the follow-up interview were significantly older than those who did not return ($p < 0.01$), were more likely to be living together with their partner ($p < 0.01$) and to be hazardous drinkers ($p < 0.01$).

The follow-up interviews focused on the couple's relationship status, communication on HIV and STI related issues, and HIV and STI risk reduction uptake. Over 98% of the participants who returned for the follow-up interviews were still together with the partner with whom they had gone for the test. Only 9 (1.6%) had separated from their partner. All 9 relationship break-ups happened within 2 weeks CHCT. Over 50% of the respondents reported that they had discussed their HIV test results as a couple after the HIV test. Most discussed the HIV test results within one day after the HIV test. Overall, 51% indicated that attending the CHCT enabled them to talk about issues around HIV that they had not normally been able to talk about in the past. Risk reduction discussions happened in over 70% of cases. Significantly more women than men had discussed the HIV test results with other people (60% versus 50%, $p = 0.037$).

Table 4-29: Follow-up participants' relationship status

	Females 289 (51.1)	Males 277 (48.9)	P value	Total 566
HIV Status				
-HIV Positive	88 (32.7)	62 (24.8)		150 (28.9)
-HIV Negative	181 (67.3)	188 (75.2)	0.047	369 (71.1)
Are you still together with your partner since the HIV test?				
-Yes	283 (97.9)	274 (98.9)		557 (98.4)
-No	6 (2.1)	3 (1.1)	0.345	9 (1.6)
Did you and your partner (just the two of you) discuss you HIV test results after the test?				
-Yes	161 (55.7)	167 (60.3)		328 (58.0)
-No	128 (44.3)	110 (39.7)		238 (42.1)
Who initiated this discussion on the HIV test results?				
-Self	78 (48.5)	63 (37.7)		141 (43.0)
-Partner	40 (24.8)	63 (37.7)		103 (31.4)
-Both at the same time	43 (26.7)	40 (24.0)	0.052	83 (25.3)
-Other (Specify)				
Did attending CHCT enable you to discuss issues around HIV that you normally don't talk about?				
-Yes	144 (49.8)	146 (52.7)		290 (51.4)
-No	145 (50.2)	129 (46.6)	0.260	277 (48.4)
Did you discuss your HIV test results with other people/relatives after the test?				
-Yes	172 (59.5)	137 (49.5)		309 (54.6)
-No	117 (40.5)	139 (50.2)	0.037	256 (45.2)
Did your partner discuss his/her HIV test results with other people/relatives after the test?				
-Yes	96 (33.2)	89 (32.1)		185 (32.7)
-No	111 (38.4)	92 (33.2)		203 (35.9)
-Don't know	82 (28.4)	94 (33.9)	0.203	176 (31.10)
Have you joined any support group since the HIV test?				
-Yes	11 (3.8)	8 (2.9)		19 (3.4)
-No	278 (96.2)	269 (97.1)	0.544	547 (96.6)
Have you seen any health care provider about your HIV status?				
-Yes	21 (7.3)	17 (6.1)		38 (6.7)
-No	268 (92.7)	260 (93.9)	0.592	528 (93.3)
Which health care provider, clinic did you see concerning your HIV status? (n=38)				
-Day hospital	14 (66.7)	7 (41.2)	0.116	21 (55.3)
-Clinic	6 (28.6)	9 (52.9)	0.126	15 (39.5)
-General practitioner	1 (4.8)	1 (5.9)	0.878	2 (5.3)

4.3.6 Couple behaviour post HIV testing

The CHCT process places a special emphasis on HIV and STI risk reduction counselling. One of the measurable risk reduction activities is condom use. Condom use during all sexual encounters was reported by 51% of respondents at

the follow-up interviews (Table 4-30). Condom use during the last sexual encounter was reported by 55% of all respondents. Recommending CHCT to other couples was mentioned by 79% of the respondents, with no difference between the male and the female respondents.

Table 4-30: Follow-up participants risk reduction behaviour

	Females 289 (51.1)	Males 277 (48.9)	P value	Total 566
Did you and your partner talk about future plans regarding using condoms?				
-Yes	210 (72.7)	188 (67.9)		398 (70.3)
-No	78 (27.0)	86 (31.1)	0.308	164 (29.0)
Do you use a condom every time that you have sex with your partner?				
-Yes	157 (54.3)	137 (49.5)		294 (51.9)
-No	130 (45.0)	137 (49.5)	0.475	267 (47.2)
Have you had any new partners between the time that you had an HIV test and today?				
-Yes	4 (1.4)	5 (1.8)		9 (1.6)
-No	282 (97.6)	269 (97.1)		551 (97.4)
How many times have you had sex with your current partner in the past 1 month?				
-Median	2	3		2
-Mean	3.7	4.9		4.3
-Range	0 - 30	0 - 31		0 - 31
Did you use condoms with your current partner the last time you had sex?				
-Yes	159 (55.6)	144 (53.3)		303 (54.5)
-No	127 (44.4)	126 (46.7)	0.593	253 (45.5)

CONDOM USE BY COUPLE STATUS

	Condom use at baseline (n=600)	Condom use at follow-up (n=258)
HIV concordant negative couples (n =354 at baseline; n =169 at follow-up)	71 (11.8)	22 (8.5)
HIV concordant positive couples (n =110 at baseline; n =49at follow-up)	25 (4.2)	8 (3.1)
HIV serodiscordant couples (n =136 at baseline; n =40 at follow-up)	45 (7.5)	16 (6.2)

4.3.7 Couple relationship dynamics post knowledge of HIV status

The reactions of the various couples to the CHCT process were diverse. Those who found the process to have had a positive impact on their relationship, reported that they had been affirming their love and commitment towards each

other, and that this was particularly marked in the serodiscordant relationships. There were also reports of increased condom use and easier negotiations about condom use within the partnerships. Some couples reported general improvement in other aspects of their relationship and many reported discussing their new knowledge with other people.

43 year old male member of a sero-incident couple

"I: Has the session made it easier for you now to talk about things it wasn't easy to talk about before?"

R: Yes, I believe we are more like husband and wife now and we love each other. We share almost everything."

29 year old female member of an HIV serodiscordant couple

"... because I was a person who used to drink a lot and I even stopped drinking, he was also a smoker and he also stopped smoking."

22 year old female member of an HIV concordant positive couple

"... I'll say we care very much about each other than before and we support one another a lot more."

41 year old female member of an HIV serodiscordant couple

"The outcomes were that we both accepted it, the positive that is within me, he accepted it and I also accepted it. We told ourselves that only death will separate us."

Some couples reported no change in their relationship dynamics, however. Furthermore, a few individuals reported that, in the future, they would be able to trace back their HIV infection to their partner because they were now aware of their own HIV negative status.

With regard to HIV disclosure, this was gender-related in that mainly female members of the couples reported that they had disclosed their HIV status to other people outside the relationship. This report from the qualitative interviews matches the response from the quantitative follow-up interviews.

Almost all serodiscordant couples reported that the HIV positive partner was very concerned about being deserted by the HIV negative partner. In many cases, however, the HIV negative partner emphasised their commitment to the relationship despite the differing HIV status (Table 4-31).

Table 4-31: Serodiscordant couples' reports of impact of HIV serodiscordant result on relationship

Couple Number	HIV positive partner	HIV negative partner
DC001	<i>The outcomes were that we both accepted it, the positive that is within me, he accepted it and I also accepted it. We told ourselves that only death will separate us.</i>	<i>(MALE) Yes I was worried for because it is difficult for her. Even now that's why I am always next to her because I want her to know that I will never chase her away because I already promised that to her even the time we did know the HIV status. I told her that we are going to stay together forever. I am not going leave her because of this, I won't do that.</i>
DC002	<i>No there is no difference for the two of us. We came here saying if he is the one that is HIV positive I will not drop him and if I'm the one who has it he will not drop me. So we came out knowing we were expecting anything. We did not come here expecting negative-negative. We knew that is might happen that one has it and one doesn't.</i>	<i>(MALE) I do not see anything change in our relationship.</i>
DC003	<i>Yes our relationship improved because I was a person who used to drink a lot of alcohol and I even stopped drinking, he was also a smoker and he also stopped smoking.</i>	<i>(MALE) Our relationship is still the same.</i>
DC004	<i>It did not have any negative consequences, everything is still the same. We still treat each other the same way.</i>	<i>(MALE) We were asked: "Now your partner is HIV positive so what you going to do are you going to leave her?" I said, "No I can't leave her because it is going to be like I'm leaving her since she is HIV positive and I'm not taking care of her". I said I'm going to love her over and I love her very much and I said to her: "You should look after yourself, be faithful and use only the treatment you've got from the clinic".We have a nice conversation, no one is shouting at another one.</i>
DC005	<i>(MALE) It had no negative impact on my relationship</i>	<i>Even when he was worried about how I am. I told him there was nothing to worry about and he should not worry because of that (HIV positive status).</i>
DC006	<i>(MALE) It had a positive impact on my relationship</i>	<i>Let me say that our relationship is still the same as it was. There was no time I can say anything had changed; we did not have more problems.</i>
DC007	<i>It was ups and downs previously. When I asked him to use a condom then he would shout at me. When I came here, I talked to the counsellor about it. Now everything is normal, he does not forget the condom (laughter) but previously he was shouting and saying maybe I was cheating</i>	<i>(MALE) Our relationship is still the same, no change</i>
DC008	<i>(MALE) There was a big positive thing in my relationship because we are still together even this day.</i>	<i>Our relationship is still the same</i>
DC009	<i>He told me that there is nothing that is going to change; he was told that he might still be in window period so there is no point of leaving me.</i>	<i>(MALE) There is change ever since I found that she has this virus. I think that maybe one day she would die or I would die, but I still love her</i>
DC010	<i>We used to have more quarrels and we liked to go out to drink alcohol a lot, I mean those are the things that have changed. Our lives have changed a lot. Before coming here, we didn't use a condom when having sex but we now use it and we are doing things fine.</i>	<i>(MALE) It is not the same as before because before there was no care between the two of us. You see when you love someone and you feel sorry for the problem she has and you find that you wish you could show her how much you love her, you will not leave her because of that. What I do not know is whether she would have done it if it was me in her situation. But at least for her I need to support her all the way because she feels as if nothing will ever work when she is like that (HIV positive) but life goes on.</i>

In replying to questions about relationship strength, the follow-up participants indicated that they had had a strong commitment to each other before the HIV test, and over 60% indicated that their relationship was much stronger now after testing than before the HIV test (Table 4-32).

Table 4-32: Follow-up participants changing relationship status

	Females n = 289	Males n = 277	P value	Total n = 566
How would you describe your relationship with your partner before the HIV test?				
-Very committed to each other	260 (90.0)	263 (95.0)		523 (92.4)
-Somewhat committed to each other	17 (5.9)	12 (4.3)		29 (5.8)
-Not committed to each other	10 (3.5)	2 (0.7)	0.047	12 (2.1)
How would you describe your relationship soon after the HIV test?				
-Very committed to each other	269 (93.1)	271 (97.8)		540 (95.4)
-Somewhat committed to each other	11 (3.8)	3 (1.1)		14 (2.5)
-Not committed to each other	7 (2.4)	3 (1.1)	0.048	10 (1.8)
How would you describe your relationship now as compared to the period before the HIV test?				
-Much stronger than before	178 (61.8)	165 (59.6)		343 (60.7)
-No change	103 (35.8)	109 (39.4)		212 (37.5)
-Weaker than before	4 (1.4)	1 (0.4)		5 (0.9)
-Much weaker than before	3 (1.04)	2 (0.7)	0.485	5 (0.9)

On evaluation of the CHCT experience, couples revealed that they most appreciated the information on risk reduction, particularly with regard to the importance of condom use and its correct use. Most couples indicated that, based on their experiences, they could not recommend any changes to the current CHCT process. Over 75% of the follow-up participants indicated that they would recommend CHCT to other couples (Table 4-33).

Table 4-33: Relationship status post CHCT

	Females n = 289	Males n = 277	P value	Total n = 566
Do you have any conflicts in your relationship?				
-Yes	61 (21.3)	47 (17.4)		108 (19.4)
-No	225 (78.7)	223 (82.6)	0.243	448 (80.6)
Do you think these conflicts are because of your HIV test results? (n=108)				
-Yes	3 (4.9)	4 (8.7)		7 (6.5)
-No	56 (91.8)	42 (91.3)		98 (91.6)
-Don't know	2 (3.3)	0	0.353	2 (1.9)
Do you feel that your partner is angry with you for his/her test result?				
-Yes	8 (2.8)	2 (0.8)		10 (1.8)
-No	270 (95.7)	256 (97.7)		526 (96.7)
-Don't know	4 (1.4)	4 (1.5)	0.198	8 (1.5)
Are you angry with your partner for your test results?				
-Yes	3 (1.1)	1 (0.4)		4 (0.7)
-No	277 (98.2)	260 (99.2)		537 (98.7)
-Don't know	2 (0.7)	1 (0.4)	0.566	3 (0.6)
Has your partner physically abused you since the HIV test?				
-Yes	5 (1.9)	5 (2.0)		10 (1.9)
-No	269 (98.2)	245 (98.0)	0.902	510 (98.1)
Has your partner verbally abused you since the HIV test?				
-Yes	6 (2.2)	5 (2.0)		11 (2.1)
-No	263 (97.8)	245 (98.0)	0.855	508 (97.9)
Would you recommend the Couple Counselling and testing service to other couples or to your friends?				
-Yes	232 (81.1)	208 (77.0)		440 (79.1)
-No	54 (18.9)	62 (23.0)	0.236	116 (20.8)

4.4 The self-reported STI management and the partner notification practices

Recent STIs in this study were defined as having had genital ulcers and/or genital discharge (self-reported by respondent) in the past year. Recent STIs were reported by 224 (19%) of the respondents. Those who reported a recent STI were significantly more likely to be females ($p < 0.01$), HIV positive ($p < 0.01$), living in informal housing ($p < 0.01$), to have had a recent HIV test ($p < 0.01$) and more likely to have used a condom at some stage with the current partner ($p = 0.018$). This comparison is shown in Table 4-34 .

Table 4-34: Demographic characteristics by recent STI history

	Recent STI (n = 224)	No recent STI (n = 976)	P value
Sex			
-Females	148 (66.1)	452 (46.3)	
-Males	76 (33.9)	524 (53.7)	<0.01
HIV status			
-Positive	87 (38.8)	269 (27.6)	
-Negative	137 (61.2)	707 (72.4)	<0.01
Working	67 (29.9)	273 (28.0)	0.561
Live in formal housing	83 (37.1)	526 (53.9)	<0.01
Had previous HIV test	136 (60.7)	438 (44.9)	<0.01
Live together with partner	142 (63.7)	581 (60.0)	0.305
Ever condom use in relationship	143 (63.8)	538 (55.1)	0.018
Condom last sexual encounter	83 (58.04)	350 (65.1)	0.121
Ever paid money for sex	6 (2.7)	12 (1.2)	0.108
Ever been offered money for sex	8 (3.6)	11 (1.1)	<0.01
Positive AUDIT-C Score	120 (53.6)	580 (59.4)	0.109
Income (Rands)			
-Mean	1 270	1 007	
-Median	820	600	<0.01
-Range	0 – 8 000	0 – 14 000	
Sexual Partners			
-Mean	3.8	2.6	
-Range	1 – 59	1 - 70	<0.01
New partners past 6 months			
-Mean	0.364	0.316	
-Range	0 – 7	0 - 8	0.634
Age at first encounter			
-Mean	17.1	17.4	
-Range	12 – 27	9 - 38	0.074
Lifetime sexual partners			
-Mean	6.2	6.32	
-Median	4	3	0.050
-Range	1 – 103	1 - 250	
Total sexual partners in past 1 year			
-Mean	1.44	1.36	
-Range	1 – 13	1 - 20	0.062
New partners in past year			
-Mean	0.45	0.36	
-Range	0 – 5	0 - 10	0.011
Sex times in 1 month			
-Mean	6.03	5.4	
-Range	0 – 30	0 - 60	0.112

4.4.1 Determinants of recent STIs

Significant determinants of having had a recent STI after controlling for other risk factors were: sex, age and housing type (Table 4-35). Males had a 56% reduced risk of having had a prior STI in the previous year as compared to females (p=0.01). For every one year increase in age, there is a 4% reduced risk of having had a recent STI, which means that older people are less likely to have reported having an STI in the previous year. Those who lived in formal housing had a 69% reduced risk of having had an STI.

Table 4-35: Crude and adjusted Odds Ratio (OR) estimates of the determinants of recent STI in individuals

Risk Factor	Crude OR OR (95% confidence limits)	P value	ADJUSTED OR OR (95% confidence limits)	P value
Sex	0.44 (0.32 – 0.60)	<0.01	0.44 (0.24 - 0.80)	0.01
Age	0.96 (0.94 – 0.97)	<0.01	0.96 (0.92 - 0.99)	0.01
Employed	1.10 (0.80 – 1.51)	0.561	1.10 (0.63-1.93)	0.73
Income	1.00 (1.00 – 1.00)	0.008	1.00 (1.00 - 1.00)	0.40
Married	1.25 (0.87 – 1.78)	0.230	1.33 (0.69 - 2.59)	0.40
Live together	1.17 (0.87 – 1.58)	0.306	1.17 (0.65 - 2.08)	0.61
Housing type	0.50 (0.37 – 0.68)	<0.01	0.31 (0.18 - 0.55)	<0.01
Previous HIV test	1.90 (1.41 – 2.55)	<0.01	1.48 (0.89 - 2.47)	0.13
Self-perceived risk	0.75 (0.67 – 0.83)	<0.01	0.85 (0.70 - 1.03)	0.11
Positive AUDIT-C score	0.79 (0.59 – 1.05)	0.109	1.10 (0.65 - 1.87)	0.72
Circumcised	0.86 (0.48 – 1.56)	0.627	0.65 (0.27 - 1.57)	0.34
Age at sexual debut	0.96 (0.90 – 1.01)	0.133	1.00 (0.90 - 1.10)	0.94
Total lifetime sexual partners	1.00 (0.99 – 1.01)	0.920	1.00 (0.98 - 1.02)	0.64
Total sexual partners in the past year	1.05 (0.94 – 1.17)	0.397	0.95 (0.74 - 1.21)	0.67
New sexual partners in past year	1.10 (0.95 – 1.27)	0.219	1.12 (0.84 - 1.47)	0.44
New partners in past 6 months	1.07 (0.88 – 1.29)	0.495	1.18 (0.85 - 1.63)	0.34
Frequency of sex in past 1 month	1.02 (0.99 – 1.04)	0.127	1.00 (0.97 - 1.04)	0.84
Condom use at last sexual encounter	0.74 (0.51 – 1.08)	0.122	1.12 (0.69 - 1.81)	0.66

4.4.2 STI communication behaviour

Both male and female respondents were asked if they ever spoke about protecting themselves from STIs as a couple (Table 4-36). About 65% of all respondents reported that they did communicate about STIs and that they had discussed STI risk reduction with their partner in the past; this proportion was not significantly different between men and women. 86% of women and 93% of men found it comfortable to talk about STIs. Women were significantly more likely to

be slightly uncomfortable or very uncomfortable to talk about STIs with their sexual partners ($p < 0.01$)

Table 4-36: STI communication behaviour

	Females n = 600	Males n = 600	Total n = 1200	P value
Previous talk about STI risk reduction with partner	385 (64.2)	399 (66.5)	784 (65.3)	0.396
How comfortable to talk STI Risk Reduction				
-Comfortable	332 (86.2)	371 (93.0)	703 (89.7)	
-Slightly uncomfortable	41 (10.7)	24 (6.0)	65 (8.3)	
-Very uncomfortable	12 (3.1)	4 (1.0)	16 (2.0)	<0.01

The participants were asked about their STI history in the past year, with specific reference to genital ulcers and genital discharge. Significantly more females than males reported having had a genital discharge in the past year (23% versus 9%, $p < 0.01$). It is worth noting that over 75% of those with a history of genital ulcers or discharge had discussed these symptoms with their sexual partners (Table 4-37). HIV positive individuals were more likely to have had a genital discharge (21% versus 13.9%, $p < 0.01$) and genital ulcers (10% versus 5%, $p < 0.01$) in the past year.

Over 75% of the participants indicated that they had discussed their last episode of either genital ulcers or discharge with their sexual partners. Overall, the prevalence of lifetime STI treatment was 24.3%, with no significant differences between males and females (25.2% of the females and 23.5% of the males).

Table 4-37: STI history

	Females n = 600	Males n = 600	P value	Total n = 1200
Genital discharge in the past 1 year				
-Yes	138 (23.0)	53 (8.8)		191 (15.9)
-No	462 (77.0)	547 (91.2)	<0.01	1009 (84.1)
Discussed discharge with partner				
-Yes	104 (75.9)	46 (86.8)		150 (79.0)
-No	33 (24.1)	7 (13.2)	0.099	40 (21.1)
Genital ulcers in the past 1 year				
-Yes	37 (6.2)	37 (6.2)		74 (6.2)
-No	563 (93.8)	563 (93.8)	1.00	1126 (93.8)
Discussed ulcer with partner				
-Yes	29 (78.4)	33 (89.2)		62 (83.8)
-No	8 (21.6)	4 (10.8)	0.207	12 (16.2)
Lifetime STI treatment ever				
-Yes	151 (25.2)	141 (23.5)		292 (24.3)
-No	449 (74.8)	459 (76.5)	0.501	908 (75.7)

Respondents were asked about their treatment seeking behaviour the last time they had an STI (not necessarily within the past year). Over 95% of both men and women went to seek care for their STI. The most common source of care for both men and women was the public sector clinic or day hospital and the least common was over the counter dispensing at the pharmacy. Only males reported seeking care from traditional healers, and more men than women asked chemists for over the counter medication. Regardless of the place of care used, over 89% of both male and female respondents reported complete resolution of the STI symptoms.

Overall, 30.6% of the respondents reported that they sought care together with their partners. This proportion was not different between men and women. For those who sought treatment together, the partner was treated in over 95% of cases. Again, this did not differ between males and females. On further enquiry about the STI consultation session and the health care provider contact, the following emerged:

- Over 70% of the people were informed about the need for the treatment of sexual partners, 16.7% were not.
- Over 80% were informed about the need to use condoms. Significantly more men (15.0%) than women (6.8%) were not informed about the need to use condoms ($p = 0.044$).
- Over 80% were provided with condoms.

- The partner notification note was provided to about 50% of the respondents; of these significantly more were males ($p = 0.031$).

Table 4-38 summarises the different STI treatment seeking behaviours stratified by gender.

Table 4-38: STI treatment seeking behaviour (based on the last time they had an STI)

	Females n = 152	Males n = 143	P value	Total n = 295
Treatment sought for last STI	147 (96.7)	141 (98.6)	0.286	288 (97.6)
Treatment source				
-Day hospital / Clinic	138 (93.9)	123 (87.2)	0.053	261 (90.6)
-GP	10 (6.8)	14 (9.9)	0.337	24 (8.3)
-Traditional Healer	0 (0)	11 (7.8)	<0.01	11 (3.8)
-Chemist	1 (0.7)	3 (2.1)	0.294	4 (1.4)
Did symptoms improve?				
-Yes completely	131 (89.1)	129 (91.5)		260 (90.3)
-Yes slightly	11 (7.5)	10 (7.1)		21 (7.3)
-No	5 (3.4)	2 (1.4)	0.542	7 (2.4)
Seek treatment together with partner	38 (25.9)	50 (35.5)	0.077	88 (30.6)
Partner treated on the consultation day	37 (97.4)	48 (96.0)	0.726	85 (96.6)
Did the health care provider inform you about:				
i) Treatment of sexual partners				
-Yes	111 (75.5)	103 (73.6)		214 (74.6)
-No	24 (16.3)	24 (17.1)		48 (16.7)
-Don't remember	12 (8.2)	13 (9.3)	0.919	25 (8.7)
ii) Use of condoms				
-Yes	132 (89.8)	111 (79.3)		243 (84.7)
-No	10 (6.8)	21 (15.0)		31 (10.8)
-Don't remember	5 (3.4)	8 (5.7)	0.044	13 (4.5)
iii) Partner notification				
-Yes	69 (46.9)	75 (53.6)		144 (50.2)
-No	75 (51.0)	55 (39.3)		130 (45.3)
-Don't remember	3 (2.0)	10 (7.1)	0.031	13 (4.5)
iv) Were you given condoms				
-Yes	40 (85.1)	50 (83.3)		90 (84.1)
-No	6 (12.8)	8 (13.3)		14 (13.1)
- Don't remember	1 (2.1)	2 (3.3)	0.926	3 (2.8)

Figure 4-4 is a graphical representation of sources of STI treatment stratified by gender.

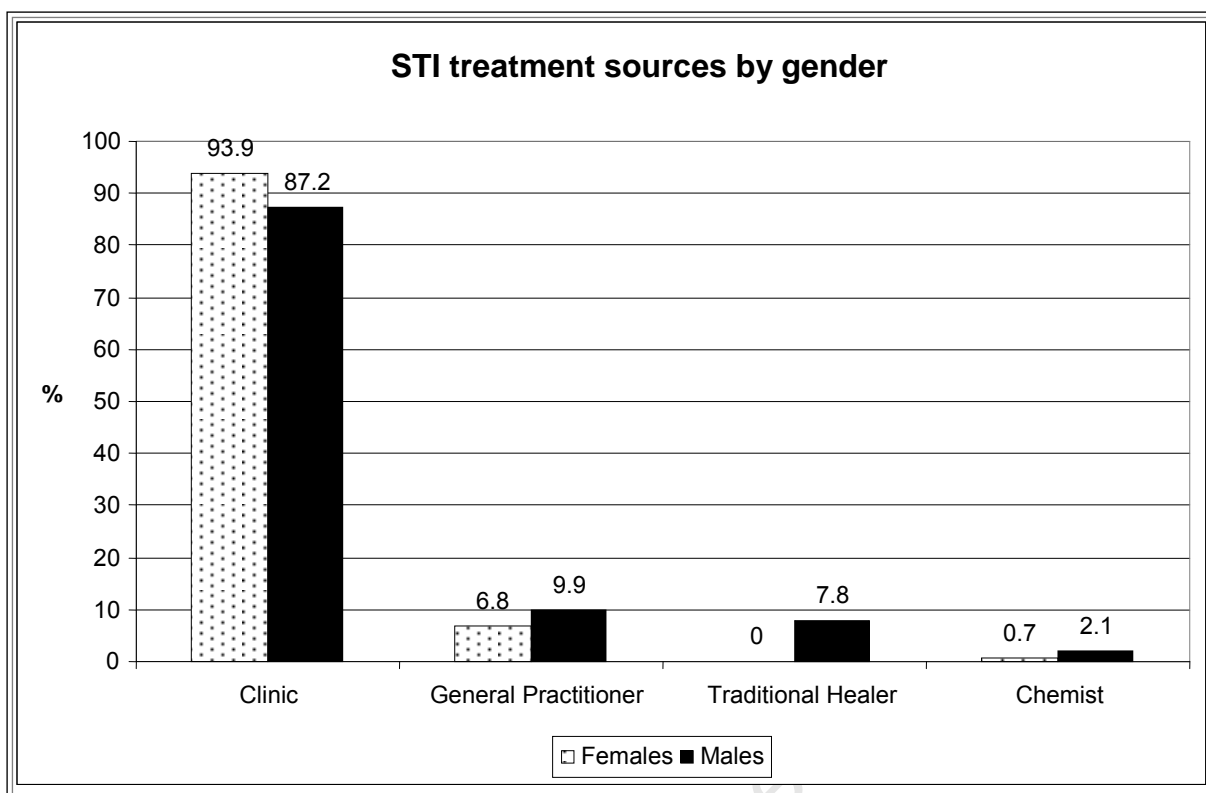


Figure 4-4: STI treatment sources by gender

Of the 144 individuals who reported having been given the partner notification note by the health care provider, 132 (91%) gave the note to their sexual partners. Only, 37% indicated that their partners were also treated; this was mostly the case for partners of the male index case. Of those who were treated, 81% of partners went to the same provider for treatment (Table 4-39)

Table 4-39: STI treatment-seeking behaviour (n =144)

	Females n = 69	Males n = 75	P value	Total n = 144
Note given to partners	65 (94.2)	67 (89.3)	0.291	132 (91.7)
Was partner treated?				
-Yes	47 (32.0)	60 (42.3)		107 (37.3)
-No	92 (62.6)	54 (38.6)		146 (50.9)
-Don't know	8 (5.4)	26 (18.6)	<0.01	34 (11.9)
Was partner treated by same health care provider?				
-Yes	37 (78.7)	50 (83.3)		87 (81.3)
-No	9 (19.2)	9 (15.0)		18 (16.8)
-Don't know	1 (2.1)	1 (1.7)	0.832	2 (1.9)

When asked about the STI history of their partner, 82 (6.8%) respondents indicated that their partner had had an STI in the past year (Table 4.40). Over 70% of respondents indicated that their partners sought treatment for the STI

mainly at the day hospital (86.9%). In 55% of cases, the partner notification note was received by the participants. Treatment was received by over 60% of the cases and 81% from the same provider.

Table 4-40: Partner's STI treatment history

	Females	Males	P value	Total
Has partner had an STI in the past year?				
-Yes	39 (6.5)	43 (7.2)		82 (6.8)
-No	440 (73.3)	381 (63.5)		821 (68.4)
-Don't know	121 (20.2)	176 (29.3)	<0.01	297 (24.8)
Did partner seek treatment for STI?				
-Yes	27 (69.2)	34 (79.1)		61 (74.4)
-No	10 (25.6)	5 (11.6)		15 (18.3)
-Don't know	2 (5.1)	4 (9.3)	0.229	6 (7.3)
Treatment source				
- Day hospital / Clinic	25 (92.6)	28 (82.4)	0.239	53 (86.9)
-GP	2 (7.4)	4 (11.8)	0.570	6 (9.8)
-Traditional Healer	0 (0)	1 (2.9)	0.369	1 (1.6)
-Chemist	0 (0)	1 (2.9)	0.369	1 (1.6)
Was partner given partner notification note?				
-Yes	15 (57.7)	18 (52.9)		33 (55.0)
-No	6 (23.1)	14 (41.2)		20 (33.3)
-Can't remember	5 (19.2)	3 (5.9)	0.153	7 (11.7)
Did partner give the note to you?	13 (86.7)	16 (88.9)	0.846	29 (87.9)
Did you get treatment too?	13 (56.5)	20 (71.4)	0.268	33 (64.7)
Was the treatment from the same provider?	11 (84.6)	16 (80.0)		27 (81.8)

4.4.3 STI history by couple HIV status

Overall, 39.7% of the couples reported that at least one member of the couple had been treated for an STI in the past (Table 4-41). There was no statistically significant difference between the HIV concordant positive, concordant negative and serodiscordant couples. Only 11.5% of all couples reported that at least one member of the couple or both had been treated for genital ulceration in the past year. This was significantly different depending on couple HIV status. 18.2% of HIV concordant positive couples reported this genital ulceration compared to 8.5% of HIV concordant negative and 14% of HIV serodiscordant couples ($p = 0.012$).

Table 4-41: STI history by couple status

	Concordant negative n= 354	Concordant positive n=110	Serodiscordant n=136	P value	Total n=600
Previous STI treatment in one	134 (37.9)	53 (48.2)	51 (37.5)	0.130	238 (39.7)
Previous STI treatment in both	31 (8.8)	9 (8.2)	14 (10.3)	0.821	54 (9.0)
Genital discharge in one or both	90 (25.4)	39 (28.7)	38 (34.6)	0.170	167(27.8)
Genital discharge in both	9 (2.5)	8 (5.9)	7 (6.4)	0.090	24(4.0)
Genital ulcers in one or both	30(8.5)	20(1.82)	19(14.0)	0.012	69(11.5)
Genital ulcers in both	1(0.28)	2(1.82)	2(1.47)	0.196	5(0.83)

Both male and female respondents were asked if they had ever spoken to each other about protecting themselves from STIs as a couple. 65.3% of all respondents reported that they communicated about STIs and this proportion was not significantly different between men and women. A logistic regression analysis of the individual participant data revealed that the significant predictors of communication regarding STIs were individuals who were significantly older, had a history of a genital discharge, had received STI treatment before, were not hazardous drinkers, had had a previous HIV test and had a history of condom use with their partner (Table 4-43).

Table 4-42: Univariate model of the determinants of communicating about STI risk reduction in individuals (unadjusted analysis)

Risk Factor	OR (95% confidence limits)	P value
Sex	1.11 (0.87 – 1.40)	0.396
Age	0.97 (0.96 - 0.98)	<0.01
Employed	1.48 (1.12 – 1.94)	<0.01
Married	0.99 (0.72 – 1.34)	0.947
Live together	0.88 (0.69 – 1.12)	0.303
Previous HIV test	1.61 (1.27 -2.05)	<0.01
Positive AUDIT-C score	0.61 (0.48 – 0.78)	<0.01
Genital discharge in past year	1.71 (1.20 – 2.43)	<0.01
Genital ulcers in past year	1.36 (0.81 – 2.29)	0.242
Previous STI treatment	1.66 (1.24 – 2.23)	<0.01
Total sexual partners in the past year	1.04 (0.93 – 1.15)	0.502
Number of regular sexual partners	1.01 (0.98 – 1.04)	0.504
Previous use of condoms with current partner	2.09 (1.64 - 2.66)	<0.01
HIV result	0.89 (0.69 – 1.15)	0.382
Contraception use	1.25 (1.02 – 1.53)	0.034

Table 4-43: Multivariate logistic regression model of the determinants of communicating about STI risk reduction in individuals

Risk Factor	OR (95% confidence limits)	P value
Sex	1.43 (1.10 – 1.86)	<0.01
Age	0.98 (0.97 – 1.00)	<0.01
Previous use of condoms with current partner	1.74 (1.84 -2.25)	<0.01
Positive AUDIT-C score	0.62 (0.47 – 0.82)	<0.01
Previous STI treatment	1.44 (1.05 – 1.96)	0.023
Previous HIV test	1.38 (1.07 – 1.80)	0.015

Note: Risk factors entered in model building include: sex, age, living together, previous HIV test, previous STI treatment, number of regular sexual partners, use of contraception, condom use with current partner, HIV status, genital discharge, and genital ulcers. (p =0.05)

Table 4-44: Multivariate logistic regression of the determinants of giving a partner notification note to sexual partners in individuals

Risk Factor	OR (95% confidence limits)	P value
Age	0.82 (0.60 – 1.14)	0.253
Employed	0.54 (0.03 – 11.71)	0.696
Condoms at last sex	0.87 (0.03 – 23.85)	0.933
Previous HIV test	0.31 (0.01 – 11.44)	0.526
Genital Discharge	3.92 (0.16 – 97.67)	0.405
Genital Ulcers	0.79 (0.00 – 1164. 48)	0.950
Sexual partners in one year	0.29 (0.05 – 1.65)	0.163
Contraception	7.49 (0.16 – 357.16)	0.307

An analysis of the couples' data revealed that, in 47% of the couples, both members indicated that they had previously communicated with each other about STIs. This proportion was not significantly differently between the three categories of couples. It emerged from the logistic regression analysis of the couples' data that the significant predictors of having discussed STIs before were couples who had previously used condoms for risk reduction and couples whose members had a greater age difference (Table 4-46).

Table 4-45: Univariate model of the determinants of communicating about STI risk reduction in couples

Risk Factor	OR (95% confidence limits)	P value
Couple groups	0.87 (0.69 – 1.10)	0.258
Both tested for HIV before	1.22 (0.76 – 1.95)	0.408
At least one tested for HIV before	1.18 (0.75 – 1.87)	0.468
Genital discharge reported in both	0.94 (0.59 – 1.51)	0.798
At least one with genital ulcer	0.83 (0.44 – 1.55)	0.554
Positive AUDIT-C score in both	0.69 (0.42 – 1.15)	0.157
At least one with positive AUDIT-C	0.81 (0.52 – 1.24)	0.330
One or both report condom use	1.44 (0.83 – 2.53)	0.198
Both report condom use at last sex	1.28 (0.78 – 2.09)	0.336
Both report living together	0.86 (0.58 – 1.26)	0.433
Both have had STI treatment	1.72 (0.80 – 3.74)	0.168
Both had an STI in the past year	1.78 (0.65 – 4.85)	0.259
Age difference	1.03 (1.00 – 1.05)	0.075
Concurrency	0.94 (0.72 -1.25)	0.701

Table 4-46: Multivariate logistic regression model of the determinants of communicating about STI risk reduction in couples

Risk Factor	OR (95% confidence limits)	P value
One or both report ever condom use	2.01 (1.33 – 3.04)	<0.01
Age difference	1.04 (1.01 – 1.07)	<0.01

Risk factors entered in model building include: Couple groups, both tested for HIV before, at least one tested for HIV before, Genital discharge reported in both, At least one with genital ulcer, Positive AUDIT-C score in both, At least one with positive AUDIT-C, one or both report having condoms before, Both report condom use at last sexual encounter, Both report living together, Both have had STI treatment, Both had an STI in the past year, Age difference, Concurrency (p =0.05).

4.5 The predictors of fertility desire among couples and the effects of HIV status

HIV and STI risk reduction counselling involves encouraging couples to use barrier methods such as male or female condoms to prevent HIV acquisition, transmission and super-infection, depending on the couple's HIV status. These barrier methods also prevent the acquisition and transmission of STIs. In addition, if used correctly and consistently, male and female condoms are also effective contraceptive methods. Therefore, the use of condoms can serve a dual function: contraception, and STI and HIV risk reduction. While this is the ideal solution for some couples, in others this might pose challenges for those who want to have children, but who also want to protect themselves against STIs and HIV. The determinants of fertility desire and the influence of couple HIV status in making fertility decisions in couples are thus explored in this section, both quantitatively and qualitatively.

HIV infection within couples influences many critical decisions, among them the couple's plans to have children and the resultant use – or non-use – of contraception. Before undergoing the HIV test, individual members of the couple were asked about their plans regarding having children in the future. Overall, in the individual interviews conducted before the CHCT process, 53% of all the respondents indicated that they would like to have children in the future (Table 4-47). There were significantly more men than women who wanted to have children (63% versus 43%; $p < 0.01$). Just over half of the individuals (56%) had discussed these plans with their partners. On enquiry whether their partner would like to have children in the future, over 50% indicated so.

Table 4-47: Fertility plans stratified by gender

	Females (n=600)	Males (n=600)	P value	Total (n=1200)
Do you want to have children in the future?				
- Yes	258 (43.1)	378 (63.0)		636 (53.0)
- No	210 (35.1)	110 (18.3)		320 (26.7)
- Don't know	131 (21.9)	112 (18.7)	<0.01	243 (20.3)
Discussed having children in the future	322 (53.8)	351 (58.50)	0.098	673 (56.1)
Does your partner want to have children in the future?				
-Yes	308 (51.3)	320 (53.3)		628 (52.3)
-No	77 (12.8)	99 (16.5)		176 (14.7)
-Don't know	215 (35.8)	181 (30.2)	0.052	396 (33.00)
How would you feel if you became pregnant in the next few weeks?				
-Very happy	205 (34.2)	322 (53.7)		527 (44.0)
-Somewhat happy	27 (6.2)	66 (11.0)		103 (8.6)
-Mixed feelings	88 (14.7)	73 (12.2)		161 (13.4)
-Somewhat sad	86 (14.4)	49 (8.2)		135 (11.3)
-Very sad / upset	155 (25.9)	55 (9.2)		210 (17.5)
-Don't know	28 (4.7)	35 (5.8)	<0.01	63 (5.3)
How would your partner feel?				
-Very happy	273 (45.60)	286 (47.7)		559 (46.6)
-Somewhat happy	22 (3.7)	28 (4.7)		50 (4.2)
-Mixed feelings	14 (2.3)	15 (2.5)		29 (2.4)
-Somewhat sad	22 (3.7)	33 (5.5)		55 (4.6)
-Very sad / upset	42 (7.0)	26 (4.3)		68 (5.70)
-Don't know	226 (37.7)	22 (35.3)	0.188	438 (36.5)
Do you think HIV positive people should have children?				
-Yes	140 (23.4)	127 (21.3)		267 (22.4)
-No	303 (50.7)	244 (40.9)		547 (45.8)
-Don't know	155 (25.9)	225 (37.8)	<0.01	380 (31.8)

4.5.1 Community views on childlessness

In the qualitative interviews among couples who had attended CHCT and who were thus aware of their HIV status, individual members of the couple were asked about the influence of the community, family members, HIV status and other factors on fertility decisions.

When a couple has been together for some time, the community expects them to have children. Respondents reported that the community members generally viewed having children as an essential element of being a respected member of the community. Adults with no children were not treated the same way as those with children. The value of having children was rated in different ways. Some of the perceived ideas in favour of having children that were mentioned by the

respondents were: to continue the family name, to help with housework, to prove one's adulthood, among other "benefits".

If a couple did not have children, the community's reactions were predominantly negative. In most cases, the couple was not respected, and might even be scorned. This was age-dependent, in that, the older the participant or the partnership, the higher the expectations that they should be parents, and the worse the blame. The stigma associated with childlessness was so high that community members said that it was advisable even to consider concurrent partners and to have children outside of the relationship in order to gain respect within the community.

28 year old male member of an HIV serodiscordant couple

"...it is important to have a child so if you see that your wife or girl friend is unable to conceive you try other means like trying an external affair."

Very few respondents mentioned adoption as a way of mitigating this stigmatisation. All of those who mentioned adoption regarded it in a negative light, stating that adoption was not culturally accepted in their community and that people who adopt were further stigmatised. In cases where a couple did not have children together but one member of the couple had children from a previous relationship, the blame fell on the one with no children. Conversely, when neither the male nor the female members of the couple had children from previous relationships, the respondents mentioned that both males and females were blamed equally for their childlessness. Interestingly, some male respondents reported that their community tended to blame males when a couple did not have children, whereas most female respondents said that society tended to blame females.

In many instances, the respondents indicated that female identity in the eyes of the community was reinforced by having children.

32 year old male member of an HIV serodiscordant couple

"If you are a married woman with no children, you are not a woman. You will only be a woman if you have children."

Male identity, too, was reinforced by having children. Men with no children were regarded as emasculated, which affected their social standing in the community, in some cases resulting in ineligibility for leadership positions.

24 year old male member of an HIV concordant negative couple

"..They don't look at you as man enough or as a grown man. They still look at you as a young man and you can't actually say anything of value in the community. I remember one time there was an older man who was told that he can't be a street committee member because he doesn't have children"

In addition, the community might develop or invent some perceived reasons why the couple did not have children. These included that the couple was not sexually knowledgeable or that one or both partners were impotent. While this might seem like a gentle accusation, respondents spoke of the strong sense of humiliation associated with this label, particularly for the male members of the couple. The community might also suspect that the couple was HIV positive, and that they thus did not want to have children so that they would not transmit the disease to them. This again placed the couple in a situation where they were doubly stigmatised because the community suspected that they were HIV positive and/or impotent or infertile. In addition, the community might speculate that one or both members of the couple had been previously involved in promiscuity or similar sexual behaviours, or that they might have terminated a pregnancy in the past, and that this could have damaged the woman's reproductive organs. Lastly, there was a general belief that the lack of children in a relationship could be attributed to the "uncleanliness of reproductive organs".

39 year old female member of an HIV serodiscordant couple

"...they say go clean yourselves, worse if both of you never had children. If the boyfriend has a child, the girlfriend gets blamed and if the girlfriend has a child, the boyfriend gets blamed, but if both of you are childless, then you are told to go clean yourselves."

52 year old male member of an HIV sero-incident couple

".....They say she was sleeping with old men at an early age; that is why she cannot bear children. Her womb was messed up so it was closed."

A few participants referred to the fact that jealous individuals in the community might even regard the childless couple as having been bewitched

Socialisation in the community was also greatly affected by childlessness.

43 year old male member of an HIV sero-incident couple

"It is very difficult for a woman to mix with those who have kids because their conversation would not be favourable to her because they will say things about their kids and she has nothing to say. She cannot socialise with them because a thug does not mix with someone who is not a thug.

I: Do they give them respect like those who bear children?

R: No they do not, they are very humiliated."

4.5.2 Community perceptions about HIV positive people having children

The respondents were asked what the community perceptions were regarding HIV positive individuals (and specifically those who are aware of their status), who went ahead and had children. They were asked about the community's general stance towards HIV positive people with children. The overwhelming response was that this was not acceptable in the community. This result from the qualitative interviews reinforced the finding from the baseline questionnaire, in which over 45% indicated that HIV positive people should not have children and 31% did not know whether they should (Table 4-47). The community's view was that HIV positive people must not have children. There were mainly two categories of reasons, namely: issues relating to the HIV positive parent and issues relating to their offspring.

With regard to the HIV positive parent, many community members perceived that the parent would soon become sick and die, and that it was therefore not advisable to have a child. HIV positive people who went on to have children despite knowing their HIV status were thus viewed as insensitive to the plight of the children, who would soon be left without a parent or other caregiver and who would thus become a burden on other people.

41 year old male member of an HIV serodiscordant couple

"They think you are a bad person. You are a murderer because you cannot have a baby while you are HIV positive. This is because you would infect the baby. They take it very angrily and say you give birth to the child and you make the child sick."

41 year old female member of an HIV sero-incident couple

"They ask how you can have a child when you are already dead."

39 year old female member of an HIV serodiscordant couple

"... if you are pregnant and you have HIV, you are going to infect that child, you'll give birth to an HIV positive child. That is how people in the community view it."

With regard to the child of an HIV positive individual, the community's perceptions were that the child would also inevitably be infected with HIV. After the death of the parents, the orphaned children would be a burden on other people who would have to provide for them. The community sympathised with these children of HIV positive people, but the stigma associated with HIV infection was also extended to them, even if the child's HIV status was not known.

28 year old male member of an HIV serodiscordant couple

"There are many who say that they will never get close to HIV positive people and that their children will never play with their children too."

Few respondents indicated whether the community members were in fact aware of the presence and benefits of PMTCT programmes. Very few respondents mentioned the fact that, despite these very negative reasons and the community's extreme disapproval of HIV positive people having children, some HIV positive people did have apparently healthy children.

52 year old male member of an HIV sero-incident couple

"It is very painful; they criticize and say that if you are HIV positive and have a child, your child will be HIV positive too. But there are many HIV positive people who have children and their children are very beautiful."

4.5.3 Participant perceptions of HIV positive people having children

The respondents were then asked about their own personal views about HIV positive people having children. Although the participants were interviewed separately, there were many similarities between their opinions and responses, depending on the couple's HIV status. There was a general perception between the male and female members of concordant negative couples that it was not ideal for HIV positive people to have children. They even indicated that, if they had found out that one or both of them were HIV positive, they would not want to have children. Their reasons for these opinions mirrored the reasons given by the community in general about this issue, and were mainly a concern for the child in view of the ill health of the parents. In addition, HIV positive parents might not be healthy enough to look after the children; moreover, they might die soon, leaving the children orphaned.

Serodiscordant couples and the HIV concordant positive couples approached this question differently, however; there was consensus from many of them that there was no problem with HIV positive people deciding to have children. They gave three main reasons for this. The first was that participants equated HIV to other chronic illnesses; people with other chronic illnesses, which are well managed, can normalise all aspects of their lives, including having children. They felt that the same could apply to HIV positive couples.

43 year old male member of an HIV sero-incident couple

"I don't see a problem. If a diabetic can have kids, why not an HIV positive person?"

Many HIV serodiscordant and concordant positive couples also responded that the most important consideration was how healthy the parents felt at that stage. The second reason was that, if the couple felt healthy, then they could safely have a child and look after it. The most important consideration for them was thus the health of the couple. The measurement of this health in almost all the responses was very subjective, however; it depended on how they "felt" and no mention was made of viral load or CD4 counts.

35 year old female member of an HIV concordant positive couple

"...if a person hasn't had a child, if their health is still fine they can have a child, it depends on how they feel about their health."

The last reason was that everyone had the right to make fertility choices. Unlike the previous two reasons, this focused more on the concept of human rights, with no specific mention made of the personal enabling or disabling factors.

24 year old female member of an HIV serodiscordant couple

"I don't see anything wrong in being HIV positive and having a child because you can have a child no matter what your HIV status is, if you want a child you must have one. Questions like: who is going to look after the baby if you die? You will address it then...."

31 year old female member of an HIV sero-incident couple

"It is okay to have children...people have a right to have children."

4.5.4 Influence of HIV positive status on fertility desire

The interviews looked at the impact of the couple's HIV status. In this regard, the partners were asked whether the fact that they were now aware of their own or their partner's HIV positive status, influenced their plans to have children. Many male and female members of serodiscordant and concordant positive couples

indicated that they wanted to have children in the future despite being HIV positive or having an HIV positive partner. Most of the respondents who planned to have children were now aware of the risk of transmitting the disease to the HIV negative partner (in the case of serodiscordant couples) or to the unborn child (in the case of mother to child transmission). They indicated that they would consult their health care providers to get information on how to have children safely.

52 year old male member of an HIV serodiscordant couple

"We agreed that I should first consult with my doctor so as to tell him about our plans, and see what he says."

31 year old male member of an HIV sero-incident couple

"We will continue having children though we know our situation but we need good counselling on what to do, what steps to take so that everything goes as planned."

41 year old male member of an HIV serodiscordant couple

"I do not feel sad because in my case I got advice that though I am HIV positive, I could still have children. How? By speaking to your doctor, so it's your doctor who will make means for you to have a baby by cleaning and mixing your sperms and you can have a baby."

The few who mentioned that they would not have children cited the fact that they had been educated about condom use, and that they would have to adhere to that to prevent HIV infection and so would not be able to have children. Many indicated that they wanted to get more information from their health care providers on how they could safely fall pregnant.

43 year old male member of an HIV sero-incident couple

"... it must be a mutual decision because you will have to stop using a condom and HIV transmission can occur."

The male and female members of HIV serodiscordant and concordant positive couples who indicated that they were not planning to have future children cited various reasons, some of them tangible ones, such as that they had enough children, or that they were above childbearing age. For those who were still of childbearing age, when asked why they would not want to have children in the future, many indicated that financial stability would be the greatest determinant. Although it was expected that HIV status would be the main determinant, many actually highlighted the fact that the financial implications of raising a child was the greatest deterrent.

33 year old male member of an HIV concordant positive couple

“... because the most important thing now is the finances, it does not matter what your HIV status is, if you do not have ways of raising your child. Children are now very costly.”

31 year old male member of an HIV sero-incident couple

“My work situation is not stable so I wish I could just work as normal because a child needs a lot of things. You need to support the child by all means...”

Others would later respond that their financial situation was not good, and that their knowledge of their HIV status had confirmed their decision not to have a child.

35 year old female member of an HIV concordant positive couple

“I said I was not ready and unemployed... if I was employed I would have a child but nowadays costs are too high. I just can't have a child when I'm unemployed. And because I've been found to be HIV positive I'm less interested now.”

4.5.5 Influence of family and relatives on fertility decisions

In addition to one's HIV status, there were other factors that influence a couple's fertility plans, namely, the role played by significant others, such as close friends and relatives. Participants were asked who would influence their decision the most and how strong that influence would be. Table 4-48 indicates some of the quantitative data from the individual baseline questionnaire. In just over 20% of cases, participants indicated that either their own or their partner's family was expecting them to have more children. In addition, less than 15% of the participants who had indicated that their family or their partner's family was expecting them to have children, indicated that this expectation had a strong influence on their fertility decision.

Table 4-48: Family influence

	Females N=600	Males N=600	P value	Total N=1200
Is your family expecting you to have more children?				
-Yes	80 (13.4)	208 (34.8)		288 (24.1)
-No	479 (80.1)	276 (46.2)		755 (63.1)
-Don't know	39 (6.5)	114 (19.1)	<0.01	153 (12.8)
Is your partner's family expecting you to have more children?				
-Yes	61 (10.2)	108 (18.1)		169 (14.1)
-No	442 (73.9)	258 (43.2)		700 (58.6)
-Don't know	95 (15.9)	231 (38.7)	<0.01	326 (27.3)
How strongly does your family influence your decision to have a child? (n= 288)				
-Very strongly	13 (16.3)	25 (12.0)		38 (13.2)
-Strongly	3 (3.8)	9 (4.3)		12 (4.2)
-Normal	3 (3.8)	14 (6.7)		17 (5.9)
-Weakly	8 (10.0)	5 (2.4)		13 (4.5)
-Very weakly	1 (1.3)	17 (8.2)		18 (6.3)
-Not at all	52 (65.0)	138 (66.4)	0.019	190 (66.0)
How strongly does your partner's family influence your decision to have a child? (n=169)				
-Very strongly	9 (14.8)	12 (11.1)		21 (12.4)
-Strongly	0 (0)	6 (5.6)		6 (3.6)
-Normal	1 (1.6)	5 (4.6)		6 (3.6)
-Weakly	3 (4.9)	3 (2.8)		6 (3.6)
-Very weakly	1 (1.6)	8 (7.4)		9 (5.3)
-Not at all	47 (77.1)	74 (68.5)	0.150	121 (71.6)

Similar findings were obtained from the qualitative interviews. Overall, very few respondents indicated that they would allow external influences to affect their decision to have children. Of these, even fewer individuals indicated that the influence would be compelling enough for them to act accordingly. The respondents demonstrated a great deal of autonomy in making fertility decisions, regardless of the expectations of family members and friends.

43 year old male member of an HIV sero-incident couple

I: How strong is your other family's influence to change your decision of having children?

R: That is mine and my girlfriend's decision. They don't have a say."

24 year old female member of an HIV discordant couple

"My mother doesn't know my HIV status; she wishes that I could have a child.

I: So do you think..., would you have a child just because you want to please your mother's wish?

P: No, no I don't want to have a child because I'm pleasing somebody; I want to have a child because I want to. I would have had a child when the time is right..."

4.5.6 Determinants of fertility desire

Univariate analysis indicated a number of significant risk factors for fertility desire in individuals, as shown in Table 4-49 .

Table 4-49: Univariate model of the determinants of fertility desire in individuals

Risk Factor	BASELINE (n=1200)		FOLLOW-UP (n=566)	
	OR (95% confidence limits)	P value	OR (95% confidence limits)	P value
Sex	2.25 (1.79 – 2.84)	<0.01	1.77 (1.26 – 2.47)	<0.01
Age	0.93 (0.92 – 0.95)	<0.01	0.95 (0.93 – 0.96)	<0.01
Employed	1.75 (1.35 – 2.26)	<0.01	1.58 (1.09 – 2.28)	0.015
Married	0.88 (0.66 – 1.18)	0.387	0.75 (0.48 – 1.16)	0.198
Live together	0.74 (0.58 – 0.93)	0.011	0.84 (0.59 – 1.19)	0.321
Housing type	1.00 (0.80 – 1.26)	0.952	1.18 (0.85 – 1.65)	0.329
Previous HIV test	1.11 (0.89 – 1.40)	0.352	0.96 (0.69 – 1.34)	0.812
Perceived risk	0.81 (0.74 – 0.89)	<0.01	0.87 (0.76 – 1.00)	0.051
Positive Audit-C	0.93 (0.74 – 1.17)	0.552	0.80 (0.57 – 1.13)	0.209
Ever pregnant	0.51 (0.40 – 0.65)	<0.01	0.47 (0.33 – 0.66)	<0.01
Living children	0.53 (0.46 – 0.62)	<0.01	0.49 (0.39 – 0.62)	<0.01
HIV status	1.003 (0.78 – 1.28)	0.984	0.84 (0.58 – 1.22)	0.355
Contraception	1.33 (1.10 – 1.62)	<0.01	0.85 (0.63 – 1.13)	0.259
Family expectations	0.44 (0.36 – 0.54)	<0.01	0.54 (0.40 – 0.73)	<0.01
Partner's family's expectations	0.77 (0.64 – 0.92)	<0.01	0.51 (0.39 – 0.68)	<0.01

Logistic regression analysis to predict the best model of the determinants of fertility desire in individuals resulted in 5 predictor variables at baseline: sex, age, current number of children, family expectation and perceived risk of HIV infection (Table 4-50). At follow-up, 5 predictor variables were identified: sex, age, current number of children, expectations of the partner's family, and perceived risk of HIV infection.

Males were almost 5 times more likely to want to have children in the future at baseline and 2.6 times more likely to want children in the future at the follow-up visit. Both at baseline and at follow-up, those who considered themselves at risk of HIV infection were 20% less likely to desire children in the future. At baseline, those who indicated that the family was expecting them to have more children were 66% less likely to want children in the future; at follow-up, those who indicated that their partner's family was expecting them to have children were 49% less likely to want children in the future. Both at baseline and at follow-up, for every one year increase in respondent age, there was a 4% reduced risk of planning to have children in the future. Lastly, for every one unit increase in number of living children, there was a 44% reduced risk of planning to have

children in the future at baseline and a 46% reduced risk of planning to have children in the future at follow-up.

Table 4-50: Multivariate logistic regression model of the determinates of fertility desire in individuals

Risk Factor	BASELINE		FOLLOW-UP	
	OR (95% confidence limits)	P value	OR (95% confidence limits)	P value
Living children	0.56 (0.47 – 0.66)	<0.01	0.54 (0.41 – 0.70)	<0.01
Sex	4.9 (3.37 – 7.14)	<0.01	2.28 (1.35 – 3.86)	<0.01
Age	0.96 (0.94 – 0.98)	<0.01	0.97 (0.94 – 0.995)	0.024
Family expectations	0.57 (0.43 – 0.76)	<0.01		
Perceived HIV risk	0.81 (0.71 – 0.92)	<0.01		
Partner's family's expectations			0.52 (0.35 – 0.77)	<0.01

It is important to note that HIV status was not a significant determinant of fertility plans, neither at baseline nor at follow-up in both the adjusted and the unadjusted analyses.

4.6 Interpartner reliability of self-reporting of sexual practices

At baseline, 600 couples were interviewed before the HIV pre- and post-test counselling and the HIV testing. At this stage, a questionnaire collecting the basic demographic information as well as sexual behaviours was administered independently to each member of the couple. In this section, the reliability of interpartner reports is assessed in response to questions on some key demographic characteristics and on sexual behaviour. The demographic characteristics assessed for interpartner reliability are marital status, cohabitation status (living together or not), communication behaviours regarding the discussion of topics, and more specifically, the future plans to have children and HIV/STI risk reduction. Four sexual behaviours that are assessed for interpartner reliability are: circumcision status, the use of condoms in the past, the use of condoms during the last sexual encounter, and the number of sexual encounters in the past month.

Bearing in mind that the individual members of the couple could have multiple partners, the questionnaire specified that the responses that were required for all questions were those that were applicable to the relationship between the participant and the partner with whom they were attending at the clinic. This meant that any differences in responses could not be attributed to the participant referring to the partnership or to the sexual characteristics of any concurrent relationships. Interpartner agreement with regard to the responses of the variables mentioned above was measured using the kappa statistic for the categorical variables and the Spearman and the Pearson correlations for the continuous variables.

4.6.1 Reliability of reports of couple characteristics and sexual behaviour

Table 4-51 shows the proportion of males and females who responded 'Yes' to these variables, the percentage agreement and the kappa statistic. The agreement as indicated by the kappa statistic is shown in descending order, starting with the highest level of agreement to the lowest level of agreement. Overall, all couples had excellent levels of interpartner agreement on the questions regarding whether they were married or living together. There was

substantial agreement between the members of couples about the male circumcision status. Moderate agreement was obtained on whether they had ever used condoms in the relationship.

Those who indicated that they had indeed used condoms in the relationship were further asked whether they had used condoms during the last sexual encounter. Fair levels of agreement were reported for the use of condoms during the last sexual encounter. Lastly, low levels of agreement were obtained for questions regarding previous discussions on fertility plans and HIV and STI risk reduction.

Table 4-51: Reliability of reports of couple characteristics and sexual behaviour

	All couples (n=600)		Agreement %	Kappa
	"Yes" response			
	Female n(%)	Male n(%)		
Married	106 (17.7)	116 (19.3)	97.0	0.900
Live together	357 (59.5)	363 (60.5)	93.6	0.865
Circumcised	568 (94.6)	560 (93.3)	97.3	0.764
Previous use of condoms	341 (56.8)	340 (56.7)	75.8	0.508
Condom use during the last sexual encounter (n=268)	197 (73.5)	160 (59.7)	72.0	0.384
Discussed future children	322 (53.7)	350 (58.3)	64.3	0.276
Previous talk about STI risk reduction	385 (64.1)	399 (66.5)	64.0	0.205

Further analyses were done with the discordant reports (where the male and female partners had given different responses to the same variable). In this additional analysis, a comparison was done as to which of the variables the males or the females reported more than did their partners. Because the 'true response' was not known in this study, it was not possible to say which member of the couple over-reported or under-reported which variables. Table 4-52 shows that slightly more males than females reported being married to their partner or living together with them. Similarly, more males than females reported that they had discussed fertility plans and STI risk reduction. With regard to the sexual characteristics, in all instances more females gave the "Yes" response as compared to males, and this discrepancy was more marked for the question enquiring about the use of condoms during the last sexual encounter.

Table 4-52: Reliability of reports of couple characteristics and sexual behaviour

Description	Agreement n (%)	Kappa
Married (n = 594)		
Both say Yes	102 (17.2)	
Both say No	474 (79.8)	
Discordant	18 (3.0)	
▪ Female Yes	4 (0.7)	
▪ Male Yes	14 (2.4)	0.900
Live together (n = 592)		
Both say Yes	341 (57.6)	
Both say No	213 (36.0)	
Discordant	38 (6.4)	
▪ Female Yes	16 (2.7)	
▪ Male Yes	22 (3.7)	0.865
Circumcised (n = 600)		
Both say Yes	556 (92.7)	
Both say No	28 (4.7)	
Discordant	16 (2.7)	
▪ Female Yes	12 (2.0)	
▪ Male Yes	4 (0.3)	0.764
Previous use of condoms (n = 600)		
Both say Yes	268 (44.7)	
Both say No	187 (31.2)	
Discordant	145 (24.7)	
▪ Female Yes	73 (12.2)	
▪ Male Yes	72 (12.0)	0.508
Condom use during the last sexual encounter (n = 268)		
Both say Yes	141 (52.6)	
Both say No	52 (19.4)	
Discordant	75 (28.0)	
▪ Female Yes	56 (20.9)	
▪ Male Yes	19 (7.1)	0.384
Discussed future children (n=599)		
Both say Yes	229 (38.2)	
Both say No	156 (26.0)	
Discordant	214 (35.7)	
▪ Female Yes	93 (15.5)	
▪ Male Yes	121 (20.2)	0.276
Discussed STI risk reduction (n = 600)		
Both say Yes	284 (47.3)	
Both say No	100 (16.7)	
Discordant	216 (36.0)	
▪ Female Yes	101 (16.8)	
▪ Male Yes	115 (19.2)	0.205

When stratified by couple HIV status, a similar trend described above for all the couples' data was obtained (Table 4-53). The levels of agreement for the various variables for the various groups of couples were similar. There were high levels of agreement to questions regarding relationship status, and lower levels of agreements to questions regarding previous communication about fertility desires

and STI risk reduction. Agreement on whether communication took place is still low on the reliability scale, even after stratification by couple status.

Within the different groups of couples, the discordant results were also analysed further. As with the individuals' data, slightly more males in all the groups of couples report being married to and living together with their partner. In addition, more females consistently reported the use of condoms during the last sexual encounter.

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Table 4-53: Reliability of reports of couple characteristics and sexual behaviour by couple HIV status

	Concordant negative (n=356)				Discordant (n=136)				Concordant positive (n=110)			
	Positive reports Female	Male	Agreement %	Kappa	Positive reports Female	Male	Agreement %	Kappa	Female	Positive reports Male	Agreement %	Kappa
Married	65 (18.3)	73 (20.5)	96.6	0.900	21 (15.4)	22 (16.2)	73.1	0.862	20 (18.2)	21 (19.1)	99.1	0.970
Live together	198 (55.6)	200 (56.2)	94.8	0.894	77 (56.6)	78 (57.4)	93.4	0.865	82 (74.5)	85 (77.3)	89.9	0.719
Circumcised	331 (93.0)	329 (92.4)	97.7	0.821	130 (95.6)	125 (91.1)	94.9	0.563	107 (97.3)	106 (96.4)	99.1	0.853
Previous use of condoms	199 (55.9)	197 (55.3)	75.1	0.496	78 (57.4)	84 (61.8)	88.9	0.604	64 (58.2)	59 (53.6)	71.8	0.430
Discussed future children	189 (53.1)	210 (59.0)	62.9	0.248	74 (54.4)	78 (57.4)	66.2	0.315	59 (53.6)	62 (56.4)	66.4	0.321
Condom use during the last sexual encounter	106 (29.8)	83 (23.3)	69.5	0.371	53 (39.0)	50 (36.8)	80.9	0.481	38 (34.5)	27 (24.5)	67.4	0.264
Discussed STI risk reduction	235 (66.0)	238 (66.9)	65.8	0.229	76 (55.9)	90 (66.2)	60.3	0.175	74 (67.3)	71 (64.5)	62.7	0.171

Table 4-54: Reliability of reports of couple characteristics and sexual behaviour by couple HIV status

	Concordant Negative	Serodiscordant	Concordant Positive
Married	n = 351	n = 134	n = 109
Both Yes	63 (17.9)	19 (14.2)	20 (18.3)
Both No	276 (78.6)	110 (82.1)	88 (80.7)
Discordant	12 (3.4)	5 (3.7)	1 (0.9)
Female	2 (0.6)	2 (1.5)	0 (0)
Male	10 (2.8)	3 (2.2)	1 (0.9)
Living together	n = 347	n = 136	n = 109
Both Yes	190 (54.8)	73 (53.7)	78 (71.6)
Both No	139 (40.1)	54 (39.7)	20 (18.3)
Discordant	18 (5.2)	9 (6.6)	11 (10.1)
Female	8 (2.3)	4 (2.9)	4 (3.7)
Male	10 (2.9)	5 (3.7)	7 (6.4)
Circumcised	n = 354	n = 136	n = 110
Both Yes	326 (92.0)	124 (91.2)	106 (96.4)
Both No	20 (5.6)	5 (3.7)	3 (2.7)
Discordant	8 (2.3)	7 (5.1)	1 (0.9)
Female	5 (1.4)	6 (4.4)	1 (0.9)
Male	3 (0.8)	1 (0.7)	0 (0.0)
Previous use of condoms	n = 354	n = 136	n = 110
Both Yes	154 (43.5)	68 (50.0)	46 (41.8)
Both No	112 (31.6)	42 (30.9)	33 (30.0)
Discordant	88 (24.8)	26 (19.1)	31 (28.2)
Female	45 (12.7)	10 (7.4)	18 (16.4)
Male	43 (12.1)	16 (11.8)	13 (11.8)
Discuss future children	n = 353	n = 136	n = 110
Both Yes	134 (38.0)	53 (39.0)	42 (38.2)
Both No	88 (24.9)	37 (27.2)	31 (28.2)
Discordant	131 (37.1)	46 (33.8)	37 (33.6)
Female	55 (15.6)	21 (15.4)	17 (15.5)
Male	76 (21.5)	25 (18.4)	20 (18.2)
Condoms last time	n = 154	n = 68	n = 146
Both Yes	71 (46.1)	45 (66.2)	25 (17.1)
Both No	36 (23.4)	10 (14.7)	6 (4.1)
Discordant	47 (30.5)	13 (19.1)	15 (10.3)
Female	35 (22.7)	8 (11.8)	13 (8.9)
Male	12 (7.8)	5 (7.4)	2 (1.4)
Discuss STI risk reduction	n = 354	n = 136	n = 110
Both Yes	176 (49.7)	56 (41.2)	52 (47.3)
Both No	57 (16.1)	26 (19.1)	17 (15.5)
Discordant	121 (34.2)	54 (39.7)	41 (37.3)
Female	59 (16.7)	20 (14.7)	22 (20.0)
Male	62 (17.5)	34 (25.0)	19 (17.3)

4.6.2 Reliability of reports follow-up couples

All the individuals were requested to return to the research centre for a follow-up interview. In total 566 (47%) individuals returned for the follow-up interview. It was encouraged but not a prerequisite that the participants should return as a couple. Therefore, at follow-up, 258 couples returned (43% of the 600 couples), in addition to 50 individuals.

Of the 258 couples who returned, 169 (66%) were HIV concordant negative, 49 (19%) were HIV concordant positive and 40 (15%) were HIV serodiscordant. In addition, of the 258 couples that returned, 16% were married and 66% were living together with their partner.

With regard to the follow-up couples, the reliability of interpartner reports was assessed on variables that indicated communication about the resultant HIV results and the risk reduction uptake thereafter, and more specifically the use of condoms. Table 4-55 summarises these results. Fair to moderate levels of agreement were obtained for these variables. The lowest levels of agreement were found in response to questions on whether there had been any discussions about risk reduction, fertility plans, HIV test results, or issues related to HIV in general. Both at baseline and at follow-up, more females reported the use of condoms during all sexual encounters since the HIV test and the use of condoms during the last sexual encounter.

Table 4-55: Reliability of reports for follow-up couples

Description	All Couples (n= 258)	
	Agreement n (%)	Kappa
Discussion of HIV results(n=258)		
Both say Yes	115 (44.6)	0.434
Both say No	72 (27.9)	
Discordant	71 (27.5)	
▪ Female Yes	32 (12.4)	
▪ Male Yes	39 (15.1)	
Did CHCT enable you to discuss issues around HIV (n=258)		
Both say Yes	96 (37.2)	0.438
Both say No	89 (34.5)	
Discordant	71 (27.5)	
▪ Female Yes	35 (13.6)	
▪ Male Yes	36 (14.0)	
Discussed future children (n=256)		
Both say Yes	77 (30.1)	0.348
Both say No	96 (37.5)	
Discordant	83 (32.4)	
▪ Female Yes	39 (15.2)	
▪ Male Yes	44 (17.2)	
Discussed HIV risk reduction (n=255)		
Both say Yes	145 (56.9)	0.389
Both say No	44 (17.3)	
Discordant	66 (25.9)	
▪ Female Yes	41 (16.1)	
▪ Male Yes	25 (9.8)	
Use of condoms at all sexual encounters since test(n=254)		
Both say Yes	100 (39.4)	0.504
Both say No	91 (35.8)	
Discordant	63 (24.8)	
▪ Female Yes	38 (15.0)	
▪ Male Yes	25 (9.8)	
Condom use during the last sexual encounter (n=253)		
Both say Yes	105 (41.5)	0.515
Both say No	87 (34.4)	
Discordant	61 (24.1)	
▪ Female Yes	35 (13.8)	
▪ Male Yes	26 (10.3)	

4.6.3 Reliability of reports by age difference

Further analysis was also done to assess whether the differences between the ages of the individuals in the partnership had an effect on the interpartner agreement of relationship characteristic reports. Overall, the age differences between the partners ranged between 0 (no difference) and 28 years. The median age difference was 4 years. The age difference variable was categorised using the cut-off of 4 years (median value). The level of agreement between those with an age difference of 4 or less years (302 couples – 50.3%) and those with an age difference of greater than 4 years (298 couples – 49.7%) was compared (Table 4-56).

Table 4-56: Reliability of reports of couple characteristics and sexual behaviour by age difference

	Age difference ≤ 4 years			Age difference > 4 years		
	n (%)	% agreement	Kappa	n (%)	% agreement	Kappa
Married	n = 299	97.3	0.902	n = 295	96.6	0.898
Both Yes	45 (15.1)			57 (19.3)		
Both No	246 (82.3)			228 (77.3)		
Discordant	8 (2.7)			10 (3.4)		
Female	3 (1.0)			1 (0.3)		
Male	5 (1.7)			9 (3.1)		
Live together	n = 298	93.0	0.855	n = 294	94.2	0.876
Both Yes	164 (55.0)			177 (60.2)		
Both No	113 (37.9)			100 (34.0)		
Discordant	21 (7.0)			17 (5.8)		
Female	10 (3.4)			6 (2.0)		
Male	11 (3.7)			11 (3.7)		
Circumcised	n = 302	97.0	0.814	n = 298	97.7	0.620
Both Yes	271 (89.7)			285 (95.6)		
Both No	22 (7.3)			6 (2.0)		
Discordant	9 (3.0)			7 (2.3)		
Female	6 (2.0)			6 (2.0)		
Male	3 (1.0)			1 (0.3)		
Use of condoms	n = 302	74.8	0.490	n = 298	76.85	0.526
Both Yes	131 (43.4)			137 (46.0)		
Both No	95 (31.5)			92 (30.9)		
Discordant	76 (25.2)			69 (23.2)		
Female	37 (12.3)			36 (12.1)		
Male	39 (13.0)			33 (11.1)		
Condoms last sex	n = 131	67.2	0.326	n = 137	76.6	0.436
Both Yes	59 (45.0)			82 (59.9)		
Both No	29 (22.1)			23 (16.8)		
Discordant	43 (32.8)			32 (23.4)		
Female	32 (24.4)			24 (17.5)		
Male	11 (8.4)			8 (6.1)		
Discuss children	n = 302	62.3	0.231	n = 297	66.3	0.321
Both Yes	117 (38.7)			112 (37.7)		
Both No	71 (23.5)			85 (28.6)		
Discordant	114 (37.7)			100 (33.7)		
Female	46 (15.2)			47 (15.8)		
Male	68 (22.5)			53 (17.8)		
STI risk reduction discussion	n = 302	61.9	0.159	n = 298	66.1	0.256
Both Yes	141 (46.7)			143 (48.0)		
Both No	46 (15.2)			54 (13.6)		
Discordant	115 (38.1)			101 (33.9)		
Female	48 (15.9)			53 (17.8)		
Male	65 (21.5)			48 (16.1)		

The results from Table 4-56 indicate slightly better agreement for variables such as condom use during the last sexual encounter and discussion of STI risk reduction among couples that have greater than 4 years age difference.

From the general demographics statistics presented earlier for this study population, it was noted that there was a high prevalence of concurrency. With

this in mind, analysis was done to compare the reliability of responses in three categories of couples, namely: those in whom none of the partners was in a concurrent partnership and those, in which either one was or both were in a concurrent partnership. The results of this analysis are shown in Table 4-57 .

In addition, from the general demographic statistics for this study population, it was noted that there was a high prevalence of hazardous drinking, as indicated by the AUDIT-C score. Analysis was therefore done to compare the reliability of responses in three categories of couples, namely: those in whom none of the partners was a hazardous drinker and those in which either one or both were hazardous alcohol consumers. The results of this analysis are shown in Table 4.58 .

In summary, the results indicate that the levels of agreement do not appear to be affected by concurrency status as well by the AUDIT-C score of partners. However, as noted above, there were high levels of agreement to questions regarding relationship status, and lower levels of agreements to questions regarding previous communication about fertility desires and STI risk reduction, and very low levels of agreement on whether communication took place.

Table 4-57: Reliability of reports of couple characteristics and sexual behaviour by concurrency status

	No concurrent in both (n=118)	% agree ment	Kappa	One in concurrent relationship (n=276)	% agree ment	Kappa	Both in concurrent relationships (n=206)	% agree ment	Kappa
Married		96.6	0.90		96.3	0.89		98.04	0.92
Both Yes	23 (19.5)			53 (19.2)			26 (12.6)		
Both No	91 (77.1)			209 (75.7)			174 (84.5)		
Discordant	4 (3.4)			10 (3.6)			4 (1.9)		
Female	1 (0.8)			2 (0.7)			1 (0.5)		
Male	3 (2.5)			8 (2.9)			3 (1.5)		
Living together		95.7	0.91		90.4	0.79		96.6	0.93
Both Yes	60 (50.8)			163 (59.1)			118 (57.3)		
Both No	51 (43.2)			81 (29.3)			81 (39.3)		
Discordant	5 (4.2)			26 (9.4)			7 (3.3)		
Female	1 (0.8)			13 (4.7)			2 (1.0)		
Male	4 (3.4)			13 (4.7)			5 (2.4)		
Circumcised		94.9	0.48		98.6	0.85		97.1	0.80
Both Yes	109 (92.4)			260 (94.2)			187 (90.8)		
Both No	3 (2.5)			12 (4.3)			13 (6.3)		
Discordant	6 (5.1)			4 (1.4)			6 (2.9)		
Female	5 (4.2)			2(0.7)			5 (2.4)		
Male	1 (0.8)			2(0.7)			1 (0.5)		
Previous use of condoms		79.7	0.59		78.3	0.56		70.4	0.38
Both Yes	53 (44.9)			122 (44.2)			93 (45.1)		
Both No	41 (34.7)			94 (34.1)			52 (25.2)		
Discordant	24 (20.3)			60 (21.7)			61 (29.6)		
Female	13 (11.0)			28 (10.1)			32 (15.5)		
Male	11 (9.3)			32 (11.6)			29 (14.1)		
Condoms last time		66.0	0.20		69.7	0.34		78.5	0.54
Both Yes	29 (24.6)			62 (22.5)			50 (24.3)		
Both No	6 (5.1)			23 (8.3)			23 (11.2)		
Discordant	18 (15.3)			37 (13.4)			20 (9.7)		
Female	14 (11.9)			27 (9.8)			15 (7.3)		
Male	4 (3.4)			10 (3.6)			5 (2.4)		
Discuss future children		64.4	0.27		65.5	0.29		62.6	0.26
Both Yes	48 (40.7)			114 (41.3)			67 (32.5)		
Both No	28 (23.7)			66 (23.9)			62 (30.1)		
Discordant	42 (35.6)			95 (34.4)			77 (37.4)		
Female	22 (18.6)			39 (14.1)			32 (15.5)		
Male	20 (16.9)			56 (20.3)			45 (21.8)		
Discuss STI risk reduction		69.5	0.33		59.8	0.11		66.5	0.27
Both Yes	59 (50.0)			126 (45.7)			99 (48.1)		
Both No	23 (19.5)			39 (14.1)			38 (18.4)		
Discordant	36 (30.5)			111 (40.2)			69 (33.5)		
Female	15 (12.7)			55 (19.9)			31 (15.0)		
Male x	21 (17.8)			56 (20.3)			38 (18.4)		

Table 4-58: Reliability of reports of couple characteristics and sexual behaviour by AUDIT-C score

	Both hazardous drinkers (n=228)	% agreement	Kappa	One hazardous drinker (n=244)	% agreement	Kappa	Both not hazardous drinkers (n=128)	% agreement	Kappa
Married		96.4	0.79		98.4	0.95		95.3	0.89
Both Yes	17 (7.5)			48 (19.7)			37 (28.9)		
Both No	200 (87.7)			190 (77.9)			84 (65.6)		
Discordant	8 (3.5)			4 (1.6)			6 (4.7)		
Female	2 (0.9)			1 (0.4)			1 (0.8)		
Male	6 (2.6)			3 (1.2)			5 (3.9)		
Living together		92.4	0.84		94.7	0.89			
Both Yes	122 (53.5)			142 (58.2)			77 (60.2)		
Both No	84 (36.8)			88 (36.1)			41 (32.0)		
Discordant	17 (7.5)			13 (5.3)			8 (6.3)		
Female	6 (2.6)			6 (2.4)			4 (3.1)		
Male	11 (4.8)			7 (2.8)			4 (3.1)		
Circumcised		96.5	0.54		98.4	0.87		96.9	0.78
Both Yes	215 (94.3)			225 (92.2)			116 (90.6)		
Both No	5 (2.2)			15 (6.1)			8 (6.3)		
Discordant	8 (3.5)			4 (1.6)			4 (3.1)		
Female	6 (2.6)			3 (1.2)			3 (2.3)		
Male	2 (0.9)			1 (0.4)			1 (0.8)		
Previous use of condoms		75.4	0.51		73.4	0.44		81.3	0.62
Both Yes	87 (38.2)			119 (48.8)			62 (48.4)		
Both No	85 (37.3)			60 (24.6)			42 (32.8)		
Discordant	56 (24.6)			65 (26.6)			24 (18.8)		
Female	23 (10.1)			40 (16.4)			10 (7.8)		
Male	33 (14.5)			25 (10.2)			14 (10.9)		
Condoms last time		71.3	0.41		69.8	0.27		77.4	0.51
Both Yes	40 (17.5)			67 (27.5)			34 (26.6)		
Both No	22 (9.6)			16 (6.6)			14 (10.9)		
Discordant	25 (11.0)			36 (14.8)			14 (10.9)		
Female	19 (8.3)			26 (10.7)			11 (8.6)		
Male	6 (2.6)			10 (4.1)			3 (2.3)		
Discuss future children		65.2	0.31		63.5	0.25		64.1	0.21
Both Yes	70 (30.7)			98 (40.2)			61 (47.7)		
Both No	78 (34.2)			57 (23.4)			21 (16.4)		
Discordant	79 (34.6)			89 (36.5)			46 (35.9)		
Female	30 (13.2)			36 (16.8)			27 (21.1)		
Male	49 (21.5)			53 (21.7)			19 (14.8)		
Discuss STI risk reduction		70.0	0.20		64.3	0.18		68.8	0.23
Both Yes	141 (61.8)			123 (20.4)			72 (56.3)		
Both No	50 (21.9)			34 (13.9)			16 (12.5)		
Discordant	89 (39.0)			87 (35.7)			40 (31.3)		
Female	37 (16.2)			46 (18.9)			18 (14.1)		
Male	52 (22.8)			41 (16.8)			22 (17.2)		

In addition, from the general demographic statistics for this study population, it was noted that there was a high prevalence of cohabitation without formal marriage. Analysis was also done to compare the reliability of responses in two categories of couples, namely: those in whom both partners reported that they were married and those in which either one or both reported that they were not married. The results of this analysis are shown in Table 4.59 . Married couples did not display better agreement compared to those that were not married.

Table 4-59: Reliability of reports of couple characteristics and sexual behaviour by marital status

	Married (n=102)			Not married (n=474)		
		% agreement	Kappa		% agreement	Kappa
Live together	n=101	100	1.00	n=469	92.3	0.846
Both Yes	100 (99.0)			225 (48.0)		
Both No	1 (1.0)			209 (45.0)		
Discordant	0 (0)			36 (7.7)		
Female	0 (0)			16 (3.4)		
Male	0 (0)			20 (4.3)		
Discuss children	n=102	71.6	0.374	n=474	62.7	0.249
Both Yes	52 (51.0)			171 (36.1)		
Both No	21 (20.6)			126 (26.6)		
Discordant	29 (28.4)			177 (37.3)		
Female	13 (12.7)			76 (16.0)		
Male	16 (15.7)			101 (21.3)		
STI risk reduction	n=102	62.8	0.175	n=474	64.4	0.212
Both Yes	48 (47.1)			226 (47.7)		
Both No	16 (15.7)			79 (16.7)		
Discordant	38 (37.3)			169 (35.7)		
Female	17 (16.7)			74 (15.6)		
Male	21			91 (19.2)		
Circumcised	n=102	98.0	0.490	n=474	97.1	0.778
Both Yes	99 (97.0)			433 (91.4)		
Both No	1 (1.0)			27(5.7)		
Discordant	2 (2.0)			14 (3.0)		
Female	1 (1.0)			11(2.3)		
Male	1 (1.0)			3(0.6)		
Previous use of condom	n=102	79.4	0.586	n=474	74.7	0.481
Both Yes	45 (44.1)			214 (45.1)		
Both No	36 (35.3)			140 (29.5)		
Discordant	21 (20.6)			120 (25.3)		
Female	13 (12.7)			58 (12.2)		
Male	8 (7.8)			62 (13.1)		
Condoms last sex	n=45	75.6	0.448	n=214	71.5	0.378
Both Yes	25 (55.6)			111 (51.9)		
Both No	9 (20)			42 (19.6)		
Discordant	11 (24.4)			61 (28.5)		
Female	8 (18.8)			46 (21.5)		
Male	3 (6.7)			15 (7.0)		

4.6.4 Reliability on reporting frequency of sex

The male and female members of the couple were independently asked about the number of sexual encounters they had had in the past month. Again, in order to ensure that the participants' responses referred to the partnership at the clinic, the question explicitly asked about the partner with whom they were having the HIV test at the clinic.

In total, 580 women and 596 men responded to this question. Complete data from 578 couples was available for this response. The summary statistics are shown in Table 4.60 :

Table 4-60: Interpartner differences in reported frequency of sex in the past 1 month

	Overall	Concordant negative	Concordant positive	Serodiscordant
N	578	343	105	130
Range	0 - 58	0 - 58	0 - 31	0 - 26
Median	2	2	3	2
Mean	4.6	4.4	4.9	4.9

Analysis focusing on the interpartner responses indicated that the differences in the number of sexual encounters (female response subtracted from the male response or vice versa) reported by partners in the same couple ranged from 0 (no difference) to 58, with a mean difference of 4.6 and a median difference of 2 (Table 4-60).

Overall 122 (20%) of the couples reported identical sexual frequency in the past month, whereas 478 (80%) had different responses to this question. The difference between the three groups of couples was not statistically significant ($p=0.228$). Spearman correlation was done to assess the male versus female correlations of reports of frequency of sex.

Figure 4.5 shows a scatter plot of the male versus female reports of frequency of sex in past month with interpartner comparison of these reports. As the reported frequency of sex in the past month increases, there are more male reports as compared to the female reports.

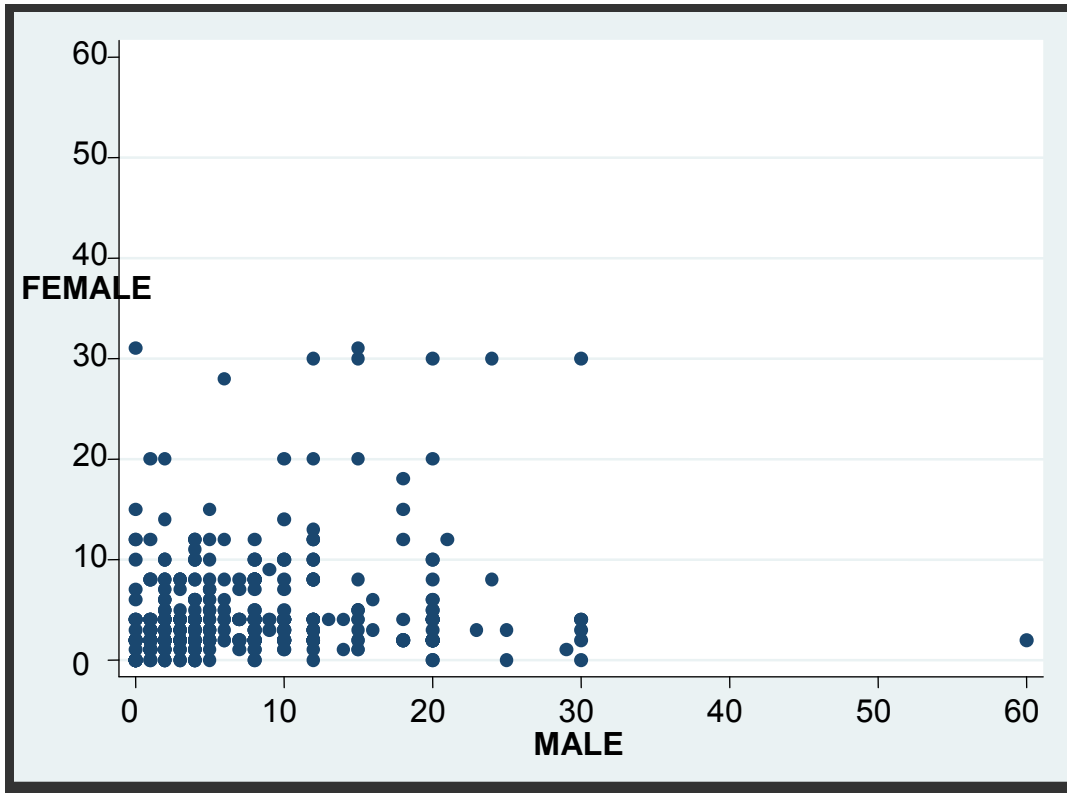


Figure 4-5: Female(y axis) versus male (x axis) reports of frequency of sex in the past 1 month

Table 4.61 indicates the absolute differences in the reported sexual frequency between male and female partners.

Table 4-61: Differences in reports of sexual encounters in the past month in couples

Difference	N 600(%)
No difference	122 (20.3)
1 – 2	188 (31.3)
3 – 4	76 (12.7)
5 – 6	52 (8.7)
7 – 8	39 (6.5)
9 – 10	35 (5.8)
>10	88 (14.7)

4.7 Summary of Chapter 4

In summary, this chapter has presented detailed information on the results of this thesis presented per thesis objective. The presented data has been for the individual responses and characteristics, couple responses and characteristics as well as in-depth information from the qualitative interviews. In chapter 5, the key results will be summarised before the discussion of the thesis findings.

CHAPTER 5: DISCUSSION

This chapter starts with a summary and description of the key findings of the study, as per the 5 objectives set out in Chapter 1. The key findings are then discussed by means of comparisons with the results of other studies. The chapter includes a discussion of some of the limitations of this study, and an analysis of the implications of the results for the promotion of CHCT.

5.1 Key Findings

The key findings in respect of each study objective are summarised in the subsections below.

5.1.1 Socio-behavioural risk factors for HIV status in couples

Overall, the HIV prevalence in the study sample was higher among the female participants than among the male participants. The majority of the 600 couples tested for HIV, were HIV concordant negative, and about a fifth were HIV serodiscordant. Of those who were HIV serodiscordant, over 70% were couples in which the HIV positive partner was female. It is important to note that, in over 30% of the couples, both members of the couple were classified as hazardous drinkers as measured by the positive AUDIT-C score. This did not differ among the three categories of couples. Condom use at some stage in the relationship was reported by almost half of all the couples and there were no differences among the three categories of HIV concordant negative, HIV concordant positive and HIV serodiscordant couples. However, the serodiscordant couples reported most condom use at last sexual encounter.

In multivariate analysis, HIV concordant positive couples were more likely than HIV concordant negative couples to have a greater age difference, to be living together, to be both unemployed, and to be less likely to have had a previous HIV test. There was no significant difference between the three groups of couples with regard to employment status. However, concordant negative couples had the highest median total income.

5.1.2 Experiences in and perceptions of CHCT

In over two-thirds of the 600 couples who attended CHCT at the research centre at the time of the study, at least one member of the couple was aware of his/her HIV status from a previous HIV test. This proportion was highest in concordant negative couples and lowest in concordant positive couples. It is also worth noting that, in slightly over a quarter of the couples, both members of the couple had had a previous HIV test at separate times. However, less than 5% of the respondents reported having ever attended CHCT before.

Contextual factors (such as the perceptions of community members with regard to HIV and HIV testing specifically) were found to have a significant influence on the couple's decision to test for HIV. The results indicate that there was considerable variation between what motivated couples to test and what motivated specific members of each couple to test for HIV. Both male and female respondents indicated that it had not been easy to invite their partner to attend CHCT. In significantly more cases, the decision to attend CHCT at the research centre had been taken by the female members of the couple, and inviting the male partner involved the use of various negotiation skills.

The majority of the couples felt that their experiences of testing for HIV and obtaining the test results together had been positive, while very few couples had had negative experiences. Positive experiences fell into two broad categories, irrespective of HIV status, namely, the counsellor's assurance that the HIV test and its results were confidential, and the education they received regarding the various aspects of HIV, coupled with the possibility of asking questions and clarifying general issues regarding HIV. In almost all serodiscordant couples, the HIV positive partner was very concerned that they might be deserted by the HIV negative partner. In many of these cases, however, the HIV negative partner in qualitative interviews emphasised their commitment to the relationship despite the differing HIV status. During the follow-up meetings held at least a month after the initial CHCT process, the couples reported improved risk reduction uptake and improved communication, as well as general improvements in other aspects of their lives.

5.1.3 Self-reported sexually transmitted infection management

Recent STIs were reported by about a fifth of the respondents. Those who reported a recent STI were significantly more likely to be females, HIV positive, living in informal housing, to have had a recent HIV test, and to have used a condom at some stage with the current partner.

Both male and female respondents were asked if they ever spoke about protecting themselves against STIs as a couple. Over two thirds of all respondents reported that they communicated about STIs, and this proportion was not significantly different between men and women. In logistic regression analysis of the individual participant data, the significant factors associated with the communication regarding STIs were individuals who were significantly older, had a history of a genital discharge compared to those who did not have a history of genital discharge, had received STI treatment before, were not hazardous drinkers, had had a previous HIV test and had a history of condom use with their partner. Analysis of the couples' data revealed that, in 47% of the couples, both members indicated that they had previously communicated with each other about STIs. This proportion was not significantly different between the three categories of couples. In logistic regression analysis of the couples' data, the significant factors associated with having discussed STIs before were couples who had used condoms in the past for risk reduction and more so for those with a greater age difference.

Over 95% of both men and women had sought medical treatment for their recent STI episode. The most common source of such medical care for both men and women was the public sector clinic or day hospital. On further enquiry about the STI consultation session, it emerged that a partner notification note had been provided to about half of the respondents; of these, significantly more were males, that is more of the males had received the notes to notify their female partners.

5.1.4 Factors associated with fertility desire among couples

Overall, in individual interviews before undergoing CHCT, 53% of all the respondents indicated that they would like to have children in the future; significantly more men than women reported this. This proportion was similar at follow-up. Just over half of the individuals had discussed plans to have children with their partners. Logistic regression analysis to predict the best model of the determinants of fertility desire in individuals resulted in the following 5 predictor variables at baseline: sex (males more likely to want children than women), age (younger people more likely to want children than older people); current number of children (those with fewer children would like to have children in the future), family expectation (those whose families expected them to have children were more likely to want children in the future), and perceived risk of HIV infection (lower perceived risk associated with wanting children). The following 4 predictor variables were identified at follow-up: sex (males more likely to want children than women), age (younger people were more likely to want children than older people), current number of children (those with fewer children would like to have children in the future), partner's family's expectation (those whose partner's family expected them to have children were more likely to want children in the future). Males were almost 5 times more likely to want children in the future at baseline, and 2.6 times more likely to want children in the future at the follow-up visit. Both at baseline and at follow-up, those who considered themselves at risk of HIV infection were 20% less likely to desire children in the future.

In the qualitative study, respondents indicated that society expects men and women above a certain age to have children. Factors such as financial stability and, to a lesser extent, community and family expectations seem to play a more influential role in shaping fertility plans than the HIV status of the individual or of their partner.

5.1.5 Interpartner reliability of self-reporting of behavioural practices

A comparison of couples' responses to questions regarding sexual and communication behaviours revealed that there was low interpartner agreement with respect to many of these questions, particularly for questions regarding communication behaviours.

Overall, all couples had excellent levels of interpartner agreement on the more objective questions regarding whether they were married or living together. Moderate agreement was obtained in response to the question whether they had ever used condoms in their relationship. When stratified by couple HIV status, the levels of agreement among the groups of couples in respect of the various variables were similar. In general, in all couples there were high levels of agreement in response to questions regarding relationship status, but lower levels of agreement in response to questions regarding previous communication about fertility desires and STI risk reduction. Among the couples who attended the follow-up interview, the reliability of interpartner reports was assessed according to variables that indicated communication on the resultant HIV results and the risk reduction uptake thereafter, and more specifically condom use practices. Fair to moderate levels of agreement were obtained for these variables. The lowest levels of agreement were on responses to questions on whether there had been any risk reduction discussion, fertility plans discussion or discussion of HIV test results and issues related to HIV in general. The age differences between partners, concurrency status, marital status and hazardous alcohol consumption did not affect the level of interpartner agreements.

SUMMARY OF KEY FINDINGS

- Concordant positive couples had a greater age difference than the other categories of couples; they were also more likely to live together and to be unemployed.
- Experiences of couples in the CHCT process were predominantly positive, regardless of the resultant HIV status of the couple. Couples highly appreciated the assurance that the HIV test results would be confidential. Post-test risk reduction uptake reported in follow-up interviews was high.
- Discussion about STIs and STI risk reduction was more common among couples and individuals that were implementing other risk reduction measures, such as condom use, that were not consuming alcohol hazardously, and that had previously had an HIV test.
- In general, very few couples discussed their fertility desires with each other. Both males and females highlighted the fear of the double stigma associated with being childless and being HIV positive. Financial stability and societal expectations were reported to have a greater influence on their fertility plans than HIV status.
- A comparison of couples' responses to some questions regarding sexual and communication behaviours revealed that there was low interpartner agreement in respect of many of these questions, particularly for questions regarding communication behaviours.

Figure 5-1: Summary of Key findings

5.2 Study population characterisation

The general characteristics of the study population indicate that the study participants were predominantly IsiXhosa speakers living in informal settlements. The majority were unemployed, but those who were employed were mainly semi-skilled workers. The reported median monthly household income of R600 (US\$80) indicates that they were of a low socio-economic status in comparison to the population average, given the median monthly household income for the Guguletu district of R1100 (US\$147). The study population reported high levels of alcohol consumption, and specifically hazardous alcohol consumption, as indicated by the AUDIT-C screening questionnaire.

This reported high prevalence of hazardous drinking demonstrates the high likelihood that this population tends to engage in high risk behaviour. This is because various studies have indicated the link between alcohol consumption and HIV and STIs, particularly the lack of risk reduction uptake due to reduced cognitive function in people who consume alcohol (Avalos et al., 2010; Ghebremichael & Paintsil, 2009; Shuper et al., 2009; Van Tieu & Koblin, 2009). Kalichman et al., (2007) conducted a study in SA to establish the link between the frequency, quantity and context of alcohol use in relation to sexual risk behaviour in men and women at an STI clinic in Cape Town. They found that 58% of men and 30% of women reported drinking problems. In this study it was noted, for instance, that the drinking habits of the partner, as well as the time elapsed between drinking and having sex, were very important determinants of HIV risk reduction uptake. Unfortunately, even in serodiscordant couples, the use of alcohol has been associated with a lack of risk reduction uptake (Coldiron et al., 2008).

People living with HIV have also been found to engage in high risk sexual behaviours when under the influence of alcohol. Shuper et al. (2009) conducted a systematic review and a meta-analysis on the impact of alcohol on high risk sexual behaviours among PLWHA. Their analysis showed that, of the 27 studies selected, PLWHA who consumed any amount of alcohol were more likely to engage in unprotected sex; the same applied to those who engaged in

problematic drinking. The general conclusion was that alcohol consumption at any level was significantly associated with unprotected sex among PLWHA. They conclude with a recommendation that prevention programmes should include teaching skills to PLWHA on the effects of alcohol and the use of condoms when intoxicated. Although the population that participated in this PhD study was not entirely made up of PLWHA, the same tendency to have sex under the influence of alcohol was reported by 386 (32%) of the respondents.

Moreover, male consumption of alcohol has been significantly associated with unprotected sex; therefore, there are recommendations that counselling couples must include alcohol consumption assessment (Coldiron et al., 2008). With a similar objective, Kiene et al. (2008) assessed the association between alcohol consumption before sex and unprotected sex among 82 HIV positive people in Cape Town, SA. In this longitudinal study, daily telephone contact over 42 days was done with participants reporting their drinking and sexual behaviour for the last night. When the participant did not drink alcohol before sex, 80% of sexual events were unprotected, compared to 83% when the participant drank alcohol. Therefore, consumption of alcohol before sex increased the proportion of unprotected sex. They also found a pattern that suggests that, for both men and women, drinking by the sexual partner before sex influences the likelihood that sex will be unprotected more so than their own drinking.

Meeting partners at shebeens has also been documented as a risk factor for HIV transmission, as those who met their sex partners at the shebeens were usually heavy drinkers and more likely to practise unsafe sex (Kalichman et al., 2008). In this PhD study community, the most common place of consuming alcohol is in the shebeens. Although it was not ascertained where the partners had met each other, there are a large number of shebeens in this particular area, and most of the participants who regularly consumed alcohol frequented these.

Based on the finding that a high proportion of respondents had a positive AUDIT-C score, there is a strong suggestion that there is a higher prevalence of high risk sexual behaviours in this study population. This assumption is supported by study findings that hazardous drinkers were less likely to have had a previous HIV test,

less likely to have ever used condoms with their current partner, and less likely to have used a condom at the last sexual encounter. They were generally poorer and furthermore reported more lifetime sexual partners and had engaged in more sexual encounters in the past one month.

The reported male circumcision status in this study was almost 100%. This was an expected finding, as men in this community are traditionally initiated into adulthood, which involves the practice of male circumcision. However, this report of male circumcision status was not verified by physical inspection. Because of this lack of verification, and the fact that almost 100% of the respondents replied that they had been circumcised, this study could not test the hypothesis, shown in other studies, that male circumcision has a protective effect on HIV acquisition (Auvert et al., 2005). The traditional male circumcision procedure is often done in non-clinical settings as part of the manhood initiation rituals. This procedure is often done by traditional leaders/traditional surgeons who in the majority of cases are not medically qualified. As such, what the “traditional surgeons” do cannot be assumed to be the correct removal of the foreskin as is the intended purpose of the medical male circumcision. Several researchers have examined various aspects of this practice in South Africa (Mayatula & Mavundla, 1997; Mavundla et al., 2009; Vincent, 2008; Wilcken, Keil and Dick, 2010). Due to the several complications and fatalities resulting from the traditional male circumcision, there are initiatives to train and register traditional surgeons in South Africa and to evaluate their competence (Peltzer et al., 2008).

An important finding was that a high proportion of this population had previously undergone HIV testing, which contradicts the low VCT uptake described for that community of approximately 8% per year. This could be because participants are over-reporting the fact that they had previously undergone an HIV test. Alternatively, it could indicate that people who tend to volunteer for research studies are generally habitual HIV testers for a variety of reasons. The latter reason seems to be the most likely, as lying about having had a previous HIV test does not confer any advantage on the participants. Other researchers in SA have also found similar results, where a high proportion of research populations had previously undergone an HIV test. A study by Pettifor et al. (2008) looked at the

HIV testing history and disclosure among attendees at a primary health care facility in the inner city of Johannesburg in SA. In Pettifor's study, there was a high prevalence of previous testers (48.5%) in this population, with a 90% disclosure rate. In comparison to the general population in SA, 96% of public health facilities in the country are offering VCT and 11 - 25% of adults had been tested and received their results in 2009 (South African National Aids Council (SANAC), 2010).

However, in general, low VCT uptake is a common problem in SSA, as noted by Matovu and Makumbi (2007); they discuss the low VCT uptake in SSA, despite the upscaling of VCT provision facilities. The common causes for this are stigmatisation and logistical issues, such as a lack of physical access to testing facilities. Logistical issues can be easily corrected by deploying mobile VCT facilities in inaccessible areas. In this PhD study community, however, physical access to the testing facilities was not a setback, as most VCT centres were easily accessible. The deterrent factor in this case is most likely HIV-related stigmatisation.

The HIV prevalence in the study population was 30%, with a significantly higher prevalence among the female respondents. This prevalence is similar to the 29% HIV prevalence obtained for Guguletu in recent antenatal surveys. The higher HIV prevalence among women is consistent with the description of the so-called feminisation of the HIV epidemic in SSA (Annan, 2002). However, the contradiction that emerged from this study is that, although the HIV prevalence is higher among the female respondents, the reported risk behaviours among women in this population are lower than those reported by men. In this study, female responses to questions on all variables that could give an indication of sexual risk behaviours (such as age at sexual debut, use of condoms, number of total lifetime sexual partners, transactional sex and concurrency) were all indicating much less risk behaviour than that reported by men. This finding raises the question as to whether women are under-reporting sexual risk behaviours because this is socially desirable, or whether men are over-reporting these behaviours to reinforce their masculinity. Alternatively, it reinforces the conclusion that the higher HIV prevalence in women can be attributed to the increased

biological susceptibility in women as well as to the socio-cultural factors that result in gender-based inequalities and hence greater female vulnerability to HIV infection.

Significantly more women than men had previously undergone HIV testing. This could be because women receive greater exposure to the health care facilities that are in most cases more female-friendly environments; women might be better informed about HIV testing options and benefits. In addition, there is widespread implementation of prevention of mother-to-child transmission (PMTCT) programmes in this community, and thus a number of women who participated in this study could have been tested in these programmes.

Nonetheless, the data suggest that more women than men have tested their HIV status in the past, and that they were likely to attend CHCT because they needed to know the male partner's HIV status. In this study, it appeared that women were dominating the decisions with regard to going for CHCT and recommending to the partner that they needed to go for HIV testing too. This is contrary to the common belief that women find it difficult to communicate the message to their male partners that it is necessary to have an HIV test and to adopt HIV risk reduction practices. Women could be dominating the HIV testing decision-making based on their prior knowledge of their previous, and/or current high risk behaviours.

Condom use reports at the last sexual encounter were significantly different between men and women, with higher reports among women. Again, this raises the question as to whether women are over-reporting risk reduction for the sake of social desirability. When males were asked whether they perceived themselves to be at risk of HIV infection, they indicated that this was indeed the case. Overall, the biggest reason, among both men and women and reported by over 40% of participants, for considering themselves to be at risk of HIV infection, was the non-use of condoms. This raises the question as to why, if both men and women knew the protective effect of condoms, condom use was so very low. A systematic review has been done in this regard in SSA and Asia, namely on the impact of HIV prevention knowledge and interventions in respect of condom use

(Foss et al., 2007). Some of the results indicate that interventions targeted at sex workers result in greater increases in condom use, less so in casual partnerships and even less so in primary partnerships, unless they are serodiscordant. Gender also determines this post intervention uptake, with greater use post intervention among men than women. However, similar studies were found to be difficult to review because of a lack of standardised tools to collect condom use data.

For those participants in this study who did not consider themselves at risk of HIV infection, the most common reason was that they did not have multiple partners (69%). While this is a reasonable response, it raises the question as to whether people are aware that a monogamous relationship where neither partner knows their own or their partner's HIV status might not in fact protect them in the case of HIV serodiscordance. Perceived risk of infection of self or of partner has been studied in previous studies (Anglewicz et al., 2008). This has a great impact on risk reduction uptake, as a low perceived risk of self or of partner creates a false sense of security, and therefore partners see no need for condom use.

The results also indicate that there was a high prevalence of cohabitation in the absence of formal marriage in many of the couples. In addition, high levels of concurrent partners were reported.

A summary of the study population characteristics indicates that this is a high risk population in respect of both HIV transmission and acquisition. The major difference between this population and the general population of Guguletu was that a high proportion of people had previously tested for HIV. The generalisability of these results to the general Guguletu population and beyond will be discussed in the section dealing with the limitations of this study (namely Section 5.13).

5.3 Discussion of the socio-behavioural risk factors for HIV infection

The couples who attended CHCT were analysed to determine the socio-behavioural risk factors for HIV infection in individuals and couples.

5.3.1 Socio-behavioural risk factors in individuals

Many studies have been done on the subject of determining the risk factors for HIV serostatus in individuals (Auvert et al., 2001; Johnson & Way, 2006; Smith et al., 1999). These factors can be classified into two broad categories, namely socio-behavioural versus biological factors. The focus of this study was on self-reported socio-behavioural characteristics. Surprisingly, some of the risk factors that have been reported in previous studies do not necessarily appear to be significantly correlated with HIV infection in this specific study population. These are factors such as education level, alcohol consumption, and sexual characteristics (age at sexual debut, concurrency), among others. This does not necessarily mean that they have been reported inaccurately in the other studies, but it does imply that, in this particular context, there might be no meaningful variation between HIV positive and HIV negative people in terms of these variables.

This study showed that HIV positive individuals, unlike HIV negative individuals, were poor, resided in informal settlements, were unemployed and lived with their sexual partner. There was no difference in their educational levels or their mean age. Other differences obtained in the unadjusted analysis were that more HIV positive than HIV negative people reported a history of genital ulcers and genital discharge. There were no differences between HIV positive and HIV negative people in terms of the age at sexual debut, total lifetime partners, total current partners, transactional sex, hazardous drinking status and the use of condoms. In logistic regression analysis, four significant variables that are correlations of HIV status in individuals were found. The protective risk factors were male gender and having had a previous HIV test. The non-protective factors were living together with their sexual partner and condom use at the last sexual encounter.

The finding that men are at lower risk of being infected with HIV than women can be explained in terms of both the increased risk in women due to biological factors, and also the greater susceptibility of women, based on social factors, such as poverty, economic dependence and lack of ability to negotiate safer sex, as has been documented in previous studies (Chatterji et al., 2005; Day, 2009; Mnyika et al., 1996). Another point of consideration that might explain this difference in the current study is the methodology used. As described below with regard to the limitations of the study (see Section 5.13), the sampling of the study population for this study was not simple random sampling. Instead, couples were enrolled who had willingly volunteered to participate in the study. These included a higher proportion of women who had previously tested for HIV. Because of difficulties in disclosing HIV status information, more HIV positive women might have attended the CHCT with the motive of disclosing their HIV positive status to their partners, as some in fact noted in the qualitative interviews; this might be why there was a higher proportion of HIV positive females, and why it seemed that being male was a protective factor in this study.

Having undergone a previous HIV test appears to be a protective factor against being infected with HIV. It is important to note in this regard that the HIV test comes as a package that also includes a comprehensive counselling component. This counselling includes information on HIV and STI risk reduction. Therefore, the history of previously testing for HIV might mean that individuals were more motivated to adopt risk reduction measures in their relationships, thus lowering their risk of acquiring HIV. In addition, theoretically, previous testers could be more health-conscious individuals who thus also happen to be at lower risk. However, this assumption was not substantiated by the thesis results, which showed no difference in the key aspects of sexual behaviour (such as number of current sexual partners, sex under the influence of alcohol) of individuals who had tested before, compared to those who had never tested for HIV before. The differences that were obtained suggested that individuals who had previously tested for HIV were more likely to know an HIV positive person and to know about ARVs, and more likely to report that they discussed STIs with their current partners; they were also richer and less likely to be hazardous drinkers. Although significantly more previous testers reported that they had used condoms with

their current partner (64% versus 51%, $p < 0.01$), there was no significant difference in the proportion of those who reported using condoms during the last sexual encounter between those who had tested for HIV before and those who had not. Previous studies have also tested the hypothesis whether repeat testing is a sign of high risk behaviour or a mode of risk reduction uptake (Leaity et al., 2000; Phillips et al., 1995). Results are not conclusive due to lack of consensus: Leaity et al. (2000) found that there were no differences in the frequency of unprotected sex in repeat testers compared to those who were testing for the first time (the only exception was in the gay men where repeat testers were higher risk takers); Phillips et al. (1995) observed that bisexual and gay men with higher risk were likely to be repeat testers. Other studies have also shown lack of consensus between different researchers. If repeat testing happens on a large scale due to people confirming their status after every high risk sexual encounter, it could offset the cost effectiveness of VCT or CHCT because these processes are labour intensive. Therefore, encouragement to do a repeat HIV testing must be given to community members under certain indications but not as a habitual way of risk reduction. As indicated in the Results chapter, it is attention grabbing that 68% of individuals who tested HIV positive reported being HIV negative at their previous HIV test. Though the date of the previous test is not given, one would think that the HIV testing package that often includes comprehensive risk reduction counselling would be effective in resulting in behaviour change in those who have tested. This contributes to the above argument of whether habitual HIV testers are high risk takers.

The results indicate that people living together with their sexual partners were more likely to be HIV positive. This is explored further in Section 5.3.2.

Lastly, and paradoxically, it was found that condom use at last sexual encounter was associated with being infected with HIV. Again, this could be explained by the inherent limitation of cross-sectional studies in that temporality cannot be established by this study design. One possible reason for this finding is that individuals who used condoms at the last sexual encounter probably did so because they were already aware of their HIV positive status or of having engaged in high risk sexual behaviour. This would imply that their condom use at

last sexual encounter had been influenced by knowledge of their HIV status. In this way, this finding could wrongly classify condom use at last sexual encounter as a non-protective factor. When asking about condom use, there is scarce literature that describes what proportion of people are actually using either the male or the female condom correctly and consistently. This is an important consideration because condom use is frequently documented without further evaluation of the correctness and consistency of such use.

For future studies where risk assessment hinges on condom use behaviour, it is suggested that, in addition to asking whether condoms were used at the last sexual encounter, additional questions be asked to assess the integrity of the condom that was used, as well as the correctness of its use. It is also important to understand the dynamics of initiating condom use in couples. A qualitative study was done by Williamson et al. (2006) among 39 couples who reported that they had consistently used condoms for the past three months while they were part of a clinical trial, to understand how they negotiated the condom use and what factors affected their decision to use condoms. Key to successful condom use was agreement between partners and high levels of communication. In most cases, it was the female partner who suggested condom use; negotiation skills, persistence, refusal to have sex, motivation for the prevention of pregnancy were some of the techniques they used (Williamson et al., 2006). The response of the male partner varied from immediate agreement to resistance followed by acceptance. Comfort levels and perspectives improved with time. This highlights the importance of partner communication if risk reduction is to be effective. In this PhD study, about 65% of all respondents reported that they did communicate about STIs and that they had discussed STI risk reduction with their partner in the past; however, the low percentage of partners who had ever used condoms (57%) indicates that this communication did not necessarily translate into the uptake of risk reduction measures.

5.3.2 Couple characteristic assessment

The analysis assessed whether the results indicated any differences between the three categories of couples and what the possible reasons for these differences might be. The novelty of these data is that, within the South African context, few

studies have done research on couples with regard to the assessment of couple socio-behavioural characteristics in HIV prevention.

From a comparison of the couples, stratified by HIV status, it emerged that two-thirds were concordant HIV negative, 23% were serodiscordant, and 18% were concordant HIV positive.

The findings of the multivariate analysis, using HIV concordant negative couples as the reference group, revealed that HIV concordant positive couples were more likely to have a greater age difference, to be living together, to be both unemployed and less likely to have had a previous HIV test. Conversely, as compared to HIV concordant negative couples, HIV serodiscordant couples were more likely to have used a condom at the last sexual encounter, to have more total sex partners in the past year and less likely to have tested for HIV before.

For sexual partners, not living together poses the problem of risky sexual behaviour while partners are apart from each other (Vissers et al., 2008). However, this PhD thesis has shown a contrary result. Intuitively, one would expect that individuals who live together with their sexual partner would be at reduced risk of having extra-marital or additional partnerships. In addition, mobility, or movement from one place to another, has also been shown to be associated with high risk behaviour, both in the mobile partner and in the one who stays behind; this emerged from a study in Tanzania (Kishamawe et al., 2006). Kishamawe et al. (2006) concluded that both partners - the one moving away and the one staying behind – showed more sexual risk behaviour and had a higher risk of HIV infection. From these previous studies, it appears that living together is a protective factor. This finding was not shared by the current study, which found that living together does not protect members of a couple against HIV infection. There are a few possible explanations for this finding.

Firstly, the definition of living together was loosely applied in the questionnaire: It was based on couples self-reporting that they live together. No questions were asked to ascertain where there might have been interruptions, where one partner had been away. It was also not asked whether such absences could have

resulted in risky behaviour, even when partners were apart for short periods. Secondly, the high prevalence of concurrency in this population could imply that the fact that partners live together does not necessarily translate into the absence of risky sexual behaviour with concurrent partners. Thirdly, there may also be a greater frequency of exposure to HIV via sexual activity in partners living together. However, this reason has not been supported by data from the sexual behaviour characteristics, which indicates that there were no differences between couples who lived together and those who did not, with regard to the frequency of sex and other sexual characteristics variables. Again, the methodological limitation of cross-sectional studies means that this result is too complicated to interpret, as the temporal sequence is not clear, that is, it does not indicate whether partners were living together before or after HIV infection.

Notably, in over 70% of serodiscordant couples, the female partner was the HIV infected partner. A lack of risk reduction measures in these HIV serodiscordant couples would result in the female partners transmitting the infection to their male partners. In their study, Lurie et al. (2003) also showed that the HIV transmission within migrant couples was from either the men or the women they left behind. This would highlight the active role of women in the HIV transmission dynamics in the HIV epidemic. Some studies have critically evaluated the view that women are the passive and naive recipients of HIV infection from their male partners, which has led to an emphasis on how to prevent female acquisition of HIV. While this is commendable, it appears to be inadequate. This study and other studies have indicated that HIV transmission needs to be viewed in terms of the concept that addressing women's role in the epidemic needs to focus not only on preventing women acquiring HIV but also on preventing women transmitting HIV, as is the case in serodiscordant relationships with HIV positive females. Desgrées-du-Loû and Orne-Gliemann (2008) in their review of CHCT and HIV serodiscordance in heterosexual couples in SSA, also made the point that many studies have found an equal distribution of HIV positive men and women among serodiscordant relationships, suggesting that it is incorrect to assume that men are always responsible for transmitting HIV infection to women. There has been an assumption that the predominant direction of HIV transmission in heterosexual partnerships is that of men transmitting to women. This assumption could be

inaccurate as is shown by the equal and even slightly more HIV positive women in HIV sero-discordant partnerships in this study and other studies in other settings.

In respect of this particular study population in Guguletu, there are possible explanations for the finding that over 70% of HIV positive individuals are women in serodiscordant couples. As described in Section 5.13, which deals with the limitations of this study, the study population consisted of couples who self-selected to join the research study. This could have led to selection bias with a predominance of HIV positive women reporting to the research clinic. This could therefore be an invalid finding. The baseline participant characteristics indicated that the HIV prevalence among the men in this study population was 24%, as compared to 35% among the women. This could be a true population difference. Current HIV prevalence estimates in many settings are based on antenatal prevalence data. This uses the prevalence obtained in pregnant women as a proxy for prevalence in men. The results obtained in respect of the HIV serodiscordant couples in this study indicates that the ideal true characterisation of the HIV epidemic in the adult population would require accurate measures of male and female prevalence separately, as well as, if feasible, measuring couple HIV status and the characterisation of the distribution of HIV positivity in the HIV serodiscordant population. In this way, appropriate risk reduction messages can be disseminated. Risk reduction messages, the most important of which is the need to use condoms, are not necessarily going to differ, based on whether it is the female or the male who is infected: in either case, condom use is still encouraged. What differs, however, is that males can also be classified as vulnerable populations in cases of predominantly HIV positive females in HIV serodiscordant partnerships.

Being unemployed was a significant predictor for being in a concordant positive relationship. Employment status, similar to educational level, is an indicator of socio-economic status. The relationship between HIV and socio-economic status has been studied in a number of studies, particularly as it relates to women. A systematic review of some of these studies done in Eastern, Southern and Central Africa indicated that this link is not clear-cut because of many

confounders and also because in some cases increasing resources for women did not necessarily result in changes in high risk behaviour (Wojcicki, 2005). Even though poverty has been found to be one of the factors associated with being HIV positive in both individuals and couples, it is not possible to conclude from the information obtained in this study, that this is a straightforward causal relationship. This is because the mechanism by which poverty would lead to HIV infection was not explored in this study.

5.3.3 Individual risk factors compared to couple risk factors

The analysis of the correlations of HIV status in individuals and in couples indicates that there is some overlap between individual risk factors and couple risk factors. For example, living together, using condoms at the last sexual encounter and previous HIV testing, which applied to individuals, all appear again as determinants in couples. The results from the multivariate analysis indicate that a smaller age difference between partners in a partnership seems to be protective. It is possible that, when partners are almost the same age, they are most likely to have reduced power dynamics within the relationship and that they are probably better able to discuss and negotiate risk reduction measures. In the analysis of individual data, the age variable was not a significant risk factor for HIV infection; the median age was similar for both HIV positive and HIV negative individuals.

Knowing about couple risk factors for HIV adds to the study and interpretation of individual risk factors in that more critical analysis would need to be applied to individual level data. For example, instead of assuming that one is young and therefore more or less likely to be infected with HIV, it must be borne in mind that the individual person might not fit into a defined risk profile, but, in the context of a partnership their risk is much more increased (e.g. if they have a much older partner).

5.4 CHCT uptake

As noted earlier, most heterosexual HIV transmission occurs in married or cohabitating couples (Dunkle et al., 2008). This, therefore strongly underscores

the importance of targeting couples in HIV prevention efforts. Given this background and the value of CHCT that has been noted in previous studies, it is important to evaluate the couples' motivating factors for attending CHCT and couples' experiences of initiating the discussion around attending CHCT.

Promotion of CHCT or HIV testing in general should take note of contextual factors that influence uptake. The results indicate that contextual factors have a strong influence on what motivates couples to test for HIV. In this study, contextual factors were defined as the thoughts of the couple's immediate family, their significant others and the community as a whole about HIV and, more specifically, about HIV testing.

Broad social and contextual factors, such as the level of stigmatisation associated with an HIV positive diagnosis, and the perceived behaviours that lead to HIV infection, are the major deterrent factors mentioned by the respondents. These have been widely documented in previous studies in various communities (Matovu & Makumbi, 2007; Meiberg et al., 2008). One of the contextual factors deterrent to HIV testing reported by some respondents in the qualitative interview was the community members' assumption that HIV prevalence is very high in their community; therefore, they conclude that there is no need to attend VCT or CHCT, as it is highly probable that they are already HIV positive. Previous studies have noted how partners assume that their status is similar to that of an HIV tested sexual partner, a concept that has been defined as 'testing by proxy' (Morrill & Noland, 2006). Such an assumption is incorrect and potentially problematic, particularly in serodiscordant partnerships. The concept that HIV positivity is assumed, based on the high prevalence of HIV in the community, is adding a new and wider dimension to the phenomenon of testing by proxy. However, it is based on an incorrect assumption and it is very damaging to any attempt to increase VCT or CHCT uptake in the community.

The results indicate that many negative contextual factors are discouraging community members from testing for HIV. Promotion of CHCT or HIV testing in general should take note of such negative contextual factors and, if feasible, it should start by changing the community's perceptions about HIV to make HIV

less stigmatised. In addition, a balance will need to be struck between letting communities know that there is a high prevalence and hence a high burden of HIV infection within an area, and emphasising that this does not imply that *all* the inhabitants of such communities are HIV infected, and that prevention of new infections is thus still possible and very important.

The predominant positive motivational factor for HIV testing in the community mentioned by study respondents is the knowledge that HIV positive people can receive ART and thus improve their health, even leading normal lives. This finding highlights the need to modify the message disseminated to the community by encouraging people to test for HIV and emphasising that HIV positive people can receive the care and support they need to lead healthy lives. This would most likely reduce the death sentence mentality, which was, and is still, associated with an HIV positive diagnosis.

Some previous studies have also sought to explore this topic of factors that influence VCT uptake. One such study was completed by MacPhail et al. (2009), and it involved the analysis of data from a national representative survey of 15-24 year olds in 2003 to determine the predictors of VCT uptake among the youth in SA. It was found that 25% of respondents said they had attended VCT, and that more of these were females. Females who had attended VCT were more likely to have been pregnant before, to have talked about HIV and to reside in urban areas. Among the men, being HIV positive, knowing people who had died of AIDS and having a high school education were the predictors. In their discussion, MacPhail et al. (2009) further indicated that males in their study samples only seemed to be motivated to have an HIV test once they had developed symptoms of suspected HIV infection. This finding was not obtained in the Guguletu community. Instead, this PhD study noted that in both men and women in the qualitative interviews, the knowledge that if a person tests HIV positive they can get access to ART was the predominant motivation.

Although the couple is perceived as a unit, the factors that motivate them to attend HIV testing differ for each individual member of the couple; there also seems to be limited communication between members of the couple. This fact,

while insignificant in terms of CHCT attendance numbers, is essential to understand, as it affects the outcome of the CHCT process, especially if the resultant HIV test results are thought to confirm suspected infidelity.

Both men and women indicated that they found it very difficult to invite or persuade partners to attend CHCT. One of the most common ways of doing so was to disclose their own HIV status to their partner if they had been tested before, or to disclose the HIV status of former partners, or of other community members whom they knew. While talking about HIV infection in self or in other people is good and highly recommended, it also means that, as couples approach the CHCT process, they are already prejudiced and fearful that they might be HIV positive, given that their partners or the people they know are HIV positive. This communication difficulty suggests that the promotion of CHCT might not necessarily increase uptake of CHCT by the intended recipients; instead, it is necessary to foster intra-couple communication to facilitate CHCT uptake. This highlights the need for communication aids to encourage one or both partners to consider CHCT and to elicit a favourable response in the partner who is invited. One might argue that such communication aids cannot be universal, as there are many socio-cultural and gender issues to consider in a particular setting. This is a valid argument and therefore promotion of CHCT within a specific context needs to take into account the socio-cultural and gender subtleties in the development and recommendation of such communication aids. Programmes aiming to reduce heterosexual HIV risk in couples (e.g. CHCT) must inherently incorporate effective interpersonal communication skills.

Communication about HIV in couples has also been noted to be challenging in a couple-oriented post-test HIV counselling acceptability study by Orne-Gliemann et al., (2010). In this study, the authors note that: "When couple dialogue on HIV was reported, it usually took place after watching an advertisement on television or hearing from someone newly infected with HIV. And these discussions would stay general, indirect and very scanty." (page7).

On the same topic of couple communication, Desgrées-du-Loû et al. (2009) did a study in Côte d'Ivoire in which they compared the proportion of women who

communicated with their regular sexual partners on sexual risk before and after prenatal HIV testing. Desgrées-du-Loû et al. (2009) argue that, in contexts where HIV testing is not widespread, prenatal counselling and HIV testing “puts women at the *entry point* of conjugal awareness of HIV” (page 893). The authors used a global indicator of communication based on 3 factors to assess couple communication. These indicators were:

- *COMPLETE* - female partner discussed STIs, notified partner of HIV test results and suggested that he too gets tested;
- *PARTIAL* - one or two of the above
- *NON-EXISTENT* - no issues raised with partner.

In Desgrées-du-Loû et al.'s (2009) study HIV negative women had greater levels of communication with their partners post prenatal HIV counselling and testing. Of the HIV positive women, 43% had HIV status disclosure. 72% suggested their partner should have themselves tested. Partial or complete communication with partners about HIV and STIs resulted in more condom use. Thus, the authors describe that the PMTCT process might lead to a reduction of both vertical and horizontal HIV transmission if the process facilitates couple dialogue.

The difficulty of couple communication has been especially documented in studies on HIV status disclosure. King et al. (2008) conducted a study in Eastern Uganda to describe the health and social predictors of HIV status disclosure and the experiences and outcomes related to disclosure in HIV positive men and women. 69% had disclosed their HIV status to their most recent sexual partner. The authors describe three methods of disclosure namely: Direct (direct face-to-face conversation with partner), indirect (disclosure in a roundabout way) and assisted (assistance from third parties). Direct disclosure was reported by 55%, indirect by 27% and assisted by 18% of the participants. In King et al.'s (2008) study, however, some study respondents indicated that there is a community assumption that the one who discloses their HIV status first is the one was infected first. Therefore, this community myth/assumption further stifles the process of HIV status disclosure and strengthens the argument for the benefit of CHCT.

Of the studies involving couples that have been done in Africa, not many describe in detail how participants had actually been recruited and enrolled. Chomba et al. (2008) in their study describe how they used peer recruitment involving door-to-door invitations to recruit couples as participants of their study. They had found that previous strategies, such as radio announcements and advertisements in the newspapers, had not yielded a good response. However, as would be expected, they also noted that this peer recruitment method was expensive and that, when it was stopped in this setting, couple VCT attendance decreased by 90%; this was not because of intervention saturation in the target population, but it was attributed to inefficient recruitment by the other methods that are not door-to-door recruitment. As explained in the methods section of this thesis, an intensive recruitment strategy was used to encourage couples to come for CHCT involving various strategies such as peer recruiters, among others. Cost-effectiveness is an important consideration in the implementation of any public health measure, and questions might arise as to whether, given the intensity needed to recruit couples, CHCT would be a cost-effective strategy to implement. This thesis did not seek to answer this question, but it might be important for future research.

Another similar study of interest regarding couple enrolment and follow-up was done by Kempf et al. (2008) in Zambia; its objective was to identify factors that lead to non-enrolment and loss to follow-up among serodiscordant couples. Their longitudinal studies compared couples who had enrolled and returned for follow-up meetings with couples who did not return. Their results showed that serodiscordant couples in which the male was the HIV positive partner were more likely to enrol and to return for the follow-up interview. Other determinants were older men and women, those with a longer duration of partnership and those with more children. Although Kempf et al.'s (2008) study focused on the enrolment of serodiscordant couples, it does give some insight into the fact that enrolling a couple for any intervention, such as CHCT or a clinical trial, is complex because the collaborative effort between the partners is necessary. In this PhD study, members of the couple repeatedly indicated that the factor that they found to be the biggest hurdle to attending the CHCT process was that if one member of the couple was aware of the presence of CHCT and wanted to attend this process,

they needed to invite their sexual partner to the process. This act of inviting the partner was noted to be very challenging.

There are some interesting models of couple recruitment for CHCT described in the literature. For example, Allen et al. (2007) presented results from a study done in Rwanda and Zambia of recruiting couples for couples VCT using trained and influential people (Influence Network Agents – INAs) from the health care, religious, NGO and private sectors. They looked at what the predictors of successful invitation were. About 14% of the 9 900 total couples invited attended CHCT. The most successful was when INAs invited couples, rather than just individual couple members. According to the authors, reduced CHCT uptake was caused by: stigma, lack of time and no transport money. The INA model resulted in increased community awareness, whereas endorsement by respected community leaders increased uptake in Rwanda. This INA model of CHCT promotion described by Allen et al. (2007) is quite labour intensive, however, and thus might not be acceptable or appropriate in other settings.

5.5 CHCT process experience

In addition to asking couples what motivated them to test for HIV and how they initiated this discussion with their partners (as discussed above), they were asked both in the quantitative and qualitative studies, what their experiences of the CHCT process had been. The couples mentioned that they liked the assurance that the test results would be confidential, and that they appreciated receiving the information pertaining to HIV and STIs that was given during the session. Many individuals mentioned that their greatest fear was that their HIV status would become known in the community. Based on these reports, it appears that the assurance that the test results will remain confidential is central to the success of CHCT. This notion is supported by Angotti et al. (2009), who indicated in their study of rural Malawi that there are three C's which are key factors in improving VCT uptake in general and facilitate removal of the barrier to HIV testing. The three C's are HIV testing that is *convenient* and *confidential* and the *credibility* of the HIV test results. This finding from the PhD study about the high value placed

on assured HIV test result confidentiality is an important one to note, particularly with regard to the messages that are used to promote CHCT.

A number of respondents in this study also mentioned that their initial fear about HIV testing had been assuaged when they heard the personal stories of individuals and couples who had tested for HIV; they realised that HIV positive individuals could still lead normal lives despite being HIV positive. This further highlights the importance of assuring HIV positive individuals that referral places for ART care and support are available.

The results also draw attention to the fact that the CHCT process involves counselling couples whose individual members are highly burdened with various emotions, especially fear of their HIV status and the impact this will have on their intimate relationship. This is different to individual VCT, where an individual tends to have only one fear, namely his or her HIV status, while he/she still has control over other aspects of his/her life such as relationship status and outcome, as he/she has a choice to disclose the HIV status or not. With CHCT, however, the fear is trebled:

1. What is the individual's HIV status?
 - As in individual VCT, the individual is still anxious about the resultant HIV status.
2. What would be the partner's HIV status?
 - Not only is the individual's HIV status important, but the sexual partner's HIV status is important too.
3. How would the outcome affect the relationship?
 - Just as much as the individual reacts to his/her HIV test results, the couple also responds to their couple status in various ways.

The study results show that there was a marked fear of HIV serodiscordant results. However, many individuals also indicated that what prompted them to test for HIV was the knowledge that individuals in a sexual partnership could be HIV serodiscordant. Therefore, it appears that knowledge of HIV serodiscordance is both a motivating factor to test for HIV as well as a deterrent factor, in the

sense that it instils fear in couples. This is interesting, as it means that it is important to achieve a balance between highlighting the presence of HIV serodiscordance and the high prevalence of HIV serodiscordance in the promotion of CHCT, and instilling fear in individuals to such an extent that they are dissuaded from CHCT because they fear HIV serodiscordance.

Understanding what HIV serodiscordance is, and what it means is not easy for the lay person. It is, however, an important concept to understand, both on the part of the public but also more importantly in the context of CHCT. This is because the lack of understanding of the presence of and the reasons for HIV serodiscordance is thought to be the main cause of the lack of risk reduction uptake, especially with regular partners (Desgrées-du-Loû and Orne-Gliemann, 2008). This PhD study did not explore the couples' understanding of HIV serodiscordance any further.

In addition to risk reduction uptake and improved communication after finding out one's HIV status, participants who attended the follow-up meetings reported that improvement had occurred in other areas of their lives, such as cessation of smoking and cessation or reduction of alcohol consumption. The improvements that result from the CHCT process emphasize the fact that, although the focus of CHCT is on HIV counselling and testing, this cannot be isolated from other facets of couples' lives, such as social behaviours, like alcohol consumption, especially for communities like this PhD study population where the results from the demographics indicate high levels of hazardous drinking. Other facets of people's lives, such as family expectations, fertility intentions and other areas that directly affect risk reduction uptake, are important considerations too, and might be raised during the counselling process. This places undue pressure on CHCT counsellors who are mainly trained in HIV pre- and post-test counselling only and not how to deal with other marital counselling issues. For increased effectiveness of the CHCT process, it is important to consider how other social issues that might arise during the counselling process should be managed. This could include training CHCT counsellors in other counselling skills in addition to couple HIV pre- and post-test counselling and, alternatively, ensuring functional referral networks from the CHCT clinic to the other relevant social services.

Many respondents indicated that they had previously gone for HIV testing as individuals but that they could not disclose their HIV status to their partners and therefore attended CHCT with the motive of being able to disclose their HIV status to their partner in a safe environment in the presence of a trained counsellor. Others indicated that they had disclosed their HIV status to their partner and that they had attended the CHCT session with the motive of ascertaining their partner's status; this was highly influenced by their knowledge about the existence of HIV serodiscordance. Again, the difficulty of disclosing one's HIV status to one's partner came through strongly in the interviews. The fact that respondents reported attending the VCT centres previously as individuals highlights the need for individual VCT to be promoted in parallel with CHCT and, if it is feasible, for counsellors to offer assistance with disclosing such HIV status within individual VCT settings.

One of the aims of the data analysis of this question was to ascertain how HIV serodiscordance had affected a couple's relationship. The individual members of the couple, when they were interviewed separately, indicated that their relationships had not broken down by the knowledge of HIV serodiscordance. In many of the cases, in fact, there was reaffirmation of love and commitment to each other. While this finding is positive, it cannot be generalised, because the couples who were requested to come for the in-depth interviews were those who were still together after undergoing HIV testing. It is therefore not possible to get an accurate quantification of the effect of HIV serodiscordance on relationship stability from this study's data. Many of these couples also reported that they had recently increased their condom use behaviour to prevent transmission of HIV to HIV negative partners. This is one of the intended effects of CHCT, which might actually be difficult to obtain by means of individual VCT.

Of note is that, because the couples interviewed in this study are those that attended CHCT, it is not possible to obtain an assessment of the general community acceptability of the CHCT process. There was no comparison group of couples who declined CHCT to compare with to reach a more accurate

assessment of the acceptability of CHCT within the community. This is one of the limitations of this study.

5.6 Lessons learnt and the future of CHCT

The above sections of the discussion focused on the characteristics of the couples, the determinants of an HIV positive status in individuals and couples, and the motivation, initiation and experiences of the CHCT process. The focus of the following discussion is on lessons that have been learnt about CHCT in this study and how they help to shape the future of CHCT application.

This study proposes that CHCT is a preferred intervention over individual VCT wherever it is feasible. This is because individual VCT assumes that individuals can change risky sexual behaviour independently, but in many situations, this is not the case.

This is further supported by Burton et al. (2008) who conducted a systematic review of six studies to ascertain whether couple-focused behavioural interventions reduced HIV transmission and risk behaviour. They showed that participation in a couple-focused intervention resulted in more HIV prevention behaviours. The presence of the male partner has also been linked to the success of PMTCT interventions, such as Nevirapine prophylaxis and adherence to infant feeding practices (Msuya et al., 2008). Because of this, it has been recommended to offer CHCT at antenatal care (ANC) clinics, which are predominantly frequented by women only (Mlay et al., 2008). Additionally, Mlay et al. (2008) qualitatively explored the views of Tanzanian men, women and counsellors about the issues of involving men in VCT with their partners at the ANC. The participants in this qualitative study indicated that CHCT and male attendance at the ANC was important and beneficial, but that there is also a need for community sensitisation and for strategies to deal with HIV serodiscordant results.

A meta-analysis of 27 studies from 1985 to 1997 was done by Weinhardt et al. (1999); it looked at the behavioural data before and after HIV counselling and

testing of close to 20 000 participants, studying variables such as condom use, unprotected intercourse, number of sexual partners, HIV and STD incidence. The results showed that HIV positive participants and HIV serodiscordant couples increased their risk reduction uptake compared to HIV negative individuals. They concluded that HIV testing is a possible good secondary intervention in the reviewed studies. The finding of increased risk reduction uptake in serodiscordant couples further supports the promotion of CHCT. In this PhD study population, discordant couples reported increased risk reduction uptake in the qualitative interviews. However comparison of the reported condom use at the last sexual encounter indicated higher reported use at baseline compared to at the follow-up visit in the quantitative study. This difference could be explained by the differential participant retention rates with a higher proportion of HIV concordant negative couples who are not likely to be using condoms) returning for the follow up interview.

As noted earlier, counselling couples is a complex procedure, not only because two individuals are counselled together, but also because the underlying social norms and traditional gender roles may affect HIV risk reduction uptake. In this study population, the female respondents in the qualitative interviews did not indicate that the traditional roles played a major role in HIV risk reduction uptake; they were also not regarded as a hindrance. This could be because this population was peri-urban; different dynamics are likely when dealing with a rural or more traditional population group.

5.7 Other issues to be considered for CHCT

In addition to the couple recruitment challenges and the complexity of counselling couples, a query might arise about the about the ability of this study to answer questions such as:

1. Does CHCT have a future in HIV prevention?
2. Should CHCT be promoted?
3. What about evaluation of its effectiveness? In other words, is it cost-effective, and does it result in the intended effect?

To reply to the first question above, this study suggests that CHCT has a place in HIV prevention. Theoretically, it is an excellent intervention, which could result in the desired outcome of reducing HIV incidence. However, it is also a complex intervention because so many variables influence its uptake and effectiveness. It was found that the involvement of males is very beneficial in the uptake of various HIV risk reduction measures (e.g. PMTCT, condom use etc). CHCT promotion is thus essential (to answer the second question), as the process sees men as an integral part of the intervention structure rather than regarding their involvement as a non-compulsory option.

For any intervention that is implemented in the HIV prevention field, the ultimate aim is to interrupt the chain of transmission by preventing HIV transmission or acquisition. This could be done directly, by encouraging condom use, or it could happen indirectly, as in the case of CHCT. CHCT and VCT are indirect ways of reducing the transmission risk by facilitating risk reduction uptake. It is important to note, however, that this is not a simplistic and direct pathway. Many enabling and disabling factors can affect the efficiency and effectiveness of CHCT.

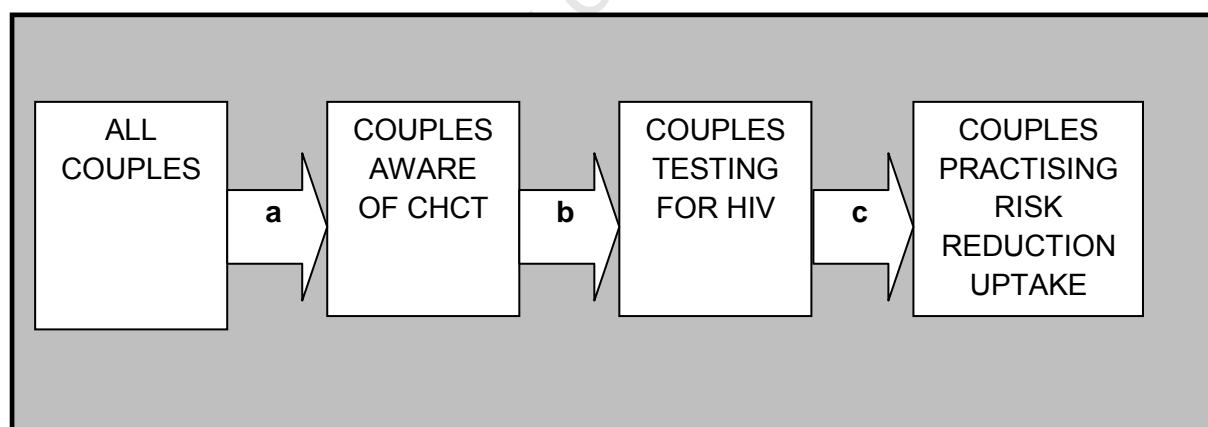


Figure 5-2: Impact of CHCT

The promotion of CHCT must be sensitive to what motivates couples to undergo the HIV test and what the enabling and disabling contextual factors are. The first critical step to guaranteeing the success of the CHCT process is to ensure that it is advertised by using methods that are effective and that appeal to both men and women (process 'a' in Figure 5.2). One of the most successful methods was that of members of the couple hearing about the existence of this service from other

couples who had attended CHCT, as well as from the experiences of HIV positive people, and the assurance that the test results would remain confidential.

Once couples know the beneficial effects of CHCT, the second aim is that a high proportion of the couples that become aware of the CHCT process actually go through this (process 'b' above). This proportion will be determined by the motivating factors for the couple as well as for the individual members of the couple. This step is also highly dependent on the partners' efficacy in communicating about the need to attend CHCT as well as inviting each other to go through it as discussed above.

The CHCT process itself involves the key components of pre-test counselling, HIV test and post-test counselling, including risk reduction counselling and referral for other services. The package is only successful if all the components are successfully implemented. During the pre-test counselling, there should be recognition of the various couples' needs, recognition of the fact that motivating factors to test might be widely different between male and female members of couples, and recognition that CHCT induces more anxiety than if individuals were to test separately. One of the overarching themes identified in the individual interviews was the fact that reassurance of confidentiality gave the couples the confidence that it was safe to attend this process.

The pathway from attending CHCT to reducing the incidence of HIV is not straightforward (process 'c' in Figure 5.2). Attending the CHCT process will not ultimately reduce HIV incidence unless other essential steps are taken. It is thus crucial to know what these essential aspects are and what factors either enable or disable the successful completion of these essential steps. One important aspect is risk reduction uptake, and this is rooted in communication within couples. The knowledge about HIV risk reduction, especially the use of condoms, is important, but it will not automatically translate into condom use, unless there is good communication between partners. The CHCT process must therefore equip couples by giving them the necessary information on risk reduction, but even more importantly, it must equip them with the communication skills to be able to operationalise condom use within their relationship. This complexity of

implementing effective behaviour change is reiterated by Yeatman (2007) who argues that behavioural change is not “simply switched on by HIV testing” (Yeatman, 2007:274).

Another critical aspect of the pathway involves addressing other needs that couples may have. These needs might not necessarily be directly limited to the CHCT process. Examples of such needs are fertility advice, and social and marital conflict resolutions. In HIV serodiscordant partnerships the focus is on risk reduction to prevent the HIV negative partner from becoming infected; but, there are also other factors to be considered, such as the social and emotional impact of having an HIV positive spouse. A study in rural Malawi by Floyd et al. (2008) indicated that the widows of HIV positive men had only a few household possessions. The mechanism for this poverty in cases of HIV serodiscordant and concordant positive relationships was noted to be a lack of productivity due to ill-health.

Although these social and emotional needs are not part of the CHCT process, they have a bearing on the success of CHCT, as they directly affect the required outcome measures of risk reduction uptake. If a couple’s needs are not met with regard to fertility intentions in the face of HIV serodiscordance or ongoing marital conflict, these problems will adversely affect the uptake of risk reduction measures.

Like any other public health intervention, the CHCT process must be evaluated too. This evaluation would focus on whether CHCT was likely to result in the required output and outcomes. Such an evaluation should not focus only on attendance numbers but also on risk reduction uptake and other outcomes.

5.8 Couple profiling

Most current VCT pre-test counselling protocols or guidelines include a section on individual risk assessment. In this section, it is explained how the individual is assessed for HIV infection risk by exploring factors, such as questions on transactional sex, use of condoms, and so forth. When conducting CHCT, couple

risk assessment is not an integral part of this process, as there is limited information on what constitutes a 'high risk' versus a 'low risk' couple. From the results of this study, however, it is possible to identify some risk factors that could be used to develop couple-based risk assessment profiles. These could be divided into demographic characteristics and socio-behavioural characteristics. The rationale of generating a couple risk profile is to ensure that the counselling can be tailor-made to the various couple profiles.

The first proposition is that each of the individual members of the couple has an individual risk profile based on individual risk factors (such as presence or absence of an STI, concurrent partners etc). It is also evident from the data in the study that some couple-level variables might need to be considered for couple risk assessment. Some of these variables are: partner age differences, alcohol consumption status of one or both partners, cohabitation status, marital status, couple fertility desires and lastly 'couple communication efficacy index'. It is important to note that the individual risk factors remain relevant; however, in the context of a partnership some couple characteristics might be amplified and thus become significant risk factors. The intention is not to dichotomise couples into 'high risk' versus 'low risk' groups, but to create tailor-made counselling as per these needs.

Finally, the need for a 'couple communication efficacy index' emerged from the study findings, generated by the fact that one of the overarching themes in this thesis is the subject of partner communication at many levels, namely:

- Communication regarding the need to attend CHCT
- Communication about fertility desires
- Communication regarding HIV risk reduction uptake

Many studies encourage couple communication on HIV/AIDS. Few studies have actually suggested the specific communication aids in this regard. Some important questions to be included as part of a communication assessment questionnaire in CHCT could be the following:

Do you ever talk about HIV/STI risk reduction/fertility desires? How frequently? How comfortable are you in talking about these issues? What do you talk about?

This list is not exhaustive, but it does indicate the nature of some of the questions that couples could be asked during counselling to establish the degree or level of the communication within the partnership, and if possible advise on ways in which this can be improved with the aim of raising the partners' self efficacy in negotiating risk reduction uptake.

In addition to the attention on the CHCT process, as discussed in the above sections, the following section focuses on the subject of fertility desires, as these two issues are directly linked.

5.9 Couple HIV status and fertility desires

Risk reduction, which is the intended outcome of CHCT, largely consists of condom use, which if used correctly and consistently, provides effective protection against HIV acquisition and transmission. Ironically, the correct and consistent use of condoms has a contraceptive effect, which, in couples who are planning to have children, is not intended.

Results show that a high value is placed on child bearing in this study population, as indicated in the qualitative interviews by the societal stigmatisation of childlessness.

The research on couples offered a unique opportunity to understand how fertility desires are affected by the couple's HIV status. The unique nature of this study was that the independent views of intimate partners were obtained on this topic. Unlike many previous studies, where the fertility desires of HIV positive individuals are assessed, or where hypothetical questions were posed to HIV negative people on how their fertility desires would change if they were found to be HIV infected, few studies have captured the unified view of a couple whose members know their HIV status and who have had time to discuss and think

about the implications of their HIV status, as was the case with the respondents in the qualitative interviews.

The findings of this study suggest that there is a high level of agreement among all the respondents regarding the community's attitude to childlessness. The interviews indicate that the community perceptions have a significant influence on fertility decisions. This is based on the way in which childless couples and childless men and women are treated in the community. It is worth noting that these individuals and couples live within a broader community in which fertility is highly valued and voluntary childlessness is uncommon (Van der Spuy, 2009). Social status and security are often established only with proof of fertility (Van der Spuy, 2009). In addition, studies done in SA by Dyer et al. (2005, 2008) have shown that infertile men and women in this population are highly distressed by this and specify various motivations for having children, indicating the value attached to the ability to have children within the community. Furthermore, the psychological distress of involuntary infertility particularly in women is well documented (Greil, 1997).

The results from the qualitative discussions indicated that childlessness is associated with high levels of community contempt and stigmatisation. Respondents indicated strong sentiments about the perceived lack of worth of childless individuals or couples. Respondents emphasised that the stigma related to childlessness applied to both individuals and couples, in the sense that, even if one of the partners had children from a previous relationship, the partner who did not have biological children would be despised. The pressures placed on childless HIV positive people could be even more unbearable given the fact that it has been documented that HIV infection results in reduced female fertility for various reasons, such as spontaneous abortion, menstrual dysfunction and weight loss (Fabiani et al., 2006).

Similar results in respect of the distress experienced by childless individuals have been obtained in other studies. An example is a qualitative study that was done by Dyer et al. (2004) among men in SA at a fertility clinic suffering from couple infertility. Most of the respondents indicated that involuntary childlessness

invoked in them a feeling of sadness and pain, and that it profoundly affected a man's identity in society. It also had negative effects on the relationship, and it could lead to divorce, interpartner violence and alcohol abuse, because of stigmatisation by the community.

With regard to the question of HIV positive people having children, the results show that community members in general are not in favour of HIV positive people having children. Known HIV positive people who choose to have children are even more stigmatised and ridiculed. The rationale for this includes the fact that being HIV positive is associated with being sick and potentially having a shorter life expectancy. This result is also similar to views expressed by 77% of the 843 women interviewed in Cape Town who indicated that they felt that HIV positive people should not have children (Myer et al., 2006).

There are various views from previous studies on the topic of fertility intentions in HIV positive people. Some have indicated that the perceived risk of having a child after the HIV diagnosis outweighed the benefits, and that personal bias and the negative impressions by the health care workers might be possible causes of further stigmatisation (Laher et al., 2009). Furthermore, it has been noted that for women, the factors that are associated with fertility intentions could be: age (younger), being in a stable relationship, and having fewer children (Cooper et al. 2009). Women have been noted to cite health reasons for not wanting children, whereas men cite having sufficient children and no financial means of supporting them (Cooper et al. 2009). A contrasting finding was that being in good overall health might be a determinant in men, but not in women (Chen et al., 2001). It has also been observed that HIV infection modifies but does not eliminate the fertility desires of HIV positive people (Cooper et al., 2007). Studies have also assessed whether access to ART has resulted in a change in fertility and fertility desires of HIV positive people (Maier et al., 2009; Myer et al., 2007).

As shown from the results of previous studies presented so far, many studies have been done on this topic in various settings. To consolidate this information, Nattabi et al. (2009) have done a systematic review of 29 studies on the fertility desires and fertility intentions of PLWHA for studies done between 1990 and 2008. They looked at the factors influencing fertility desires and intentions of

PLWHA. Factors such as younger age, male gender; number of living children, cultural importance of motherhood, benefits of ART and PMTCT well as subjective health (feeling healthy) were obtained. External expectations, husbands in some contexts, older female family members and community stigmatisation all played a role in shaping the final decision. Mitigating factors were reported as the health effects of future pregnancies, health workers' attitudes, community disapproval, previous child mortality due to HIV, and worry about orphan hood. The authors concluded that fertility decisions made by HIV infected individuals are shaped by numerous personal, interpersonal, health related, socio-economic and gendered factors.

Many respondents in this PhD study indicated that the community assumed that an HIV positive person would automatically have an HIV positive baby. Community members therefore felt that it was unfair to have children, given the assumed double negative consequences on the child, namely, being orphaned and being born with an incurable illness. This community mindset poses a great challenge for couples, in which one or both partners are HIV positive. This is because societal norms dictate that to be a respected member of the community one must be a parent; however, if one was HIV positive one should not have children. One way of countering this negative mindset is to increase community awareness of PMTCT programmes and also to reinforce the reproductive rights of all individuals regardless of HIV status.

London et al. (2008) discussed the public health and human rights aspects of fertility management in HIV positive people. They indicated that there is a danger of vague reproductive rights policies that are prone to health care worker interpretation and prejudices and coercion. They argue that the current situation, where reproductive decision making is supposed to be autonomous, has resulted in health care professionals' beliefs shaping policy and thus resulting in a lack of trust in the health sector. Public health and reproductive rights need to be viewed as synergistic and health care worker training might be necessary to achieve this.

In the qualitative interviews that formed part of this PhD study, most of the members of HIV concordant positive and HIV serodiscordant partnerships

indicated that the factor that they would regard as the most important in their plan to have a child would be economic status (that is the ability to support the child financially). They indicated that HIV status was not the main determinant, and many highlighted the fact that the higher financial implications of raising a child were the greatest deterrent factor. Many also expressed the hope and perception that health care workers would be able to assist them in their plan to have a child safely despite their HIV status. Some respondents likened HIV to other chronic illnesses, such as diabetes and hypertension, and said that if people with these conditions were able to have children, they could see no reason why HIV positive people could not have children too. It is possible that, if this were a widespread feeling, it would destigmatise HIV; however, there is also the risk that it could stall HIV prevention efforts, as community members become too complacent about HIV infection and less diligent about risk-reduction uptake.

The implications of these results on the content of the CHCT risk reduction counselling are that CHCT counsellors will need to communicate with couples about risk reduction uptake, also bearing in mind the couple's fertility plans. The confidence placed by many in their health care providers also indicates that couples should be informed about PMTCT programmes.

Recommendations that the dual needs of serodiscordant couples; that is pregnancy prevention and HIV prevention, be recognized have been made before. For example, Grabbe et al. (2009) examined the contraceptive knowledge, use and concerns among 1433 serodiscordant couples in urban Rwanda and Zambia. They noted that there was a high degree of knowledge (>40%) of at least one method of modern contraception, more so among women. Despite this high level of knowledge, use was low and this was attributed to social, cultural and economic factors. Delvaux and Nöstlinger (2007) also note that promoting dual method use is challenging in long term partnerships. HIV care and family planning, and PMTCT are currently not adequately integrated to meet the needs of HIV positive men, women and couples. They suggest the removal of the verticalisation of services and the provision of service integration in the long term (e.g. CHCT plus family planning plus ART services).

The results from this thesis thus highlight the fact that comprehensive fertility care for HIV positive individuals and couples is needed. This has been noted by Myer et al. (2007). The CHCT process would then link to this comprehensive care via functional referrals. (Functional referral networks refer to a referral system in which the referred patient/client is able to access the appropriate care or service in a timely and efficient way and is managed according to the presenting needs. This implies that the referral place must be accessible (in all facets e.g. physically accessible, financially accessible, culturally acceptable and well capacitated)). Again, this calls for the greater male involvement and promotion of male friendly environments, as there is currently a female bias in the promotion of family planning services in most African countries, as has been noted by Mbizvo and Basset (1996).

5.10 STI management

Communication between partners regarding STI/HIV risk reduction is one of the best predictors of the success of risk reduction uptake in general. In this study, 65% of the individual men and women indicated that they had discussed HIV/STI risk reduction with their sexual partner. In 47% of the couples, both members indicated that they had discussed HIV/STI risk reduction with their sexual partner, with no significant difference between the three groups of couples. This is in comparison to 24% of the couples who reported condom use at the last sexual encounter. This discrepancy might indicate that talking about risk reduction does not necessarily translate into risk reduction uptake in couples. The question in this regard thus needs to be broadened so that couples can be asked the following questions:

1. What was the intent and context of this communication?

This enquires about the motivating factors for couples to communicate about risk reduction. The motive and context (e.g. was it because of suspected infidelity or was it because of an STI, or other?) would influence the outcome of this discussion.

2. What is the frequency and content of this communication?

This question asks whether this discussion was a once-off event or whether it was ongoing, as this would also affect the outcome. Most importantly, what was the content of their communication and were any decisions made?

Therefore, these questions of whether partners had ever communicated about risk reduction uptake, which were asked in this study, give useful information, but are not broad enough to provide comprehensive information on this topic. The topic of partner communication behaviour is relevant and has become an overarching theme in this thesis, as the results indicate that all the preferred and expected outcomes of HIV prevention (such as condom use, STI management including partner notification, uptake of safe pregnancy option, accessing ART etc) depend on the efficacy of this couple communication process. This does not imply that individual autonomy is downplayed but, as mentioned earlier, the assumption that individuals can change risky sexual behaviour independently is probably flawed in intimate partnerships.

Another finding in this study was that individuals who had previously tested for HIV, who had previously received treatment for an STI, who were non-hazardous drinkers and who used condoms with their sexual partners were more likely to communicate about HIV/STI risk reduction uptake. This shows that individuals with characteristics that reflect general healthy behaviour tendencies recognised the need to communicate with their sexual partners about risk reduction uptake. This result is expected but is not easy to explore further because of the limitation of the cross-sectional nature of this study. It is not possible to conclude whether these prior experiences (e.g. HIV testing, STI treatment) had in fact prompted participants to discuss risk reduction with their partners in the first place.

The respondents were asked specifically about the management of their most recent STI. About 288 (98%) of the participants who reported recent STI symptoms had sought care for it, and about a third of these had sought care together with their sexual partner who was also concurrently treated in 85% of the cases. On further enquiry about the STI consultation session and their contact with the health care provider, regarding the other components of STI

management, of the 288 individuals who reported a recent STI and went to seek treatment for this, the following was found:

- Over 70% were informed that it would also be necessary to treat their sexual partners;
- Over 80% were informed about the need to use condoms;
- Over 80% were provided with condoms;
- The partner notification note was provided to 50% of the respondents.

A noteworthy observation is that all the other important components of STI management mentioned above are not being performed in 100% of cases (that is there are gaps in the appropriate STI management). The component that was implemented the least often (50%) was the provision of the partner notification information or note. The note was provided to about 50% of the respondents, and of these significantly more were males ($p=0.031$). Although 75% of the respondents indicated that they had been informed that their sexual partners would also need to receive medical treatment, only 50% were provided with the partner notification note. Of the 144 individuals who reported having been given the partner notification note by the health care provider, 132 (91%) gave the note to their sexual partners. 37% indicated that their partners were also treated, this was mostly the case for partners of the male index case. 81% of partners went to the same provider for treatment.

From this study, it was not possible to ascertain whether those who did not receive the partner notification note had in fact informed their partners about the need for STI treatment. Other studies on this topic have shown that people treated for STIs often find it difficult to communicate the need for treatment to their sexual partners for a variety of reasons (Matthews et al., 2002; Warszawski & Meyer, 2002). A population based survey indicated that most adults would notify the main partner, but not occasional partners. The survey also indicated that men were less likely to notify their partners than women were (Warszawski & Meyer, 2002). Some studies have attempted to obtain information from STI patients to help design the best partner notification models (Hennessy et al., 2002; Matthews et al., 2002).

The key to any of these partner notification models remains the ability to communicate. Partner notification can also be broadly viewed as an HIV/STI risk reduction activity, as it helps to prevent reinfection in the index case. It further lowers the probability of HIV transmission, as it has been documented in the literature that the presence of STIs increases the risk of HIV transmission and acquisition (Cohen, 2004; McClelland & Baeten, 2006; UNAIDS 2006).

Communication aids for effective partner notification are therefore recommended. Providing a partner notification note is one such aid. Although the stigma associated with infection with classic STIs is much lower than that associated with HIV infection, disclosure to partners of such conditions is still not easy. In both cases (STI infection and HIV infection), the role of couple-based HIV prevention interventions such as CHCT therefore needs to be broadened to cover issues, such as discussions on the role and importance of partner notification in STI management and HIV prevention.

5.11 CHCT, fertility desires and STI management

As discussed above there is a need to do couple risk profiling so as to tailor-make counselling messages during CHCT. One of the advantages of this profiling would be to deal more effectively with the topic of fertility desire in the face of HIV infection risk in couples. This thesis proposes that the preferred outcome of the CHCT process should be three-pronged:

1. Risk reduction uptake leading to a reduction in HIV and STI incidence
2. Discussions regarding safe pregnancy leading to prevention of vertical transmission
3. ART referral leading to early HIV treatment

In Figure 5.2 , the current focus in the evaluation of the effectiveness of CHCT is to compare the proportions of couples who had used risk reduction measures (most often measured by condom use) in their relationship, both before and after CHCT.

Based on the inextricable link between the topics of HIV/STI and fertility desires, comprehensive pregnancy risk behaviour (no condom and no contraception) and HIV/STI risk behaviour should be evaluated in the context of CHCT. This would extend the preferred outcome of CHCT to include couples at risk who are counselled on, and utilise safe reproductive options (see Figure 5-3). These options could involve enrolment into PMTCT programmes for pregnant women, and for serodiscordant couples it could include the recommendation of safer conception processes, such as sperm washing, where this is available (International Planned Parenthood Federation, 2005; Savasi et al., 2007) or the restriction of unprotected sex to the woman's fertile period. In addition, as shown in Figure 5.3, for concordant positive couples as well as for the HIV positive partner in a serodiscordant relationship, the next required step after ascertaining one's HIV status is the referral to the relevant ART provision centres. The question that has been raised on whether individual VCT increases ART uptake (Yeatman, 2007) is also relevant for CHCT.

This study population showed that men were more likely to want children in the future, regardless of their or their partner's HIV status. Similar findings were obtained in a study by Nakayiwa et al. (2006). They too noted that, although PMTCT interventions targeted women, men were likely to be the decision makers in this process. CHCT could therefore fill this gap by fostering discussions with both members of the couple.

Therefore, bringing together HIV and STI risk reduction counselling, as well reproductive counselling per couple profile would create a more comprehensive intervention package. It is worth noting that a balance needs to be achieved, so that CHCT does not overload couples with information that may not be applicable or relevant for their partnership, hence the importance of couple profiling. There are logistical and feasibility considerations, such as the balance between the time spent counselling the couple to provide them with all the information in the CHCT package versus the resultant counsellor workload, as well as the level of counsellor expertise needed to achieve this. This can however be managed on a context-by-context basis.

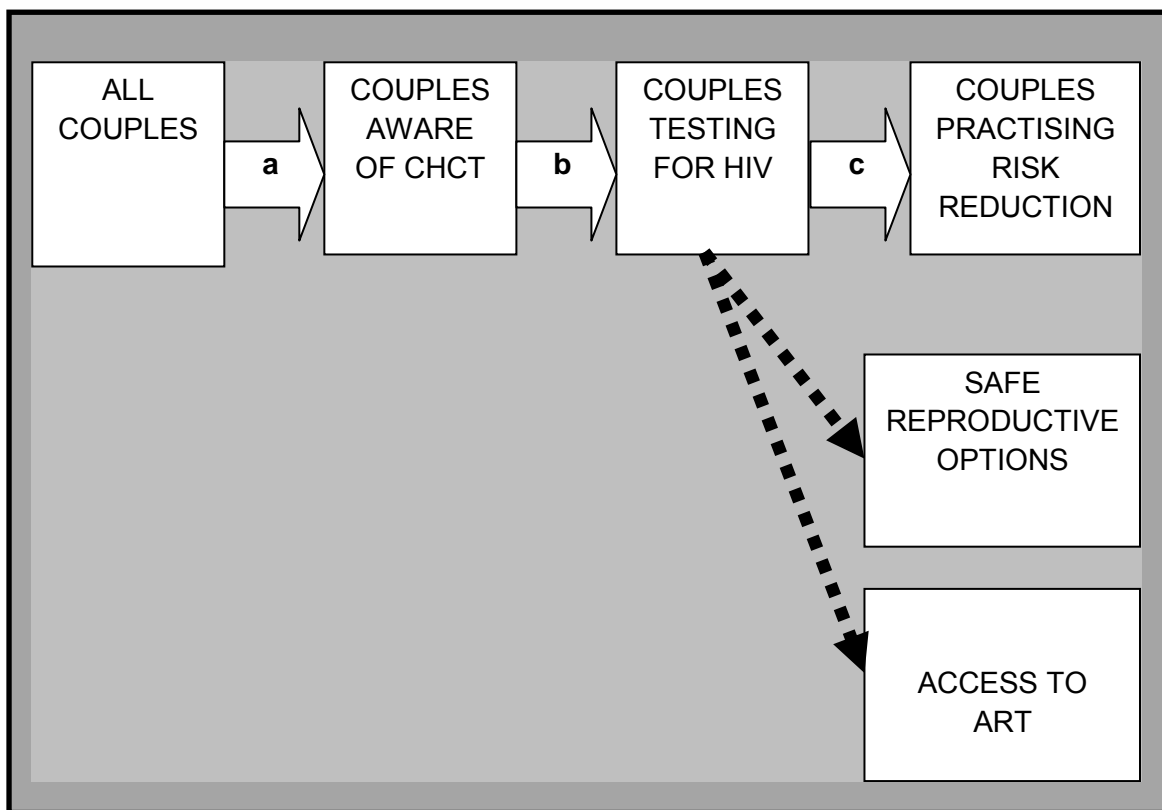


Figure 5-3: Impact of CHCT

5.12 Reliability of interpartner reports

It is important to obtain information on the interpartner reliability of responses to various questions. This is because many inferences in HIV research and the understanding of HIV transmission dynamics are based on self-reports. For example, calculation of the transmission efficiency of HIV (probability of transmission per contact) requires knowledge of the number of sexual encounters with or without a condom. Accurate information from self-reports is therefore required in order to obtain valid estimates.

Previous studies have been done to determine the interpartner reliability of various reports to the same questions (De Boer et al., 1998; Sison et al., 2004; Upchurch et al., 1991). The results from these studies indicated varying levels of interpartner agreement and this was mainly determined by the nature of the questions asked and the recency of the behaviour in question.

The results from this study show that different types of variables had different levels of agreement. The highest level of agreement was on 'neutral' 'non-sensitive' factual information, such as being married or living together. High levels of agreement were also obtained on variables that could be objectively verifiable, such as circumcision status. Low levels of agreement were obtained on important risk reduction behaviour (whether they had ever used condoms during past sexual encounters and whether they had used condoms during the most recent sexual encounter). The questions on communication behaviour of couples yielded the lowest level of agreement.

There are various possible explanations why couples give different responses. The first possible explanation for the lack of interpartner reliability is measurement error. This error would arise from the data collection technique in that perhaps the responses are different because the individual members of the couple were interviewed differently. However, because the interviewers are trained and retrained and because the questionnaires are piloted before being administered to the study participants, the lack of reliability is not attributed to the poor data collection techniques. If the factor of error in measurement is eliminated, and if it can be assumed that the differences are correct, it raises another question, namely, why partners report different things.

The first possible reason is recall bias. There might be different responses because one or both members of the couple do not remember whether they used condoms at the last sexual encounter or not. However, such challenges of recall do not explain why there are still interpartner variations on responses to factual questions, such as, whether the couple is married or living together. A possible explanation may be that male and female perceptions and understanding of the issues asked might be different. For example, males and females may have different definitions of being married or living together. A couple in which the male or the female partner cohabits at the partner's house for half of the month might have one member reporting that they live together and the other reporting that they do not. The same applies to marriage, where males and females may have a different definition, depending on whether it is a formal or traditional marriage. The third explanation could be that, because of social desirability,

either the males or the females might under-report or over-report certain behaviours, such as frequency of sex or condom use.

One factor that probably plays a critical part in obtaining reliable estimates from partners is the individual partner characteristics. The first such characteristic is concurrency. The demographic characteristics of this study population indicate that the median number of current partners for both males and females was 2. Overall 39% of males reported having one current sexual partner and 42% of females reported having one current sexual partner. This indicates that over 58% of the respondents had 2 or more current sexual partners. It is possible that this high level of concurrency could indicate that the partnerships are highly casual, with little or no commitment and little effort to know the other partner. Moreover, although every effort was made to ensure that the responses obtained are about the couple that came to test at the research centre and not about other concurrent partners, some of the respondents might have confused the characteristics of their different concurrent partnerships, thus resulting in low interpartner agreement. A comparison was done between the levels of agreement in couples in which either one or both partners were in concurrent partnerships, as compared to couples in which both partners were not in concurrent relationships. There were no significant differences in levels of agreement between the three groups. The questions on communication behaviour of couples yielded the lowest level of agreement for both those with concurrent partners and those who did not have concurrent partners.

Another factor that played a role in this population is the high alcohol consumption rate. The demographic characteristics indicate that over 50% (58%) of respondents were classified as hazardous drinkers using the AUDIT-C scoring system. There was a significant association between gender and positive AUDIT-C score, with 46% of women compared with 71% of males being AUDIT-C positive ($p < 0.01$). With regard to having sex while under the influence of alcohol, 22% of women reported this as compared to 43% of men. Alcohol consumption in this study population is clearly very high, which means that it was very likely to affect interpartner reliability. This is because alcohol is a mind-altering drug and could seriously affect recall of issues, such as condom use and, number of

sexual encounters, and whether communication took place or not. In the analysis, a comparison was done between the levels of agreement in couples in which either one or both partners were hazardous drinkers compared to couples in which both partners were not hazardous drinkers. Surprisingly, as with the concurrency question, there were no significant differences in levels of agreement between the three groups of couples. Again, the questions on communication behaviour of couples yielded the lowest level of agreement.

Studies with individual participants such as those in this study population have devised methods of improving the accuracy of reports. One method is to use coital and condom use diaries, whereby individual study participants are requested to diarise all their sexual encounters, and to indicate whether they had used condoms during these encounters. While this eliminates the recall bias, it does not eliminate the factor of social desirability: after all, study participants could falsify the information that they record by either under- or over-reporting, and thus casting themselves in a better light. Another method that has been used is audio computer assisted interviews (ACASI). In this method, the study participant gives responses on a computer screen that gives audio instructions. It is hoped that this method will eliminate the social desirability bias by creating an impersonal environment in which the participant is free to answer such personal questions honestly and without feeling embarrassed. A systematic review of 28 articles done by Langhaug et al. (2010) indicated that the ACASI method reduced reporting bias and raised the response rate of reporting sensitive behaviour. While this might lead to an improvement in data accuracy, the shortcoming is that the information reported comes from one individual member of the sexual partnership and that this information cannot be verified, as triangulation cannot be done.

The data from this study cannot be used to make a definitive deduction as to whether male or female members of couples tend to over- or under-report certain issues, or whether either males or females are more accurate reporters. This is because the true responses to each of the questions are not known. In order to eliminate this limitation for future studies, the design should incorporate a verification process, whereby both the male and female responses are verified,

after they have been obtained. The value of this couples study is that, unlike individual participant studies, verification can potentially be obtained from the partners. One way of achieving this verification/validation would be to bring the couple together after the separate interviews and then ask them to answer the same questions again together. The joint response could then be used as the 'truth' and the individual reports compared to this. This is theoretically easy to implement, but some practical and ethical implications may complicate its implementation.

There are other studies in other contexts that have been done on this topic. For example, in Upchurch et al.'s (1991) study of 71 couples in Baltimore; it was found that interpartner agreement was not affected by socio-economic status, age or marital status. Lagarde et al. (1995) assessed the reliability of self-reported sexual activities in rural Senegal. The results showed greater reliability in respect of recent sexual activities (over the past 7 days), than in respect of activities dating back four weeks

Further to the partner communication theme of this PhD study, the results indicated low levels of communication regarding HIV or STI risk reduction behaviour. It was also found that the partners themselves do not necessarily agree on whether they communicated about specific issues or not. This disagreement is independent of all the relevant couple level variables, such as whether couples are married, are living together or have hazardous alcohol consumption in either one or both partners. This finding reiterates that it is important to establish a 'couple communication efficacy index' to assess the level of couple communication with the aim of assisting them to be able to have further discussions beyond the CHCT session on issues relevant to HIV, STIs and fertility plans.

5.13 Limitations of the study

The study findings must be interpreted in light of the methodological limitations. The respondents in this study were self-defined couples who voluntarily attended the research clinic for CHCT, and hence the study may be subject to various

kinds of bias. The following were identified as some of the key limitations of the study.

5.13.1 Sampling bias

The study population was not randomly selected. Participants in this study were couples that volunteered to attend the clinic to receive CHCT. In addition, about half of the participants who attended the baseline study did not attend the follow-up quantitative study about a month after CHCT. The participants who returned for the follow-up interviews could have been systematically different to those who did not, thus biasing the results to indicate a more favourable post-CHCT assessment. Assessment of this potential source of bias shows that individuals who returned for the follow-up interview were significantly older than those who did not return, and that they were more likely to be living together with their partner and to be hazardous drinkers. There were no significant differences between these couples in all the other important variables, such as HIV status and sexual behaviours. Therefore, this source of bias, if present, is minimal.

The representative sample for this study would have been selected by simple random sampling or other random sampling method to avoid the biases associated with self-presentation of couples at the research clinic. However, a review of similar studies using couples as study participants indicate that these studies are rarely done by randomly sampling the couples from the study population of interest. Many have in fact used the method of recruiting couples by publicizing the research centre and the couple counselling services (Chomba et al., 2008). The use of the peer recruiters in this study also further biased the study sample, as participants would be more likely to recruit from their social networks, therefore reducing the inter-couple variation in demographic and other characteristics. If a comparison is done between the attendees of CHCT and the general Guguletu population demographics, major differences were that the research participants were of slightly lower socio-economic status (US\$80 compared to US\$147) with a higher frequency of having attended VCT before (8% community VCT uptake rate versus 48% previous HIV testers among study participants). Other characteristics, such as alcohol consumption and sexual

behaviours, are difficult to comment on due to a lack of comparable statistics of the general Guguletu population.

5.13.2 Generalisability

This self-selected population of participants may not be representative of the general population profiles of couples. This could affect the generalisability (external validity) of the results. The couples that attended the research clinic could be mainly couples who are very health conscious and who tend to take precautionary measures around their health and health care; they might be low risk participants with a habitual HIV testing habit. If this was the case, the risky sexual behaviours reported in this study could be under-represented. Conversely, the couples who attended the clinic could be high risk takers who were attending the clinic to find out what their HIV status is, based on their previous and current high risk behaviours. If this was the case, the risky sexual behaviours reported in this study could be over-represented. However, the HIV prevalence that was obtained in this study (30%) is similar to the antenatal prevalence (29%) that has been reported in the Guguletu population, suggesting a similar HIV risk profile.

In addition, the results show that 57% of individuals have tested for HIV before (much higher than the VCT uptake for that health district); this indicates that only a certain profile of couples joined the study, that is previous testers are overrepresented in this sample. As noted in the methods section on eligibility (namely Chapter 3), only couples in which both partners were 18 years or older were included in the study. The main categories of other partnerships that would have given a different perspective if they had been included are same-sex partnerships as well as adolescent and teenage partnerships.

The similar HIV prevalence between the study population and the Guguletu antenatal HIV population suggests a similarity in the risk profile of the participants; however, generalising to all other couples in this and other populations must be done cautiously, given the other differences noted above. However, despite all the possible sources of bias listed above, the results of this study still give valuable information about partnerships that can inform public health research and policy.

5.13.3 Information bias

Most of the information collected in the study was based on self-reporting of sexual and other practices. Participants might have failed to remember and provide accurate responses to some of the questions in the questionnaires. In addition, due to the sensitive nature of some questions, some participants refused to answer these. However, the response rate to most of the questions was 100%. The lowest response rate obtained was 92% on the question of how many new sexual partners a participant had had in the past year. Similar numbers of men and women answered this question, and it is not suspected that those who refused to answer the questions could have been systematically different from those who gave responses. In addition to the recall bias as well as the reluctance to discuss sexual matters, other sources of information bias arose from the following:

Couples were self defined (that is there was no prerequisite for them to have been in a relationship for greater than a certain amount of time). While this enables the different couple profiles to be included in the study, it poses the challenge of creating groups of couples, as some have been in the partnership with each other for only a few days or weeks, while others have been together for many years. Therefore, for questions such as couple fertility desires, which are dependent on a longer-term stable relationship, couples in more unstable partnerships could have provided less than accurate information because the topic was not relevant to them, given their circumstances. However, this data is still quite valuable for characterisation of the study population.

Social desirability bias could also be a source of information bias. In this, participants would tell the interviewer what they considered to be socially desirable answers, and this could bias the type of information collected. To overcome this, interviewers were trained to establish rapport with the participants before the interview began and to reassure participants of the importance of providing accurate information and the non-judgemental nature of the interviews.

Because of the high number of previous HIV testers, the evaluation of CHCT could have been affected by this: some people could already have experienced

the emotional effects of having an HIV test as an individual, and they would therefore not be able to give a clear picture of the emotions before, during and after the CHCT. This could also have resulted in a more favourable assessment of the CHCT process by the respondents. However, as the respondents in the qualitative interviews indicated, the process of CHCT could not be equated to the previous individual VCT sessions in terms of the emotional experiences of making the decision to test, the testing process itself and dealing with test results. This is because, although the CHCT process takes away the fear of disclosing one's HIV status to sexual partners, which is predominant in individual VCT, the CHCT process brings with it the additional fears of the partner's HIV status as well as the impact of the HIV results on the partnership. Therefore, despite the high prevalence of previous HIV tests in this population, the respondents' assessment of CHCT is fairly accurate and informative.

However, despite all the types of information bias listed above, the information in this study nonetheless clarifies some important couple-level variables that warrant focus in HIV prevention research. In future studies with couples, it is useful to have biological endpoints in the evaluation of CHCT (e.g. STIs, HIV seroconversion, pregnancy etc) to complement the interview data and to limit the bias introduced by self-reports.

5.13.4 Qualitative study limitations

One of the limitations of the qualitative interview data is that only couples in which the relationship was still intact were contacted and invited to participate in the qualitative study. The qualitative evaluation of the CHCT process is thus based on couples whose relationship was still intact after HIV testing. Although this gives a one-sided evaluation of the CHCT process, it is still valuable, as it is able to answer the question: "For those couples whose relationship is intact post the CHCT process, what was their experience of the CHCT session and how did CHCT influence their relationship?" The question that is not answered in this research is: "What is couples' experience of the CHCT process, and what is the effect of CHCT on relationship status?" Since only couples who were still together were interviewed, the question of relationship stability post-CHCT cannot be assessed in this study. Hearing the views of those couples whose relationships

had split post CHCT would be extremely useful, as this would give a clearer picture of relationship dynamics post CHCT.

5.13.5 Study design limitation

One of the major limitations of the study is that the use of cross-sectional data makes it difficult to establish causation. There is the inability to have a clear temporal relationship between the couple's HIV status and their social and sexual behaviours. This makes it difficult to develop causal hypotheses or causal inferences regarding the reported behaviours and the observed couple status. Therefore, the thesis concentrated on the description of associations rather than the proposed causes of different variables with HIV status in couples and in individuals.

5.13.6 Loss to follow up

As indicated earlier, no active retention of the couples after the baseline interview was done. This was due to staff and funding constraints. As a result, only 47% of the respondents voluntarily returned for the follow-up interviews. This loss to follow-up of a large proportion of couples presents a challenge in trying to interpret the post CHCT couple dynamics. Greater couple retention would have helped to answer the question on the effect of CHCT on relationship status.

In addition, this might have resulted in a systematic difference in the characteristics of the couples who were retained as compared to those who were not. However comparison of the participants indicated that those who returned for follow-up interviews were significantly older, were living together with their partner and were more likely to be hazardous drinkers. These were the only three significant individual participant differences and it is not anticipated that this would limit the usefulness of the follow-up data. However, retention was best for the HIV concordant negative couples (49%) and worst for the HIV serodiscordant couples (29%); and this could affect the post CHCT assessments.

5.14 Strengths of the study

This study does have several strengths.

In SA, very few studies have been done on couples with regard to HIV prevention. To my knowledge, there are no other South African studies, which have assessed the experiences of couples in the CHCT process. CHCT is also a fairly new concept in SA, where the majority of HIV testing is still being done in the context of individual VCT at government-run and NGO-run VCT facilities. Given the demonstrated efficacy of CHCT to effect behaviour change in previous studies in other settings as well as in this study, this study highlights the fact that couple-based interventions are therefore practicable and recommended in the South African context. In addition, in the selected places where CHCT is being offered in SA the study highlights some of the process considerations (such as functional referral networks) that can help improve the effectiveness of this process.

Obtaining responses to a variety of questions from both partners in a sexual partnership concurrently brings the advantage of being able not only to make a comparison of the responses, but also to characterise both individual as well as couple level characteristics accurately.

This study had a baseline as well as a follow-up component. This provided a unique opportunity to obtain information on perceptions before and after the CHCT process. In this way, the impact of CHCT can be evaluated. This is particularly so for information on the changes in risk reduction uptake post knowledge of couple HIV status, as well as the assessment of how fertility desires change after the determination of the couple HIV status.

The study combined qualitative and quantitative methodology. This made it possible to obtain in-depth information from the qualitative interviews and to put into context some of the findings from the quantitative study. This resulted in more comprehensive data collection with more detailed results than if either method had been used in isolation.

CHAPTER 6: PUBLIC HEATH IMPLICATIONS AND CONCLUSION

This chapter presents a description of the proposed public health implications of this study. The chapter ends with a conclusion of the thesis.

6.1 Public Health Implications of the Study

6.1.1 Policy implications⁷

Experiences of couples before, during and after CHCT are instrumental in the development of acceptable CHCT protocols that meet the various needs of couples. They also inform the development of community support programmes

⁷ At the time of proposal development of this PhD thesis (May 2005 to April 2006), there was an obvious policy gap in HIV prevention in SA with the apparent lack of policies and programmes focusing on HIV prevention in couples and no mention of the CHCT strategy. At times when HIV prevention in couples was mentioned, it was mainly the promotion of partners disclosing their HIV status to each other after individual VCT and advice to take up the appropriate risk-reduction measures within partnerships. Policies and programmes on the concept of partners testing together were glaringly absent. I had meetings with the provincial coordinators of two lay counsellor training organisations in the Western Cape (Lifeline and Leadership South) to discuss the concept of CHCT. The counsellors from these organisations were not trained in CHCT and the vast majority had never heard of the concept of HIV serodiscordance. I, (together with other PIP study team accredited trainers on the CDC CHCT protocol) subsequently had more meetings with counsellors from these organisations and trained more than 50 counsellors and 2 coordinators on CHCT based on the CDC CHCT protocol in collaboration with the counsellor organisation management.

About 4 ½ years later, as I write the concluding chapter of this thesis, great strides have been made in this area in SA. Couples are getting attention in HIV prevention. Some organisations have specialised couple HIV counselling and testing services available (such as the New Start for Couples conducted by the NGO New Start HIV Counselling and Testing centre). The quote at the beginning of this thesis from the MEC for health in one of the SA provinces is a clear indication that there is government commitment to prioritising HIV prevention in couples.

Therefore, given the positive programme expansion and landscape change to include couple counselling on a broader scale in SA, my thesis recommendations are mainly focused on what the best practices learnt in implementing the CHCT strategy are and how these can strengthen other CHCT programmes.

for couples after they have determined their HIV status. This study contributes to improved HIV prevention in couples and in general in the following ways.

There is recognition that implementation of the CHCT programme is not automatically going to translate into CHCT uptake and effectiveness unless certain safeguards are in place, such as:

- Facilitation of couple dialogue
- Functional referral places
- Well-trained counsellors
- Plans for service integration (CHCT, ART, family planning etc)

The results of the thesis can be generalised in as far as is possible with many CHCT programme implementation in various settings. The 4 safeguards indicated above are specific to CHCT; however, a similar process of evaluation of process/programme effect and recipient perceptions and experiences is critical in preparing for the implementation of various HIV prevention programmes.

In addition, it is important to note that, within the broader population, there are specific needs within various strata of the population. For example, in the Guguletu population, the high alcohol consumption of the population that is represented by the study participants, means that for CHCT to be effectively implemented in that community, the CHCT programme should be tailor-made to make the HIV prevention efforts relevant for the population (e.g. by addressing the alcohol consumption issue). Therefore, implementation of national policies, such as the recent HIV counselling and testing (HCT) campaign in SA, would require a first step of sub-population characterisation and thus tailoring the efforts according to population need.

Knowledge of socio-behavioural risk factors for HIV status in couples informs HIV prevention programmes on targeted prevention strategies for couples. As noted above, the aim is to implement relevant programmes and, in the case of CHCT, relevant counselling messages. Therefore, the couple profiling measure is an essential component to add to the current CHCT protocols. In this way, more personalised counselling is tailored to the needs of the couple and enables targeted prevention strategies to be developed.

The need for service integration cannot be overemphasised. CHCT needs should not be a stand-alone service, but must satisfactorily complement ART programmes, family planning and reproductive counselling and STI management services. As in many SSA countries, the recognition of the inextricable link between maternal and child health has resulted in the successful integration of maternal and child health services. Lessons from this can be extended to reinforce the inextricable link between sexual partners and the need for partner involvement in HIV testing, family planning and STI treatment as an integral component of the intervention, not as an optional extra, as is the case in many programmes.

6.1.2 New programmes or interventions

Based on the results of this thesis and in particular the objective in respect of the reliability of couple reports, the low levels of interpartner reports poses a worrying observation. This thesis proposes that upcoming programmes in the HIV prevention field that focus on promoting behaviour change collaborate with other relevant stakeholders to promote campaigns whereby individuals are advised to know their sexual partners' characteristics better. This campaign creates an opportunity to encourage individuals to know their partners better. This promotes dialogue and inevitably improves couple communication. In addition, encouragement to know the partner's HIV status would be a component of this campaign. This serves as a starting point to the culture of making informed decisions, particularly with regard to partner choice; it empowers both men and women, and it creates a receptive platform for the better acceptance of HIV prevention messages.

In most cases, the rationale given for the fragmentation of HIV prevention messages is that different audiences have different needs and vulnerabilities (e.g. sex workers, men who have sex with men etc). While this is a fair explanation, this thesis and other studies emphasise that, in sexual partnerships, it is advantageous to address both members. Therefore, programmes or studies such as microbicide trials, PMTCT implementation and so forth, would become

more credible and acceptable if they recognised the importance of accommodating the sexual partners where feasible.

6.1.3 Future research issues

As presented in the discussion section (Chapter 5), more research on the following topics is suggested:

Capacity for CHCT expansion

In this PhD study, the couples who returned for the follow up interviews a month post CHCT indicated that CHCT was acceptable. However, from the results of this thesis as was mentioned in the limitations section of this thesis; it is difficult to generalise on the acceptability of CHCT among all couples in general. More research is needed on this topic particularly on whether there are any adverse experiences post CHCT. Nevertheless, previous studies in other settings have shown that CHCT is acceptable among the couples who underwent the process, and that it has resulted in greater HIV risk reduction uptake; no adverse experiences due to the process were reported. Based on this information, there are strong recommendations to commence or upscale the CHCT programme. More research is needed on the feasibility of this CHCT upscaling, more specifically on:

- The availability of trained counsellors/or the ability to train the required counsellors to perform this service
- The capacity for infrastructural needs on this up scaling,
- The presence of referral networks and their functionality

Impact and cost effectiveness of CHCT

The HIV risk reduction uptake is one of the easily measurable outcomes of the CHCT process. To achieve the desired impact of lowering the HIV incidence, the risk reduction uptake must be sustained. There is currently a gap in the literature regarding long term behavioural change and the quantification of the estimated HIV incidence decline due to CHCT. More research is needed on this. More research is also needed on the cost effectiveness of the CHCT strategy. The thesis highlighted the labour intensiveness of the couple recruitment for CHCT. This difficulty coupled with the requirement for more trained counsellors might

affect the cost-effectiveness of the upscaling of this CHCT process. More research is needed on this topic.

Impact of enhancing couple communication on HIV incidence

One of the themes that was very evident in this thesis is the fact that for the success of the entire CHCT process, couple communication is very essential. In addition, the members of the partnerships were asked what the hurdles to attend the CHCT process are and one of the issues raised was that it had been extremely difficult to invite the partner to the CHCT process. Given this information, it appears that the importance of couple communication is high. This thesis however did not formally evaluate whether in general all couples are interested in learning the skills to enhance couple communication. In addition, there is dearth of information on whether enhancing couple communication in general could indirectly result in greater risk reduction uptake and hence a reduction in the HIV transmission rate in couples. This topic needs further research and investigation.

6.2 Conclusion

HIV prevention messaging often targets individuals, specific groups such as commercial sex workers, men who have sex with men and adolescents, as well as the broader community. There is an apparent policy gap, as well as a programmatic gap, in terms of dyadic approach programmes in many settings. Even though having a successful couple-based HIV prevention programme is complex, it is also highly effective. The first complexity is addressing the question of what the best way is to motivate couples to attend. The intervention itself (CHCT) is also complicated, in that couples also present with other needs when they attend the HIV counselling and testing process. One of the needs is for reproductive counselling, particularly in the case of HIV concordant positive and HIV serodiscordant couples who are planning to have children. Another need is for counselling in respect of other social needs, such as marital conflict, and counselling regarding any other issues that the couples may be experiencing. CHCT services must therefore be integrated with other social services that the couples may require. While this might be viewed negatively in terms of the resource implications, it can also be viewed in a positive light because it will strengthen health systems and result in greater integration of services for couples.

The study raised some key points to be considered in couple based research.

Firstly, approaching couples as a unit is important in research as well as in HIV prevention. However, couple based research tends to be very complicated because of the many variables involved, some measurable (such as age difference) but others immeasurable (such as strength of partnerships). These result in inter- and intra-couple variation in characteristics that make each couple a unique entity, so that it is almost impossible to obtain a homogenous characterisation of each of the 3 HIV groups of couples. In addition, interpartner reliability of reports might be low, which affects interpretation of couples' data. One key consideration from this research is that it is essential to realise the importance of communication between sexual partners, and to study how this

should be aided, as it is key to achieving intervention uptake as well as the desired outcome of HIV risk reduction uptake.

Secondly, the widespread promotion of CHCT needs to take into account the contextual factors and to destigmatise HIV to create an enabling opportunity and environment for couples to test for HIV together. It is essential to understand the factors that motivate couples to have this test, so that appropriate promotional materials and messages can be developed.

Lastly, the CHCT process, though focused only on HIV counselling and testing must be able to address other facets of couples' lives too, such as fertility desires in the face of the societal stigmatisation associated with childlessness and STI management in partners, both of which influence HIV prevention. In conclusion, as with any other HIV prevention programmes, robust systems for monitoring and evaluation must be in place to ensure effectiveness as well as improvements where necessary.

University of Cape Town

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University of Cape Town

Appendix 1: CHCT uptake theories

Below is a summary of two of the theories that could be used to explain the factors that influence CHCT uptake among couples.

1. HEALTH BELIEF MODEL

This theory suggests that personal beliefs influence health behaviour. This theory is relevant for CHCT uptake and specifically for each of the stages of CHCT starting from the motivation of the couple to test for HIV to the behaviour change post knowledge of couple HIV status. Since in CHCT there are two individuals (i.e. the male and female partners), their perceptions might be different (e.g. perceived susceptibility might be different between the male and the female members of the couple). The same applies to the other parameters of the Health Belief Model such as perceived seriousness, perceived benefits and perceived barriers. It is assumed that for the uptake of CHCT to occur either the dominant opinion of the one influential partner overpowers the other or both feel the same way about the perceived seriousness, perceived benefits and perceived barriers and hence make the decision to take up CHCT. The cues to action in the case of CHCT uptake could be repeated advertisements and recruitment messages on the benefits of CHCT, knowing friends who are HIV positive or have died of AIDS related illnesses or who have benefited from anti-retroviral treatment.

2. THEORY OF REASONED ACTION/ THEORY OF PLANNED BEHAVIOUR

This theory specifies that behavioural intentions and attitudes are the main predictors of behaviours. The theory is used to predict and understand intentions, behaviour and outcomes of health-related behaviours. According to the theory, the most important determinant of a person's behaviour is behavioural intent, which is a combination of attitude and subjective norms. The use of this theory in determining factors that impact on CHCT uptake is therefore valuable. In the context of CHCT uptake, the ultimate goal is for the couple to attend CHCT. The couple's attitude (degree to which the individual members of the couple, as well as the couple as a unit evaluate whether CHCT is favourable or not) undoubtedly greatly influences CHCT uptake. For CHCT, uptake will depend on whether the couple perceives the process favourably or not. This perception could be based on the input from various sources such as hearing about the experiences of other couples on the CHCT process, any media messages on CHCT and other sources. In addition, according to this theory, there could also be the influence or social pressure that is experienced by the couple. This social pressure could be to attend or not to attend the CHCT process. An example of such social pressure could be the level of community HIV-related stigma or lack thereof.

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Appendix 2: Partners in Prevention Study Summary⁸



UNIVERSITY OF CAPE TOWN

PARTNERS IN PREVENTION

“The Manyanani@Empilisweni, Partners in Prevention Study”

The Manyanani@Empilisweni, Partners in Prevention Study is the first study to ever evaluate whether it is possible to reduce transmission of HIV-1 by treating genital herpes with acyclovir, a widely used and generically available medication. Researchers theorize that acyclovir suppression could reduce HIV transmission by 50 percent. If successful, the study could lead to an important new approach to HIV prevention in South Africa. It would be one of the first interventions to provide clinical health benefits to HIV positive people with higher CD4 counts and who are not on ARV's.

Almost 40 studies over the past 15 years have shown that genital herpes is a risk factor for the transmission and acquisition of HIV. **Up to 90% of HIV-infected people worldwide are infected with herpes simplex virus type 2 (HSV-2), the genital herpes virus.** These individuals appear to be significantly more likely to transmit HIV than other HIV-infected people, because they can shed large amounts of HIV due to the effects of the herpes virus. Conversely, people who do not have HIV, but do have genital herpes, are about twice as likely to become infected with HIV if exposed than people who do not have genital herpes.

The study, which started in 2004, will enroll more than 2,800 monogamous couples at 12 sites in Africa. For a couple to qualify for the study, one partner must be HIV-infected and the other must be uninfected (and thus HIV-discordant). The HIV-infected partner must also be infected with the genital herpes virus, among other criteria. The HIV-infected partners will be provided either twice-daily 400 mg acyclovir suppressive therapy or twice-daily placebo. Each couple will be followed for 12 or more months, with screening and treatment for other STDs and provision of condoms and risk reduction counseling. HIV-infected study participants will also be referred to HIV/AIDS treatment programs.

This study will also be pivotal in bringing Couples HIV Counseling and Testing (CHCT) to the communities in which this study is being conducted. In Africa, most HIV transmission occurs within HIV discordant couples in which the partners do not know each other's HIV status. Data from other studies conducted in Africa have found that for couples in which one partner is HIV-positive, there is a 50:50 chance that their partner is HIV-negative. It is critical that couples be tested as couples and receive excellent counseling and information about HIV discordancy if they test HIV-discordant.

⁸ This is a document that was compiled by the PIP study team as part of the press pack.



At Manyanani@Empilisweni, NY108, Guguletu couples interested in the study receive HIV counseling and testing together, screening for genital herpes, as well as excellent counseling on how to prevent HIV transmission. The Manyanani@Empilisweni, Partners in Prevention Study team has worked in close collaboration with VCT Centers in the city and provincial clinics and the government council clinics as well as the media to bring attention to the importance of HIV counseling and testing as a couple.

The Manyanani@Empilisweni, Partners in Prevention Study works in collaboration with the University of Washington and is funded by the Bill and Melinda Gates Foundation. The study is being conducted in six sites in east Africa and six sites in southern Africa (see map below).

Sites for HSV-HIV Transmission Trial



Appendix 3: CHCT modules

(Source: CDC, 2007. Couples HIV Counseling and Testing (CHCT). <http://www.cdc.gov/globalaids/Resources/prevention/chct.html> Accessed on 12 March 2011)

Module One: Background and Discordance

Module One is an introductory module that covers the following topics:

- Goals of couples HIV counseling and testing
- Comparison of CHCT with other HIV testing models
- The concept of HIV sero-discordance

Module Two: Introduction to Couples Counseling Skills

This module introduces counseling skills specific to working with couples. These skills include:

- Understanding how personal awareness can help a counselor prevent personal issues from influencing his or her interaction with couples during counseling
- Learning about the importance of forming alliances during a couples HIV counseling
- Directing communication from the counselor to the couple and from each member of the couple to each other
- Developing mediation skills to help couples ease tension and diffuse blame during the CHCT session

Module Two examines these and several other skills and attributes specific to couples HIV counseling and testing.

Module Three: Initial Session of the CHCT Intervention

Module Three covers the material included in the initial session of the couples HIV counseling and testing (CHCT) intervention. The initial session is the portion of the CHCT session that introduces the couple to CHCT and prepares them for their HIV test and the possible results. The four components of the initial session guide the counselor through this interaction. They are:

- Introduce the couple to CHCT and obtain concurrence to receive couple services
- Explore the couple's life stage and reason for seeking CHCT
- Discuss the couple's HIV risk concerns
- Prepare the couple for testing and discuss possible results

Module Four: Providing Concordant Negative Results

This module explains how to deliver concordant negative test results to couples and how to discuss strategies for remaining HIV negative with the couple. The module introduces two components that guide counselors through the steps and skills needed for the post-test session with concordant negative couples:

- Providing the couple with concordant negative results
- Discussing risk reduction with the couple
- Identifying important counseling skills for delivering concordant negative results

Module Five: Providing Concordant Positive Results

Module Five examines how to provide an HIV-positive concordant couple with their test results. The five components of this module guide the counselor through providing the results and the subsequent counseling for coping, support, and positive living. The components include:

- Provide the Concordant Positive Results
- Discuss Coping and Mutual Support
- Discuss Positive Living and HIV Care and Treatment
- Discuss Things to Do at Home to Keep Healthy

- Discuss Risk Reduction
- Discuss Children, Family Planning, and PMTCT Options
- Discuss Disclosure and Getting Support

Module Five also includes background information for the counselor on antiretroviral (ARV) treatment, prevention of mother-to-child transmission (PMTCT), and considerations for disclosing HIV results to friends and family.

Module Six: Providing Discordant Results

Module Six will clarify the implications of discordance and will explain the Couples HIV Counseling and Testing (CHCT) procedure for counseling discordant couples, including:

- Factors that Influence the Transmission of HIV
- Essential Counselor Responsibilities
- Providing Discordant Results
- Discussing Risk Reduction
- Differences in Counseling Concordant Positive and Discordant Couples

Module Seven: Support and Prevention Services

Module Seven examines support services that can be offered to couples affected by HIV and the steps counselors can take to link clients to these services. Services include care and treatment, psychosocial support, and community resources. In addition to identifying these services and linking couples to them, Module Seven also discusses how to mobilize a community so that more people are aware of and involved in services, support, and prevention.

Module Eight: Outreach and Recruitment

Module Eight identifies the strengths and weaknesses of different outreach strategies in making more couples aware of CHCT services in their communities. These strategies include:

- Community Outreach
- Door-to-Door Outreach
- Media Outreach

Fictional Drama and Theater

Outreach through Antenatal Clinics

Outreach in the Workplace

Appendix 4: Baseline Questionnaire

DYAD RELATED FACTORS IN HIV PREVENTION

Hello, my name is _____. I am going to ask you some questions to find out more about you and your partner as well as some questions on sexual practices. Your answers are completely anonymous and your name is not recorded anywhere. It is important that you answer the questions honestly; there are no right or wrong answers. You will not be judged based on your responses. If you don't know the answer to any of the questions I ask you, it is okay just tell me that you don't know. You do not have to answer a particular question if you do not want to. Your responses are very helpful for helping us better understand the characteristics of the couples that are attending Couple HIV Counselling and Testing here at Manyanani@Empilisweni.

All the information that you provide is confidential; only the researchers who are organizing this study will see it. It will not be passed on to anyone else. Your responses will not affect any counselling that you get from this clinic.

Your partner is not going to be informed of any of the responses that you give.

Do you have any questions before we start?

ITEM	RESPONSES
Interviewer initials	<input type="text"/> <input type="text"/>
Date of interview	DD MM YY <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Has the participant completed the informed consent process?	Yes=1 No=0 → Ensure informed consent signed before proceeding

DEMOGRAPHIC & SOCIO-ECONOMIC CHARACTERISTICS	
I would like to ask you some general questions about yourself.	
001	Sex Female=1 Male=2
002	How old are you? Age in years <input type="text"/> <input type="text"/>
003	What main language do you speak at home? isiXhosa=1 isiZulu=2 Afrikaans=3 English=4 Other (Specify) _____
004	Which of the following best describes the housing in which you are currently living? Shack/informal dwelling=1 Formal house/Flat/council home=2 Other (Specify) _____
005	Including yourself, how many adults and children live in your household? <input type="text"/> <input type="text"/>
006	How important is religion to you? Very important = 1 Somewhat important = 2 Not very important = 3 Don't know =5

SOCIO-ECONOMIC STATUS		
Now I am going to ask you some more questions about your work and health		
007	What is the highest level of education that you have completed?	Standard _____ OR Grade _____ For those who did not go to school please assign a value of 0
008	Are you currently working?	Yes=1 No=0 → Go to Question 010
009	What is the main kind of work that you do? <i>Professional = teacher, nurse, researcher, NGO, community development</i> <i>Skilled = sales work, CHW, police officer</i> <i>Un/semi-skilled manual = builder, labourer, domestic worker, child minder, Home/community-based work, craft-maker</i>	Name the actual profession: _____ Professional = 1 Skilled = 2 Semiskilled = 3 Other (specify) _____
010	What is the approximate total household income per month? (This money could be coming from grants and donations from various sources)	R <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

FERTILITY HISTORY		
Now I am going to ask you questions about children that you have or ever had in your life with this or with other partners.		
011	Have you or your partner ever been pregnant?	Yes=1 No=0 → Go to Question 014
012	How many living children do you have?	<input type="text"/> <input type="text"/>
013	What are the genders of your children?	Male = <input type="text"/> Female = <input type="text"/>
014	How many other children other than your own, are you taking care of?	<input type="text"/> <input type="text"/>

HIV STATUS		
015	Have you tested for HIV before?	Yes=1 No=0 → Go to Question 020
016	How many times have you tested for HIV?	<input type="text"/> <input type="text"/>

017	When did you get tested for HIV?	(In <i>chronological order starting with the earliest test date</i>) MM YY <table border="1"> <tr> <td>Time 1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Time 2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Time 3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Time 4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Time 5</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Time 1					Time 2					Time 3					Time 4					Time 5					
Time 1																												
Time 2																												
Time 3																												
Time 4																												
Time 5																												
018	What was your HIV result the last time you got tested for HIV?	Positive = 1 Negative = 2 Don't remember = 3 I do not want to disclose to you = 4																										
019	Did you discuss your HIV status with your partner before today?	Yes=1 No=0																										
020	Has your partner tested for HIV before?	Yes=1 No=0 Don't know=3 Go to Question 022																										
021	What is your partner's HIV status?	Positive = 1 Negative = 2 Don't know = 3																										
022	Have you ever gone for Couple HIV Counselling and Testing before today?	Yes=1 No=0																										
023	What do you think your HIV status is today?	Positive = 1 Negative = 2 Don't know = 3																										
024	What do you think your partner's HIV status is today?	Positive = 1 Negative = 2 Don't know = 3																										
025	How surprised would you be if you found out that you are HIV positive today?	Very Surprised = 1 Surprised = 2 Not so surprised = 3 Not surprised at all = 4																										
026	How surprised would you be if you found out that your partner is HIV positive today?	Very Surprised = 1 Surprised = 2 Not so surprised = 3 Not surprised at all = 4																										
027	Do you know someone who is HIV positive?	Yes=1 No=0																										

COUPLE HIV COUNSELLING AND TESTING

The name of our clinic where you are right now is called Manyanani@Empilisweni Clinic. I am going to ask some questions regarding Couple HIV counselling and testing.

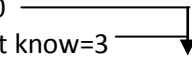
028	Where did you hear about the Manyanani clinic from?	_____	
029	Between you and your partner, who initiated your coming to this clinic for CHCT?	Self = 1 Partner = 2 Both at the same time = 3 Other (specify): _____	

030	When did you FIRST hear about couple HIV counselling and testing?	MM <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> </div>	YY <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> </div>	
031	How would you describe your partner's attitude about coming to this clinic for CHCT?	Very interested = 1 Interested = 2 Slightly interested = 3 Not interested at all = 4 Don't know = 5		
032	Did you inform anybody else (other than your partner) that you were coming to this clinic to test for HIV?	Yes=1 No=0 → Go to Question 034		
033	Whom did you inform? List all			
034	Why did you decide to come together to have an HIV test? (Do not prompt) Mark all that apply.			
	I just want to know my status	Yes=1 No=0		
	I know my status, but I want to know my partner's status	Yes=1 No=0		
	My partner and I are planning to have a child	Yes=1 No=0		
	My partner and I are planning to get married	Yes=1 No=0		
	I know of someone who is HIV positive	Yes=1 No=0		
	I have been unwell	Yes=1 No=0		
	My partner has been unwell	Yes=1 No=0		
	I have been advised by a health worker	Yes=1 No=0		
	My partner has been advised by a health worker	Yes=1 No=0		
	My partner said we should come	Yes=1 No=0		
	Other (Specify) _____			
035	Do you consider yourself at risk of HIV infection?	Yes=1 No=2 → Go to Question 037 Don't know =3 → Go to 038		
036	Why do you consider yourself at risk? (Do not prompt) Mark all that apply.			
	I have multiple partners	Yes=1 No=0		
	My partner has multiple partners	Yes=1 No=0		
	I don't trust my partner	Yes=1 No=0		
	I don't use condoms	Yes=1		

		No=0	
	I had a blood transfusion	Yes=1 No=0	
	Other (Specify) _____		
037	Why don't you consider yourself at risk? (Do not prompt) Mark all that apply.		
	I don't have multiple partners	Yes=1 No=0	
	My partner doesn't have multiple partners	Yes=1 No=0	
	I trust my partner	Yes=1 No=0	
	I use condoms	Yes=1 No=0	
	Other (Specify) _____		

PARTNERSHIP CHARACTERISTICS Now I am going to ask you some questions about your relationships.			
038	Are you married to the partner that you came to the clinic with?	Yes=1 No=0	
039	How would you describe the strength of your relationship with your partner today?	Very committed to each other = 1 Somewhat committed to each other = 2 Not committed to each other = 3	
040	For how long have you been having a sexual relationship with the current partner?	MONTHS YEARS 1. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 2. Not sexually active	
041	Including the one at the clinic, how many regular sexual partners do you have?	<input type="text"/> <input type="text"/>	
042	In addition to you, does your partner have any other regular partners?	Yes=1 No=0 Don't know=3 Go to Question 44	
043	How many current partners does your partner have including you?	<input type="text"/> <input type="text"/>	
044	How many new partners have you had in the past 6 months?	<input type="text"/> <input type="text"/>	
045	Do you live together with your current partner?	Yes=1 No=0	
046	How many children do you have with this current partner?	<input type="text"/> <input type="text"/>	
047	What are the genders of your children with this current partner?	Male = <input type="text"/> Female = <input type="text"/>	

FERTILITY DESIRE Now I am going to ask you some questions about your plans to have children in the future.		
048	Do you want to have children in the future?	Yes=1 No=0 Don't know =3 → Go to 50
049	Why do you want to have children in the future? / Why don't you want to have children in the future? _____ _____ _____	
050	How would you feel if you or your partner became pregnant in the next few weeks?	Very Happy = 1 Somewhat happy = 2 Mixed feelings = 3 Somewhat sad = 4 Very Sad/upset = 5 Don't know = 6
051	How do you think your partner would feel if you (or your partner) became pregnant in the next few weeks?	Very Happy = 1 Somewhat happy = 2 Mixed feelings = 3 Somewhat sad = 4 Very Sad/upset = 5 Don't know = 6
052	Have you discussed having children in the future with your partner?	Yes=1 No=0
053	Does your partner want to have children in the future?	Yes=1 No=0 Don't know=3
054	Do you think HIV positive people should have children?	Yes=1 No=0 Don't know=3
055	How do you think your desire to have a child will change if you find out that you are HIV positive? _____ _____ _____	
056	How do you think it would change your desire to have a child if your partner were HIV positive? _____ _____ _____	
057	Do you think/feel that your family is expecting you to have (more) children?	Yes=1 No=0 Don't know=3 → Go to Question 59
058	How strongly does your family's opinion influence your decision whether or not you want to have children?	Very Strongly = 1 Strongly = 2 Normal = 3 Weakly = 4

		Very weakly = 5 Not at all = 6	
059	Do you think/feel that your partner's family is expecting you to have (more) children?	Yes=1 No=0 Don't know=3  Go to Question 61	
060	How strongly does your partner's family opinion influence your decision whether or not you want to have children?	Very Strongly = 1 Strongly = 2 Normal = 3 Weakly = 4 Very weakly = 5 Not at all = 6	
061	Can HIV be transmitted from mother to child?	Yes=1 No=0 Don't know=3	
062	The medication used to treat HIV infection is called antiretroviral therapy, also commonly known as ARVs. Do you know about ARVs?	Yes=1 No=0 → Go to Question 63	
063	Do you know of any people in the community who are on ARVs?	Yes=1 No=0	

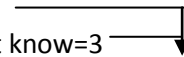

STI HISTORY			
Now I am going to ask you some questions			
064	Do you and your partner ever talk about protecting yourselves from sexually transmitted diseases?	Yes=1 No=0 → Go to Question 66	
065	How comfortable is it for you and your partner to talk about STDs together?	Comfortable = 1 Slightly uncomfortable = 2 Very uncomfortable = 3	
066	Have you had any genital discharge in the past year?	Yes=1 No=0 → Go to Question 68	
067	The last time you had genital discharge within the past year; did you discuss this with your sexual partner/s?	Yes=1 No=0	
068	Have you had any genital ulcers in the past year?	Yes=1 No=0 → Go to Question 70	
069	The last time you had genital ulcers within the past year, did you discuss these symptoms with your sexual partner/s?	Yes=1 No=0	
070	Genital ulcers and genital discharge are known as sexually transmitted infections. Have you ever been treated for a sexually transmitted infection in your life?	Yes=1 No=0 → Go to Question 85	
071	The last time you had either genital ulcers or genital discharge, did you seek treatment for these symptoms?	Yes=1 No=0 → Go to Question 85	
072	Where did you seek treatment? (Do not prompt) Mark all that apply.		
	Day hospital	Yes=1 No=0	

	Clinic	Yes=1 No=0	
	General practitioner	Yes=1 No=0	
	Traditional healer	Yes=1 No=0	
	Chemist	Yes=1 No=0	
	Other (Specify): _____		
073	Did your symptoms improve after this treatment?	Yes, completely = 1 Yes, slightly = 2 No = 3	
074	Did you seek this treatment together with your partner?	Yes=1 No=0 → Go to Question 76	
075	Was your partner treated too?	Yes=1 No=0	
076	Did the health care provider tell you about the importance of treatment of your sexual partners?	Yes=1 No=0 Can't remember = 3	
077	Were you informed of the need to use condoms during the period of treatment?	Yes=1 No=0 Don't remember = 3	
078	Were you given a partner notification note?	Yes=1 No=0 _____ Can't remember = 3 ↓ Go to Question 82	
079	Did you give the partner notification note to your partner/s?	Yes=1 No=0 _____ Can't remember = 3 ↓ Go to Question 82	
080	After how many days did you give the partner notification note to your partner?	<input type="text"/> <input type="text"/> Can't remember = <input type="text"/>	
081	What was the reaction of your partner when you gave him/her the partner notification note or informed him/her that they also need to get treatment for a sexually transmitted infection? _____ _____ _____		
082	Did your partner go to get treatment too?	Yes=1 No=0 _____ Don't know=3 _____ Go to Question 85	

083	Did your partner receive treatment from the same health care provider?	Yes=1 No=0 Don't know = 3	
084	Were you provided with any condoms?	Yes=1 No=0 Don't remember = 3	
085	Genital ulcers and genital discharge are known as sexually transmitted infections. Within the past year has your partner ever had a sexually transmitted infection?	Yes=1 No=0 ————— Don't know=3 ————— ↓ Go to Question 94	
086	The last time your partner had either genital ulcers or genital discharge, did he/ she seek treatment for these symptoms?	Yes=1 No=0 ————— Don't know=3 ————— ↓ Go to Question 94	
087	Where did he/she seek treatment? (Do not prompt) Mark all that apply.		
	Day hospital	Yes=1 No=0	
	Clinic	Yes=1 No=0	
	General practitioner	Yes=1 No=0	
	Traditional healer	Yes=1 No=0	
	Other (Specify): _____		
088	Was your partner given a partner notification note?	Yes=1 No=0 ————— Don't know=3 ————— ↓ Go to Question 91	
089	Did your partner give the partner notification note to you?	Yes=1 No=0 ————— Can't remember = 3 ————— ↓ Go to Question 94	
090	After how many days did your partner give the partner notification note to you?	<input type="text"/> <input type="text"/> Don't know = <input type="text"/>	
091	What was your reaction when your partner gave you the partner notification note or informed you that you also need to get treatment for a sexually transmitted infection? _____ _____ _____		
092	Did you go to get treatment too?	Yes=1 No=0 —→ Go to Question 94	

093	Did you receive treatment from the same health care provider as your partner?	Yes=1 No=0 Don't know = 3	
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ALCOHOL USE DISORDERS IDENTIFICATION TEST-C			
Now I am going to ask you some questions about your use of alcoholic beverages during the past year. Alcoholic beverages refer to all liquids that contain alcohol such as beer, wine, vodka, among others			
094	How often did you have a drink containing alcohol in the past year?	Never (0) Monthly or less (1) Two to four times a month (2) Two to three times a week (3) Four or more times a week (4)	
095	In the past year, how many drinks did you typically have when you drank?	I did not drink in the past year (0) 1-2 drinks (1) 3-4 drinks (2) 5-6 drinks (3) 7-9 drinks (4) More than 10 drinks (5)	
096	How often did you have 6 or more drinks on one occasion in the past year?	Never (0) Less than monthly (1) Monthly (2) Weekly (3) Daily or almost daily (4)	
097	TOTAL AUDIT SCORE	<i>0 = no alcohol consumption</i> <i>Greater than 4 in men = positive</i> <i>Greater than 3 in women = positive</i>	

SEXUAL PRACTICES			
098	At what age did you have your first sexual encounter?	Age in years <input type="text"/> <input type="text"/> Not yet sexually active <input type="checkbox"/>	
099	How many sexual partners have you had in your life?	<input type="text"/> <input type="text"/>	
100	How many sexual partners have you had in the past 1-year?	<input type="text"/> <input type="text"/>	
101	How many new sexual partners have you had in the past 1-year?	<input type="text"/> <input type="text"/>	
102	How many times have you had sex with your current partner in the past 1-month?	<input type="text"/> <input type="text"/>	
103	Are you or your partner currently using any kind of contraception?	Yes=1 No=2  Don't know=3  Go to Question 105	
104	Which of the following methods of contraception are you (or your partner) <u>using currently</u> ? (Read all, circle as many as apply)		
	Oral contraceptive pill	Yes=1 No=0	

	3-month injectable ('depo')	Yes=1 No=0	
	2-month injectable ('nuristerate')	Yes=1 No=0	
	Injectable but don't know which one	Yes=1 No=0	
	Female sterilization	Yes=1 No=0	
	Male condom	Yes=1 No=0	
	Female condom	Yes=1 No=0	
	Other methods	Yes=1 Specify: No=0	
105	Have you ever used condoms with your current partner?	Yes=1 No=0 → Go to Question 108	
106	Did you use condoms with your current partner the last time you had sex?	Yes=1 No=0 → Go to Question 108	
107	What was the reason why you used condoms the last time you had sex? Tick all that apply		
	Prevention of pregnancy	Yes=1 No=0	
	Prevention of STIs	Yes=1 No=0	
	Prevention of HIV transmission	Yes=1 No=0	
	Always use condoms	Yes=1 No=0	
	Other (Specify): _____		
108	What was the reason why you did not use condoms the last time you had sex? _____ _____		
109	How would you rate the protective effect provided by condoms against HIV?	Completely effective = 1 Incomplete protection = 2 Effectiveness questionable = 3 Ineffective = 4 Don't know = 5	
110	Males: Are you circumcised? Females: Is your partner circumcised?	Yes=1 No=0	
111	Have you ever paid money or exchanged anything (food, cellphone etc) for sex in your life?	Yes=1 No=0	
112	Have you ever been offered money or anything (food, cellphone etc) for sex in your life?	Yes=1 No=0	
113	Have you ever been forced to have sex against your will in your life?	Yes=1 No=0	
114	Have you ever had sex under the influence of alcohol in the past 1-year with your current	Yes=1 No=0	

	partner?		
115	Have you ever had sex under the influence of any other mind-altering drugs like mandrax, tick or dagga in the past 1-year?	Yes=1 No=0	

Mental Health Assessment

Now I would like to ask you about your mood and traumatic events you may have experienced in your life. This is important for us to be able to understand what emotional problems the community may be struggling with.

DURING THE PAST WEEK		Rarely or none of the time (Less than 1 day)	Some of the time (1 – 2 days)	Occasionally or Moderately (3 – 4 days)	Most of the time (5 -7 days)
D1	I have been worrying about things that usually don't worry me				
D2	I did not feel like eating, my appetite was poor				
D3	I felt that I could not shake off the blues(sadness) even with help from my family and friends				
D4	I felt that I was not as good as other people				
D5	I had trouble keeping my mind on what I was doing (concentration)				
D6	I felt depressed and sad				
D7	I felt that everything I did was an effort				
D8	I felt the future was hopeless				
D9	I thought my life has been a failure				
D10	I felt fearful/afraid				
D11	My sleep was restless				
D12	I was unhappy				
D13	I talked less than usual				
D14	I felt lonely				
D15	People were unfriendly				
D16	I did not enjoy life				
D17	I cried frequently for no reason				
D18	I felt sad				
D19	I felt that people disliked me				
D20	I could not get "going" during the day				

116	TOTAL SCORE	
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117	HIV Test Result	Positive = 1 Negative = 0	
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Appendix 5: Immediate post CHCT questionnaire

If participant refused to continue with the interview please mark here:

POST TESTING QUESTIONNAIRE			
118	Why did you decide to test as a couple? <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		
119	What were your experiences in the HIV couple counselling session? <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		
120	What did you like about HIV couple counselling session? <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		
121	What did you dislike about the CHCT session? <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		
122	<table border="0" style="width: 100%;"> <tr> <td style="width: 60%;">Are you glad you have attended CHCT with your partner?</td> <td style="padding-left: 20px;"> Very glad= 1 Glad = 2 Not glad = 3 </td> </tr> </table>	Are you glad you have attended CHCT with your partner?	Very glad= 1 Glad = 2 Not glad = 3
Are you glad you have attended CHCT with your partner?	Very glad= 1 Glad = 2 Not glad = 3		
123	Why or why not? <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		
124	<table border="0" style="width: 100%;"> <tr> <td style="width: 60%;">Would you have preferred to come for the HIV test alone?</td> <td style="padding-left: 20px;"> Yes = 1 No = 0 Unsure = 3 </td> </tr> </table>	Would you have preferred to come for the HIV test alone?	Yes = 1 No = 0 Unsure = 3
Would you have preferred to come for the HIV test alone?	Yes = 1 No = 0 Unsure = 3		
125	What areas would you like to be clarified more regarding CHCT? <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		
126	<table border="0" style="width: 100%;"> <tr> <td style="width: 60%;">Are you going to let anybody know your HIV test results?</td> <td style="padding-left: 20px;"> Yes=1 No=0 Unsure=3 <div style="text-align: right; margin-top: 5px;"> → ↓ </div> Go to Question 168 </td> </tr> </table>	Are you going to let anybody know your HIV test results?	Yes=1 No=0 Unsure=3 <div style="text-align: right; margin-top: 5px;"> → ↓ </div> Go to Question 168
Are you going to let anybody know your HIV test results?	Yes=1 No=0 Unsure=3 <div style="text-align: right; margin-top: 5px;"> → ↓ </div> Go to Question 168		
127	Who are you going to inform about your HIV test results? <i>List all.</i> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		

128	Would you recommend the Couple Counselling and testing service to other couples or to your friends?	Yes=1 No=0	
129	Considering your response above, Why would you do that?		

The interview is now finished. Thank you for your time.

We would like to talk to you and your partner a month from today, to find out how you are dealing with your HIV test results. Are you willing to be contacted for a short interview?

Yes = 1

No = 2

**Please give me your telephone number and your physical address:
(Record in locator information form)**

Date of next interview:

DD	MM	YY
<input type="text"/>	<input type="text"/>	<input type="text"/>

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Appendix 6: AUDIT-C screening tool

AUDIT-C	
Q1: How often did you have a drink containing alcohol in the past year?	
Answer	Points
Never	0
Monthly or less	1
Two to four times a month	2
Two to three times a week	3
Four or more times a week	4
Q2: How many drinks did you have on a typical day when you were drinking in the past year?	
Answer	Points
None, I do not drink	0
1 or 2	0
3 or 4	1
5 or 6	2
7 to 9	3
10 or more	4
Q3: How often did you have six or more drinks on one occasion in the past year?	
Answer	Points
Never	0
Less than monthly	1
Monthly	2
Weekly	3
Daily or almost daily	4
<p>The AUDIT-C is scored on a scale of 0-12 (scores of 0 reflect no alcohol use). In men, a score of 4 or more is considered positive; in women, a score of 3 or more is considered positive. Generally, the higher the AUDIT-C score, the more likely it is that the patient's drinking is affecting his/her health and safety.</p>	

Appendix 7: Follow-up Questionnaire

Questionnaire to be administered 1 or more months post CHCT

	ITEM	RESPONSES	
	Interviewer initials	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	
	Date of interview	DD MM YY <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	

DYAD RELATED FACTORS IN HIV PREVENTION

Hello, my name is _____. I am going to ask you some questions to find out more about you and your partner’s relationship since you attended Couple HIV Counselling and Testing here at the Manyanani@Empilisweni Clinic one -two months ago.

All the information that you provide is confidential; only the researchers who are organizing this study will see it. It will not be passed on to anyone else. Your responses will not affect any counselling that you get from this clinic.

Your partner is not going to be informed of any of the responses that you give.

Do you have any questions before we start?

	ITEM	RESPONSES	
001	Interviewer initials	<input type="text"/> <input type="text"/>	
002	Date of interview	DD MM YY <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	

CHCT I would like to ask you some general questions about your experiences in the couple HIV counseling and testing session that you attended at Manyanani@Empilisweni about month ago			
003	How would you describe your experiences in CHCT?		
004	What did you like the most about the CHCT session?		
005	What did you like the least about the CHCT session?		
006	What would you have wished to change?		

RELATIONSHIP STATUS I am going to ask you some questions about your relationship with the partner that you attended CHCT with. <i>Ndizakubuza iimibuzo ethile mayela nobudlelwane bakho neqabane lakho obundwendwele nalo kwi CHCT</i>			
007	Are you still together with your partner since the HIV test?	Yes/Ewe=1 → Go to question 009 No/ Hayi=0	
008	How many days after the HIV test did your relationship end? <i>Emva kwentsuku ezingaphi utsale igazi uthando lwenu lwaphela?</i>	<input type="text"/> <input type="text"/>	
009	How would you describe your relationship with your partner before the HIV test? <i>Ungabuchaza njani ubudlelwane neqabane lakho phambi kovavanyo lwentsholongwane kagawulayo?</i>	Very committed to each other = 1 Somewhat committed to each other = 2 Not committed to each other = 3 <i>Sizinikezele omnye komnye 1 Ukuzinikezela okuthile 2 Asizinikezelanga omnye komnye 3</i>	
010	How would you describe your relationship soon after the HIV test? <i>Ungabuchaza njani ubudlelwane bakho neqabane lakho emva kokuvavanywa intsholongwane kagawulayo?</i>	Very committed to each other = 1 Somewhat committed to each other = 2 Not committed to each other = 3 <i>Sizinikezele omnye komnye 1 Ukuzinikezela okuthile 2 Asizinikezelanga omnye komnye 3</i>	

011	<p>How would you describe your relationship now as compared to the period before the HIV test?</p> <p><i>Ungabuchaza njani ubudlelwane bakho neqabane lakho ngoku uthelekisa nexesha elingaphambili koku vavanyelwa inthsolongwane kagawulayo?</i></p>	<p>Much stronger than before = 1 No change = 2 Weaker than before = 4 Much weaker than before= 5</p> <p><i>Bomelele kakhulu kunakuqala 1 Akukho lutshintsho 2 Buyekeyeke kunakuqala 3 Buyekeyeke kunakuqala 4 Buyekeyeke kakhulu kunakuqala 5</i></p>	
012	<p>Did you and your partner (just the two of you) discuss you HIV test results after the test?</p> <p><i>Naxoxa wena neqabane lakho (nina nobabini kuphela) ngeziphumo zenu zovavanyo lwentsholongwane emva kovavanyo.</i></p>	<p>Yes/Ewe=1 No/ Hayi=0 → Go to question 15</p>	
013	<p>How many days after the HIV test did you first discuss your test results?</p> <p><i>Naqalisa emva kwentsuku ezingaphi ukuxoxa ngeziphumo zentsholongwane kagawulayo</i></p>	<p style="text-align: center;"><input type="text"/></p>	
014	<p>Who initiated this discussion on the HIV test results?</p> <p><i>Ngubani owaqalisa le ngxoxo engeziphumo zovavanyo lwentsholongwane kagawulayo?</i></p>	<p>Self = 1 Partner = 2 Both at the same time = 3 Other (specify): _____</p> <p><i>Ndim 1 Liqabane lam 2 Sobabini ngexesha nye 3 Ezinye (cacisa):</i> _____</p>	
015	<p>Did attending CHCT enable you to discuss issues around HIV that you normally don't talk about?</p> <p><i>Ingaba ukundwendwela ingcebiso novavanyo lwamaqabane lakwenza wakwazi ukuxoxa ngemibandela engentsholongwane kagawulayo ongafane uthethe ngayo?</i></p>	<p>Yes/Ewe=1 No/ Hayi=0 → Go to question 017</p>	

016	What issues were you able to talk about after the CHCT session? <i>Yeyiphi imibandela okwazileyo ukuthetha ngayo emva kwexesha leengcebiso novavanyo lwentsholongwane?</i> <hr/> <hr/> <hr/>	
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HIV status disclosure		
017	Did you discuss your HIV test results with other people/relatives after the test? <i>Uxoxile ngeziphumo zakho zovavanyo lwentsholongwane kagawulayo nabanye abantu / izizalwane emva kovavanyo?</i>	Yes/Ewe=1 No/ Hayi=0 → Go to question 19
018	Who did you inform about your HIV test results? <i>Uxelele bani ngeziphumo zakho zovavanyo?</i> <hr/> <hr/>	
019	Did your partner discuss his/her HIV test results with other people/relatives after the test? <i>Iqabane lakho lixolile ngeziphumo zalo zovavanyo nabanye abantu/izizalwane emva kovavanyo?</i>	Yes=1 No=0 → Go to question 21 Don't know = 3 → Go to question 21 Ewe = 1 Hayi= 0 → Go to question 21 Andazi = 3 → Go to question 21
020	Who did he/she inform about the HIV test results? <i>Iqabane lakho lixelele bani ngeziphumo zalo zovavanyo lwentsholongwane kagawulayo?</i> <hr/> <hr/>	
021	Have you joined any support group since the HIV test? <i>Ingaba ulilungu labantu abomelezanayo(support group)</i>	Yes/Ewe=1 No/ Hayi=0
022	Have you seen any health care provider about your HIV status? <i>Sele ubonene nomnikezeli wonyango lwezempilo mayela nobume bakho nentsholongwane kagawulayo?</i>	Yes/Ewe=1 No/ Hayi=0 → Go to question 24
023	Which health care provider, clinic did you see concerning your HIV status? <i>Yeyiphi indawo yonikezelo-nyango lwezempilo ose ubonene nayo malunga nobume bakho bentsholongwane kagawulayo?</i> MARK ALL THAT APPLY	
	Day hospital	Yes/Ewe=1 No/ Hayi=0
	Clinic	Yes/Ewe=1 No/ Hayi=0
	General practitioner	Yes/Ewe=1 No/ Hayi=0

	Traditional healer	Yes/Ewe=1 No/ Hayi=0	
	Chemist	Yes/Ewe=1 No/ Hayi=0	
	Other (Specify):		

Fertility desire			
024	Did you and your partner talk about future plans regarding having more children? <i>Ingaba wena neqabane lakho nikhe nathetha ngezicwangciso zekamva eli nxulumene nokufumana abanye abantwana?</i>		Yes/Ewe=1 No/ Hayi=0 → Go to question 26
025	What was your decision on this matter? <i>Nagqiba kwelithinii ngalo mba?</i> _____ _____ _____		
026	Do you want to have children in the future? <i>Uyafuna ukuba nabantwana kwixa elizayo?</i>		Yes=1 No=2 Don't know =3 Ewe = 1 Hayi= 0 Andazi = 3
027	Why do you want to have children in the future? / Why don't you want to have children in the future? <i>Kutheni ufuna ukuba nabantwana kwixa elizayo/Kutheni ungafuni ukuba nabantwana kwixa elizayo?</i> _____ _____ _____		
028	How would you feel if you or your partner became pregnant in the next few weeks? <i>Ungeva njani xa wena okanye iqabane lakho lingakhulelwa kwiveki ezimbalwa ezizayo?</i>	Very Happy = 1 Somewhat happy = 2 Mixed feelings = 3 Somewhat sad = 4 Very Sad/upset = 5 Don't know = 6 <i>Ndingavuya kakhulu 1 Ndingababuvuya 2 Ndingavuya-Ndingavuyi 3 Ndingababuhlungu 4 Ndingababuhlungu kakhulu 5 Andazi 6</i>	

029	How do you think your partner would feel if you (or your partner) became pregnant in the next few weeks? <i>Ucinga ukuba iqabane lakho lingaziva njani ukuba wena (okanye lona) lingakhululwa kweziveki zimbawwa zizayo?</i>	Very Happy = 1 Somewhat happy = 2 Mixed feelings = 3 Somewhat sad = 4 Very Sad/upset = 5 Don't know = 6	
030	How do you think your HIV test results influence your decision to have a child? <i>Ucinga ukuba iziphumo zovavanyo lwakho lwentsholongwane kagawulayo zingaba nefuthe elinjani kwizigqibo zakho zokufumana umntwana?</i>		
031	How do you think your HIV test results influence your partner's decision to have child? <i>Ucinga ukuba iziphumo zenu zovavanyo lwentsholongwane kagawulayo zingaba nefuthe elinjani kwizigqibo zeqabane lakho lokuba nomntwana?</i>		

Risk Reduction			
032	Did you and your partner talk about future plans regarding using condoms? <i>Nithethile wena neqabane lakho ngezicwangciso zexa elizayo malunga nokusebenzisa iikhondom?</i>	Yes/Ewe=1 No/ Hayi=0 → Go to question 34	
033	What was your decision on this matter? <i>Zibe yintoni izigqibo zenu ngalo mba?</i>		
034	Do you use a condom every time that you have sex with your partner? <i>Ingaba usebenzisa ikhondomu amaxesha onke usabelana nesondo Neqabane lakho?</i>	Yes/Ewe=1 No/ Hayi=0	
035	Have you had any new partners between the time that you had an HIV test and today?	Yes/Ewe=1	

	<i>Uke wananye amaqabane ukusukela kwelaxesha ubuhlolwe ngalo kude kube ngoku?</i>	No/ Hayi=0			
036	How many times have you had sex with your current partner in the past 1-month? <i>Nabelane izihlandlo ezingaphi ngesondo neqabane lakho.</i>	<table border="1" style="display: inline-table; width: 50px; height: 20px;"> <tr> <td style="width: 25px;"></td> <td style="width: 25px;"></td> </tr> </table>			
037	Did you use condoms with your current partner the last time you had sex? <i>Uyisebenzisile ikhondom neqabane langoku xa be nisebelana ngesondo okokugqibela?</i>	Yes/Ewe=1 No/ Hayi=0			

Relationship Status			
038	What good things did couple HIV counselling and testing do to your relationship? <i>Zeziphi izinto ezilungileyo ongazikhankanya ezenzwe zingcebiso novavanyo lwamaqabane kubudlelwane.</i>		
		<hr/> <hr/> <hr/>	
039	What bad things did couple HIV counselling and testing do to your relationship? <i>Zeziphi izinto ezingalunganga ezenzwe lucetyiso nohlolo lwentsholongwane kubudlelwane bakho neqabane lakho.</i>		
		<hr/> <hr/>	
040	Would you recommend the Couple Counselling and testing service to other couples or to your friends? <i>Ungachazela abanye abantu abathandanayo ngezinkonzo zocetyiso novavanyo.</i>	Yes/Ewe=1 No/ Hayi=0	
041	Considering your response above, Why would you do that? <i>Uqwalasele impendulo zakho ngentla, yintoni engabanga wenze njalo.</i>		
		<hr/> <hr/> <hr/>	
042	Do you have any conflicts in your relationship? <i>Niyaxabana kubudlelwano benu.</i>	Yes/Ewe=1 No/ Hayi=0 → Go to question 45	
043	Please explain to me what these conflicts are about <i>Nceda undichazele ukuba zingantoni ezi ngxabano.</i>		
		<hr/> <hr/> <hr/>	
044	Do you think these conflicts are because of your HIV test results? <i>Ucinga ezingxabano zibangwa ziziphumo zakho</i>	Yes=1 No=2 Don't know=3	

	<i>zentsholongwane.</i>		
045	Do you feel that your partner is angry with you for his/her test result? <i>Uva ngathi iqabane lakho linomsindo ngakuwe malunga neziphumo zalo.</i>	Yes=1 No=2 Don't know=3	
046	Are you angry with your partner for your test results? <i>Unomsindo ngakwiqabane lakho malunga neziphumo.</i>	Yes=1 No=2 Don't know=3	
047	Has your partner physically abused you since the HIV test? <i>Ingaba iqabane lakho likhe lakuhlukumeza emva kohlolo.</i>	Yes=1 No=0	
048	Has your partner verbally abused you since the HIV test? <i>Ingaba iqabane lakho likunukunezile emva kohlolo.</i>	Yes=1 No=0	

Mental Health Assessment

Now I would like to ask you about your mood and traumatic events you may have experienced in your life. This is important for us to be able to understand what emotional problems the community may be struggling with.

DURING THE PAST WEEK		Rarely or none of the time (Less than 1 day)	Some of the time (1 – 2 days)	Occasionally or Moderately (3 – 4 days)	Most of the time (5 -7 days)
D1	I have been worrying about things that usually don't worry me				
D2	I did not feel like eating, my appetite was poor				
D3	I felt that I could not shake off the blues(sadness) even with help from my family and friends				
D4	I felt that I was not as good as other people				
D5	I had trouble keeping my mind on what I was doing (concentration)				
D6	I felt depressed and sad				
D7	I felt that everything I did was an effort				
D8	I felt the future was hopeless				
D9	I thought my life has been a failure				
D10	I felt fearful/afraid				
D11	My sleep was restless				
D12	I was unhappy				
D13	I talked less than usual				
D14	I felt lonely				

D15	People were unfriendly				
D16	I did not enjoy life				
D17	I cried frequently for no reason				
D18	I felt sad				
D19	I felt that people disliked me				
D20	I could not get "going" during the day				
049	TOTAL SCORE				

Mental Health Assessment

Ngoku ndizakubuza ngendlela oziva ngayo nemeko zenkxwaleko okhe wanamava ngazo ebomini bakho. Oku kubalulekile kuthi ukuze siqonde

Ingxaki zomphemfumlo ezinokuba yingxaki ekuhlaleni .

KULE VEKI IPHELILEYO		Zinqabile/oka nye azikho Rarely or none of the time (Less than 1 day)	Maxa wambi Some of the time (1 – 2 days)	Manqaph- nqapha Occasionally or Moderately (3 – 4 days)	Amaxesha amaninzi Most of the time (5 -7 days)
D1	Ndizikhathaze ngezinto ezidla ngokungandikhathazi				
D2	Khange ndizive ndifuna kutya, andinamdla wokutya				
D3	Ndizive ndingenakho ukuyivuthulula inkxwaleko nangona abantu basekhaya nabahlobo bebendinceda				
D4	Ndaziva ukuba andilunganga njengabanye abantu				
D5	Ndibenengxaki yokugcina ingqondo yam kwinto endiyenzayo				
D6	Ndaba noxindzelelo lwengqondo kwakunye nosizi				
D7	Ndeva ukuba yonke into endiyenzayo ngumgudu				
D8	Kwakungekho themba ngekamva				
D9	Ndacinga ukuba ubomi bam abunalutho				
D10	Ndaziva ndisoyika				
D11	Ubuthongo bam babungazolanga				
D12	Ndandingonwabanga				
D13	Ukuthetha njengesiqhelo kwehla				
D14	Ndabalilolo				
D15	Abantu babengenabantu				

D16	Zangendibonwabele ubomi				
D17	Ndalila qho ngaphandle kwesizathu				
D18	Ndaziva ndilusizi				
D19	Ndaziva ngathi andithandwa ngabantu				
D20	Ndandingakwazi ukuqhubeka ngexesha lasemini				
116	TOTAL SCORE				

The interview is now finished. Thank you for your time.

University of Cape Town

Appendix 8: Confidentiality Agreement template

Infectious Disease Epidemiology Unit, University of Cape Town

Confidentiality Agreement

Title of Study: Dyad-related Factors in HIV Transmission

I/we intend to perform one or more of the following activities (check as appropriate):

Individual in-depth interviews with couples who have previously tested for HIV and who both know each other's HIV status

At one or more of the following institutions:

Manyanani@Empilisweni clinic (This is a University of Cape Town Research Clinic in Guguletu)

I/we will maintain patients' confidentiality and wherever possible data will be recorded anonymously.

I/we will not disclose individually-identifiable information except to researchers who are signatories to this agreement, and members of the Human Research Ethics Committee which is responsible for monitoring, auditing and reviewing the activities of researchers engaged in research involving human participants.

I/we will store the information in a secure place (that is locked cupboard).

I/we will destroy any identifiable information as soon as the purpose of data collection has been achieved.

I/we will report and publish research findings in a way that protects patients' identities.

I/we the undersigned acknowledge and accept these commitments:

Researcher's Name

Signature

Date

Appendix 9: Qualitative interview process guide for interviewers

DYAD RELATED FACTORS IN HIV PREVENTION

INTERVIEWER GUIDE

University of Cape Town

What is this project about?

Background

Currently, HIV prevention strategies focus on promoting the modification of individual behaviours that lead to an increase in susceptibility to and transmission of HIV infection. However, as the prevalence of the HIV/AIDS epidemic keeps rising, there has been recognition of the fact that partner-based approaches might be more effective in HIV prevention as compared to addressing individuals. This is because the majority of HIV transmission in Sub-Saharan Africa occurs in heterosexual partnerships. The study aims to obtain an understanding of some of the factors that contribute to HIV transmission in couples and the characteristics of the sexual partnerships that warrant focus on them as effective HIV prevention units.

The study will have a combination of qualitative and quantitative methodology. For the qualitative component, in-depth interviews will be done with at least 30 couples. This interview guide is for the qualitative study. The study population will be couples attending Couple HIV Counselling and Testing at the Manyanani@Empilisweni Clinic in Guguletu, Cape Town.

Why is this research important?

The research is important for a number of reasons. Firstly, HIV prevention has been focusing on changing individual behavior. But we now know that a lot of HIV transmission occurs in couples in stable partnerships. This knowledge prompted the promotion of Couple HIV Counselling and Testing (CHCT). However little information is known about how couples find the counselling and testing together and whether they do change their risk behavior afterwards.

Who is running this study?

This study is an additional smaller study to the clinical trial that is being run in The Infectious Disease Epidemiology Unit at the University of Cape Town. This study is part of the PhD studies for Dr Mercy Kamupira. The research is funded by SACEMA. The supervisor for Dr Kamupira's PhD thesis is Dr Landon Myer.

The person primarily responsible for this study is Mercy Kamupira. You yourselves as interviewers are also involved and responsible for the success of this study.

How is the study going to be run?

The research will be conducted at Manyanani@Empilisweni Clinic in Guguletu.

At this clinic there were couples who were counselled and tested for HIV up to 4 months ago. These couples were informed that there was going to be a study which they would be called to the clinic for a total of up to 40 of these couples will be interviewed. These couples are in 4 main groups:

1. Concordant negative couples
2. Concordant positive couples
3. Serodiscordant couples
4. Seroincident couples

Step 1

The interviewers in collaboration with the retention team will coordinate the arranging of interviews with couples. The couples will be asked to come to the clinic TOGETHER (ie both the male and the female members of the couple should be at the clinic for the interview on the same day).

Step 2

At the clinic, you will take the couple to a private room, introduce yourselves and give them information about the study. You will then assign the couple with a unique identification number (the process of assigning numbers is described in detail below).

Step 3

You will inform the couple that they will be interviewed separately. The male member of the couple together with the male interviewer will then move to another room. When the couple is separated, obtain informed consent from each member of the couple. Each person signs on two forms, one is given to the participant and the other is kept in the study file in alphabetical order.

Step 4

Explain to the participant that you will be recording the interview. Make sure that the door is closed and the "do not disturb sign is on the door"

Step 5

SWITCH ON THE RECORDER and start the interview

Step 6

At the end of the interview, thank the participant and direct them to the reception. Each individual participant will be compensated with R50 food voucher at the end of the interview at the reception.

Step 7

IMMEDIATELY after the interview go to the computer in the staffroom. Save the interview in the folder named (Dyad Qualitative Study). The name of the file is the SAME as the participant identification number

Step 8

In addition save this data on a flash drive provided.

Step 9

Lock the recorders and the flash drive in the metal cabinet in the staff office and log off the computer.

Step 10

Transcribing

Using the transcription kit provided, transcribe the interview. This is to be done by wearing the ear phones and listening to the interview. First write down the participant identification on the pad. Then word for word type the entire interview. File the transcribed record in the Transcription file.

Step 11

Lock up the transcription kits at the end of each day.

PARTICIPANT IDENTIFICATION AND NUMBERING OF COUPLES

The couples are in 4 categories namely:

1. Concordant negative couples
2. Concordant positive couples
3. Serodiscordant couples
4. Seroincident couples

The numbering will be as follows:

1. Concordant negative couples - number starts with CN
2. Concordant positive couples - number starts with CP
3. Serodiscordant couples - number starts with D
4. Seroincident couples - number starts with SC

The first concordant negative couple is CN001. After the number you add F or M. For example CN001F and CN001M.

The first concordant positive couple is CP001. After the number you add F or M. For example CP001F and CP001M.

The first SERODISCORDANT couple is D001. After the number you add F or M. For example D001F and D001M.

The first seroincident couple is SC001. After the number you add F or M. For example SC001F and SC001M.

CONSIDERATIONS:

1. Confidentiality

Please be aware that you will be hearing confidential information from the couples that you will be interviewing. You may even know some of these people. It is very important that you do not pass any information you hear during this research in any form to other people. Please respect all participants. Make the participants comfortable and highlight to them the importance of telling the truth.

2. Accuracy of information

You are expected to accurately obtain information from the participants and to accurately transcribe it. The investigator will be doing a daily and weekly quality control of the information.

3. Study materials

It is your responsibility as an interviewer to ensure that the recorders and transcription kits are safely locked away at the end of each day.

4. Counselling

If a person breaks down during the interview or indicates that they need additional counselling, please contact the counselors immediately.

5. Contacts:

If you would like to discuss any issues regarding the study, the contact person is: Dr Mercy Kamupira 082 974 6164
mercykzw@yahoo.com

Appendix 10: Qualitative interview guide

DYAD RELATED FACTORS IN HIV PREVENTION

Hello, my name is _____. I am going to ask you some questions to find out more about you and your partner as well as some questions on sexual practices. It is important that you answer the questions honestly; there are no right or wrong answers. You will not be judged based on your responses. If you don't know the answer to any of the questions I ask you, it is okay just tell me that you don't know. You do not have to answer a particular question if you do not want to.

Ukunceda ukuba sikhumbule into oyithethayo namhlanje, ndizakubhala amanqaku ndiphinde ndishicelele udlwanondlebe lwamhlanje kwisishiceleli (tape) Iqabane lakho aluzukwaziswa ngenkcukacha ozinikayo.

Do you have any questions before we start?

Unayo imibuzo onayo phambi kokuba siqale?

DEMOGRAPHIC & SOCIO-ECONOMIC CHARACTERISTICS			
I would like to ask you some general questions about yourself.			
0.1	How old are you? <i>Mingaphi iminyaka yakho?</i>		
0.2	Are you married to the partner that you came to the clinic with? <i>Utshatile neqabane owawuze nalo ekliniki?</i>		
0.3	For how long have you been having a sexual relationship with the current partner? <i>Lixesha elingakanani unobuhlobo besondo neliqabane langoku?</i>		
0.4	Do you live together with your current partner? <i>Uhlala kunye neliqabane unalo?</i>		
0.5	How many children do you have with this current partner? <i>Bangaphi abantwana onabo neliqabane langoku?</i>		
0.6	Which of the following best describes the housing in which you are currently living? <i>Kokuphi okuchaza ngcono indawo ohlala kuyo ngoku?</i>		
0.7	Are you currently working? <i>Uyasebenza okwangoku?</i>		

SECTION 1

To identify the experiences in and perceptions of couple HIV counselling and testing among couples

TOPIC	LEAD QUESTIONS	PROBES
	I am now going to ask you some questions regarding HIV testing	
1.1	<p>Many people have different feelings and opinions about testing for HIV. How do you think most people feel about having an HIV test?</p> <p><i>Uninzi lwabantu lenezimvo nemibono eyahlukileyo malunga novavanyo lwentsholongwane kagawulayo. Ucinga ukuba abantu abaninzi banezimvo ezithini ngokuhlololwa ingculazi?</i></p>	<p>What makes you say that?</p> <p>What are the positive things that people say about HIV tests?</p> <p>What are the negative things that people say about HIV tests?</p> <p><i>Yintoni ebangela utsho?</i></p> <p><i>Zeziphi izinto ezincomekayo ngabantu mayela nokuhlowela ingculazi?</i></p> <p><i>Zeziphi izinto zbazigxekayo abantu mayela nokuhlowela ingculaza?</i></p>
1.2	<p>How do you feel about having HIV tests in general?</p> <p><i>Uva njani mayela nokuhlowela ingculaza nje?</i></p>	<p>Why do you feel that way?</p> <p><i>Kutheni usiva ngalo ndlela?</i></p>
1.3	<p>How did you and your partner make the decision to come to test for HIV?</p> <p><i>Nisenze njani isigqibo sokuba nizokuhlowela ingculaza wean neqabane lakho?</i></p>	<p>Why did you decide to test as a couple?</p> <p>Who initiated the decision?</p> <p>What initiated the decision?</p> <p><i>Bekutheni ukuze nenze isigqibo sokuhlolwa njengamaqabane?</i></p> <p><i>Ngubani osungule eso sigqibo?</i></p> <p><i>Yintoni eyasungula eso sigqibo?</i></p>
1.4	<p>Was it easier for you or your partner to start the conversation on going for an HIV test together?</p> <p><i>Ingaba kwabalula kuwe okanye kwiqabane lakhe ukuqala incoko ngokuhlololwa ingculaza kunye?</i></p>	<p>Why do you say that?</p> <p>Can you describe for me how this conversation went?</p> <p><i>Kutheni usitsho nje?</i></p> <p><i>Ungandichazela ukuba yahamba njani le ncoko?</i></p>
1.5	<p>How long did it take you and your partner to decide on coming to the clinic for an HIV test?</p> <p><i>Nathatha ixesha elingakanani wena neqabane lakho ukugqiba ukuza kuhlololwa ingculaza?</i></p>	<p>Why did it take you that long to decide to come to test?</p> <p><i>Kwakutheni ukuze kuthathe ixesha elide ukugqiba ukuba nizokuhlolwa?</i></p>
1.6	<p>How long do you think couples normally take to decide to come for an HIV test?</p> <p><i>Nicinga ukuba amaqabane athatha ixesha elingakanani ukugqiba ukuba azokuhlololwa</i></p>	<p>Why do you say that?</p> <p><i>Kutheni usitshiso?</i></p>

	<i>ingculaza?</i>	
1.7	<p>What do you think motivates couples the most to test for HIV? <i>Ucinga ukuba yintoni enamandla okukhuthaza amaqabane ukuba bahlolelwe?</i></p>	<p>What is the most effective message to be given to couples to encourage them to attend couple counselling? <i>Ngowuphi owona mayelezo onamandla onokukhuthaza amaqabane andwendwele ingcebiso noukuhlolwa kwamaqabane?</i></p>
1.8	<p>Now referring to you and your partner, what motivated you to come to test as a couple? <i>Xa ndinokubhekisa kuwe neqabane lakho, yintoni eyanikhuthaza ukuba nize nzokuhlolwa njengamaqabane?</i></p>	
1.9	<p>Some people might not test for HIV because of various fears that they may have. What do you think are the fears that make people unable to test for HIV together? <i>Abanye abantu bangangahlolwela ingculaza yeendindi zoloyiko abanokubanzo. Ucinga ukuba zeziphi iindidi zoloyiko ezibangela abantu bangazukuhlowela ingculaza kunye?</i></p>	<p>Tell me more about these What fears did you have as a couple? If you were to tell your friends about HIV testing, how would you convince them to come and test? <i>Ukuba ubunokuxelela abahlobo bakho ngoukuhlolwela ingculaza, ubunokubaqinisekisa njani ukuba bazokuhlolwa?</i></p>
1.10	<p>Now let's talk about the time you came to Manyanani Clinic to test for HIV. Please describe for me the feelings before the couple counselling session <i>Ngoku ke masithethe ngexesha oweza ngalo eManyanani uzokuhlowela ingculaza. Nceda, undichazele ngendlela owawuziva ngayo phambi kweseshoni yokucetyiswa kwamaqabane.</i></p>	<p>Did you communicate these feelings with your partner? What was going through your mind as you waited to get the HIV test? <i>Nathetha ngezimvo zenu neqabane lakho? Yintoni eyayisengqondweni yakho ngexesha owawulindlele iziphumo zokuhlolwela ingculaza?</i></p>
1.11	<p>Please describe for me your feelings during the CHCT session. <i>Nceda undichazele ngezimvo zakho ngexesha lokucetyiswa nokuhlolwela ingculaza.</i></p>	<p>How did you experience the session? How did you think your partner felt? What did you like the most about the couple HIV counselling and testing session? What did you like the least about the CHCT session? What would you have wished to change? Did the counsellor adequately address all your concerns and fears? <i>Athi amava akho ngesheshoni? Wawucinga ukuba iqabane lakho lalisiva njani?</i></p>

		<p><i>Yeyiphi into owayithanda ngamandla mayela neseshoni yeengcebiso nokuhlolwa ingculaza?</i></p> <p><i>Yeyiphi into ongazange uyithande kakuhle mayela nengcebiso nokuhlolwa kwamaqabane?</i></p> <p><i>Yeyiphi into owawunokunqwenela ukuyitshintsha?</i></p> <p><i>Ingaba umcebisi wawisombulula ngendlela eyiyo zonke izidingo namaxhala akho?</i></p>
1.12	<p>What effect has CHCT had on your relationship?</p> <p><i>Yaba neziphumo zini ingcebiso nokuhlolwa ingculaza kubudlelwane bakho?</i></p>	<p>How would you describe your relationship with your partner before the HIV test?</p> <p>How would you describe your relationship now as compared to the period before the HIV test?</p> <p><i>Ungabuchaza njani ubuhlobo bakho neqabane lakho phambi kohlolo lwengculaza?</i></p> <p><i>Ungabuchaza njani ubedlelwane bakho neqabane lakho ngoku ukuthelekisa nexesha phambi kokuhlolwa ingculaza?</i></p>
1.13	<p>Did attending CHCT enable you to discuss issues around HIV that you normally don't talk about?</p> <p><i>Ingaba undwendwelo kwingcebiso nokuhlolwa kwamaqabane kwenza ukuba ubenakho ukuxoxa ngezinto ezingengculaza obukade ungathethi ngazo?</i></p>	<p>Tell me more about this</p> <p>Did you and your partner (just the two of you) discuss you HIV test results after the test?</p> <p>Have you disclosed your HIV status to other people/ friends or family?</p> <p><i>Ndixelele ngako konke oku</i></p> <p><i>Ingaba wena neqabane lakho(nina nodwa neqabane lakho) naxoxa</i></p> <p><i>Ngeziphumo zovavanyo lwentsholongwane kagawulayo emva kovavanyo?</i></p> <p><i>Ingaba ubudizile ubume bakho bentsholongwane kagawulayo kwabanye abantu izihlobo okanye umdeni wakho .</i></p>
1.14	<p>Please let me know how you would rate your CHCT experience</p> <p><i>Ndeca undazise ukuba ungalubeka kweliphi izinga uluvo lwakho ngengcebiso novavanyo lwamaqabane</i></p>	<p>Why would you say that?</p> <p><i>Kutheni uthetha oko?</i></p>

SECTION 2

TOPIC	LEAD QUESTIONS	PROBES
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I am now going to ask you some questions regarding future plans to have children		
2.1	<p>In the community in which you live what are the factors that influence people's desire to have children?</p> <p><i>Kumphakathi ohlala kuwo yeyiphi imiba ephemelela umnqweno wabantu wokuba nabantwana?</i></p>	<p>What do people say if a grown man has no children?</p> <p>What do people say if a woman past childbearing age has no children?</p> <p>Why do people say these things?</p> <p>What are the pressures that society exerts on people to have children?</p> <p><i>Bathini abantu xa indoda eseyikhulile ingenabantwana?</i></p>

		<p><i>Bathini abantu ngomfazi oseledlulelwe lixesha lokuzala abae enganabatwana?</i></p> <p><i>Kutheni abantu bethetha ezi zinto nje?</i></p> <p><i>Loluphi uxinzelelo olubekwa luluntu lokuba abantu babena bantwana?</i></p>
2.2	<p>What is the reaction of the community to a couple that is childless?</p> <p><i>Ekuhlaleni kuthatyathwa njani ukungabi nabantwana kwamaqabane?</i></p>	<p>Who is blamed?</p> <p>Do they get the same value as other couples with children?</p> <p><i>Ngubani ogxekwayo?</i></p> <p><i>Ingaba baxabiseke njengabanye abantu abazalayo?</i></p>
2.3	<p>Now let us talk about HIV and the issue of having children.</p> <p>What are the various things that people in the community say about HIV positive people having children?</p> <p><i>Ngoku masithethe ngentsholongwane kagawualyo nombwa wokufumana abantwana</i></p> <p><i>Zeziphi izinto ngezinto ezithethwa ngabantu basekuhlaleni ngabantu abanentsholongwane</i></p> <p><i>Kagawulayo mayela nokufumana abantwana?</i></p>	<p>How do you think most people in the community feel about HIV positive people having children?</p> <p><i>Ngubani ogxekwayo?</i></p> <p><i>Ingaba baxabiseke njengabanye abantu abazalayo?</i></p> <p><i>Ucinga ukuba uninzi lwabantu ekuhlaleni bayithatha njani /bayiva njani into yokubanabantwana kwabantu abanentsholongwane kagawulayo?</i></p>
2.4	<p>How do you feel about the issue of HIV positive people having children yourself?</p> <p><i>Uziva njani wena mayela nombwa wokufunyanwa kwabantwana ngabantu abentsholongwane kagawulayo?</i></p>	<p>Do you think HIV positive people should have children?</p> <p>Why do you feel that way?</p> <p><i>Ucinga ukuba abantu abentsholongwane kagawulayo bangabanabo abantwana?</i></p> <p><i>Kutheni uziva ngalo ndlela nje?</i></p>
2.5	<p>Have you and your partner ever talked about future plans regarding having more children?</p> <p><i>Ingaba wena neqabane lakho nake nathetha ngezicwangciso zokuba nabantwana kiwxa elizayo?</i></p>	<p>What was your decision on this matter?</p> <p>Do you want to have children in the future?</p> <p>Does your partner want to have children in the future?</p> <p><i>Yaba yintoni isigqibo senu ngalo mba?</i></p> <p><i>Uyafuna ukuba nabantwana kiwxa elizayo?</i></p> <p><i>Iqabane lakho liyafuna ukuba nabantwana kiwxa elizayo?</i></p>
2.6	<p>Now let us talk about you and your partner specifically.</p> <p>You recently had your HIV test as a couple and tested _____</p> <p>Do your HIV test results influence your decision to have a child?</p> <p><i>Ngoku masithethe ngawe neqabane lakho ngqo.</i></p> <p><i>Kutshanje nafuma iziphumo zentsholongwane kagawulayo njengamaqabane zaphuma zisithi -----</i></p> <p><i>Ingaba iziphumo zovavanyo lwenu lwentsholongwane kaagwulayo</i></p>	<p>In what ways?</p> <p><i>Ngaziphi iindlela?</i></p>

	<i>zinomthelela kwisigqibo sokufumana abantwana?</i>	
2.7	How do you think your desire to have a child would have changed if you were HIV positive/negative? <i>Ucinga ukuba umnqweno wakho wokufumana ukuba nomntwana ubunokutshintsa ukuba ubunentsholongwane kagawulayo okanye ungenayo?</i>	
2.8	How do you think it would change your desire to have a child if your partner were HIV positive/negative? <i>Ucinga ukuba ubunokutshintsh njani umnqweno woukuba nomntwana ukuba iqabane lake benintsholongwane kagawulayo okanye lingenayo?</i>	
2.9	Do you think/feel that your family or your partner's family is expecting you to have (more) children? <i>Ucinga okanye unoluvo lokuba abantu bakokwenu okanye abantu bakuloqbane lakho balindele ukuba ubenabantwana/nabanye abantwana?</i>	How strongly does your family's opinion influence your decision whether or not you want to have children? How strongly does your partner's family opinion influence your decision whether or not you want to have children? What would be the consequences to you or to your partner if you do not follow your family's expectations? <i>Unamandla kangakanani Umthelela wengcamango yabantu bakokwenu kwisigqwibo sakho soukuba nabantwana kwakho okanye ukungabi nabo?</i> <i>Unamandla kangakanani umthelela wengcamango yabantu beqabane lakho kwisigqibo sokuba nabantwana okanye ukungabi nabo?</i> <i>Zakuba yini iziphumo kuwe okanye kwiqabane lakho xa ungenkulandela umnqweno wabantu bakokwenu?</i>
2.10	Who are the other key people who might influence your decision to have children in the future? <i>Ngabaphi abanye abantu abaphambili abanokuba nomthelela kwisigqibo sokuba ubenabantwana kwixa elizayo?</i>	

SECTION 3

To determine the communication strategies in couples regarding matters of sexuality
UKufumanisa ngeendidi zonxulumano lwamaqabane mayela nemiba yesini.

TOPIC	LEAD QUESTIONS	PROBES
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3.1	<p>Many people find it difficult to talk about sex and sexual matters. How much do you talk about sex with other people?</p> <p><i>Abantu abaninzi bakufumana kunzima ukuthetha ngesondo nemiba yesesondo. Uthetha kangakanani ngesesondo nabanye abantu?</i></p>	<p>How comfortable do you feel to talk about sex? Who do you talk to about these things? What do you actually talk about? <i>Uziva ukhululeke kangakanani xa uthetha ngesesondo? Uthetha nabani ngezizinto? Yintoni kanye-kanye othethayo ngayo?</i></p>
3.2	<p>How much do you talk about sex with your partner?</p> <p><i>Uthetha kangakanani ngesesondo neqabane lakho?</i></p>	<p>How comfortable do you feel to talk about sex with your partner? What makes you comfortable or uncomfortable? What do you actually talk about with your partner? <i>Ukhululeka kangakanani Ukuthetha ngesesondo neqabane lakho? Yeyiphi into ekwenza ukhululeke okanye ungakhululeki? Yeyiphi eyona nto uthetha ngayo neqabane lakho?</i> What are some of the things about sex that you find difficult to speak to your partner about? <i>Zeziphi ezinye izinto ezingesondo ofumana kunzima ukuthetha ngazo neqabane lakho</i></p> <p><i>Probe:</i> Sexual pleasure Outside partners Sexual dysfunction STIs Condom use</p> <p>In these cases how do you ensure that you partner knows what you feel or think? <i>Gocagoca: Ubumnandi besondo Amaqabane angamanye Amkhwiniba ezesondo Izifo ezosulela ngokwabelana ngesondo Uksetyenziswa kwekhondom Kwezi zinto zingentla Uqininiseka njani ukuba iqabane lakho liyazi ukuba uziva njani okanye ucinga ntoni ngazo?</i></p>
3.4	<p>What do you think would help you to be able to communicate with your partner regarding these sexual issues?</p> <p><i>Ucinga ukuba yintoni enokukunceda ukuba ukwazi ukuncokola neqabane lakho mayela nezihloko ezinzima?</i></p>	

SECTION 4

To determine the risk reduction measures that couples take regarding HIV and STI prevention
 Ukufumanisa ngamanyathelo okunciphisa ingozi athathatywa ngamaqabane mayela
 nokukhusela intsholongwane kagawulayo kwakunye nezifo ezosulela ngokwabelana
 ngesondo.

TOPIC	LEAD QUESTIONS	PROBES
4.1	<p>What are some of the ways that you know that can help prevent the spread of HIV and STIs? <i>Zeziphi ezinye indlela ozaziyo ezinokunceda ukukhusela usasazeko lwentsholongwane kagawulayo nezifo esizifumana ngokwabelana ngesondo.</i></p>	<p><i>Probe:</i> Condom use Mutual monogamous relationships <i>Gocagoca:</i> Ukusetyenziswa kwekhondom Imvumelwano yobudlelwane beqabane elinye</p>
4.2	<p>What methods do you use as a couple to prevent the acquisition of STIs? <i>Zeziphi iindlela enizisebenzisayo njengamaqabane ukukhusela ukufunyanwa kwezifo zesondo?</i></p>	
4.3	<p>Tell me how common or uncommon you think condom use is? <i>Kuqheleke kangakanani okanye akuqhelekanga kangakani ukusetyenziswa kwekhondom?</i></p>	<p>Do you think a lot of people use condoms in the community? What do people say about condom use? What are the negative things that people say about condom use? What are the strange things that you have heard about condom use in the community? What are the main reasons that people use condoms? For those that do not use condoms, what do you think are the main reasons why they do not do so? <i>Probes:</i> Sexual pleasure Culture Unavailability of condoms Lack of knowledge on how to use condoms Male resistance to condom use <i>Ucinga ukuba baninzi abantu abasebenzisa iikhondom ekuhlakeni? Bathini abantu ngosetyenziso lweekhondom? Zeziphi izinto ezimbi ezithethwa ngabantu malunga nokusetyenziswa kwekhondom?</i> <i>Zeziphi izinto ezingaqhelekanga okhe waziva ekuhlaleni malunga Nokusetyenziswa kwekhondom. Zeziphi izizathu ezingundoqo ezibangela abantu basebenzise ikhondom?</i></p>

		<p><i>Kwabo bangazisebenzisiyo iikhondom, ucinga ukuba zeziphi izizathu ezingundoqo ezibangela bangayisebenzisi iikhondom.</i></p> <p><i>Gocagoca:</i> <i>Ukonwatyela kwesondo/</i> <i>Ubumnandi besondo</i> <i>Inkcubeko</i> <i>Ukungfumaneki kweekhondom</i> <i>Ukungabinalwazi lwendlela yokusebenzisa iikhondom</i> <i>Ukuqhahhalaza kwamadoda ekusebenziseni iikhondom</i></p>
4.4	<p>What do you think of condom use? <i>Ucinga ntoni ngokusetyenziswa kweekhondom?</i></p>	<p>Have you ever used condoms with your current partner? What are your own attitudes towards condom use? How would you rate the protective effect provided by condoms against HIV and against STIs? <i>Ubukhe wazisebenzisa iikhondom neliqabane lakho langoku?</i> <i>Zithini ezakho imbono ngokusetyenziswa kweekhondom.</i> <i>Ungalubeka koluphi uluhlu ukhuseleko lwentsholongwane kagawulayo nezifo zokwabelana ngesondo olubangwa kukusetyenziswa kweekhondom.</i></p>
4.5	<p>Are you currently using condoms with your partner? <i>Ingaba kongwangoku uyazisebenzisa iikhondom neqabane lakho?</i></p>	<p>Please explain to me: How often you use condoms Male or female condoms Where you obtain the condoms from How many you have at any given time in the house Whose responsibility it is to maintain a supply of condoms in the house <i>Nceda undicacisele:</i> Uzisebenzisa kangakanani iikhondom Eyamadoda okanye eyabafazi Uzifumana phi iikhondom Zingaphi ngexesha onazo endlwini Kuxhomekeke kubani ukugcinwa kweekhondom zikhona endlwini</p>
4.6	<p>Do you and your partner ever talk about protecting yourselves from sexually transmitted diseases? <i>Ingaba wena neqabane lakho niyathetha ngokuzikhusela kwizifo zokwasulelana ngesondo?</i></p>	<p>How comfortable is it for you and your partner to talk about STDs together? Why? <i>Ukonwabela kangakanani wena neqabane lakho ukuthetha ngezifo zokwabelana ngesondo kunye? Ngoba?</i></p>
4.7	<p>What are your plans as a couple regarding the issue of additional partners? <i>Zithini izicwangciso zenu njengamaqabane malunga nombamaqabane angamanye?</i></p>	<p>Do you ever discuss the issue of faithfulness to one another and what is your decision on this? <i>Ingaba nikhe nixoxe ngomba wokuthembeka omnye kwaye sesiphi isigqibo senu koko?</i></p>

SECTION 5

To identify the sexuality norms and practices among couples and how knowledge of HIV status influences the sexual behaviours

TOPIC	LEAD QUESTIONS	PROBES
5.1	<p>What do you think determines the choice of a sexual partner? <i>Yintoni eqinisekisa ukhetho lweqabane lesondo?</i></p>	<p>What things are important to you when you choose somebody to have a sexual relationship with? Which of these are the most important to you? Why do you say this? How important are these factors to you: age of partner, HIV status, wealth, alcohol consumption? <i>Zintoni ezibalulekileyo kuwe xa ukhetha umntu onokuba nobuhlobo naye ngokwezesondo? Zeziphi kwezi ezibalulekileyo kuwe? Kuthini usitsho? Abalukeke njani lamabakala kuwe: Ubudala beqabane, Ubume <i>bentsholongwane</i> kagawulayo, ubutyebi, ukusetyenziswa kotywala?</i></p>
5.2	<p>What do you think about alcohol consumption? <i>Ucinga ntoni ngokuselwa kotywala?</i></p>	<p>Do you yourself consume alcohol and how do you feel about it?- explore the advantages and disadvantages of alcohol consumption What do you feel about having a partner who consumes alcohol –explore the advantages and disadvantages of partner’s alcohol consumption Ingaba wena uyasela kwaye uziva njani ngalo nto ? Jonga nzulu izinto ezonwabisa nezingonwabisiyo ekuseleni uytwala. Uva njani nokuba neqbane elisela uytwala? Jonga nzulu izinto ezonwabisa nezingonwabisiyo kwiqabane elisela uytwala.</p>
5.3	<p>Now let us talk about alcohol intake and sexual behaviour; <i>Ngoku masithethe ngokusela utywala nendlela yokuziphatha ngokwasecantsini</i></p>	<p>Does alcohol intake influence the type of partner you would choose-why do you say that? Let us talk about the use of alcohol and sexual decision making, physical abuse, condom use <i>Ingaba ukusetyenziswa kotywala kungabanefuthe ekuchongeni kwakho uhlobo lweqabane –kutheni usitsho nje? Masithethe ngokusetyenziswa kotywala nesigqibo esithatwayo ngezesondo, noxhatshazo lomzimba ,nokusetyenziswa kwekhondom.</i></p>
5.4	<p>How common is it for people in the community to have more than one sexual partner? <i>Kuxhapeke kangakanani ukuba abantu basekuhlaleni babenamaqabane angaphezu kwesinye?</i></p>	<p>Why is that the case? <i>Kutheni kunjalo nje?</i></p>
5.5	<p>How many regular and non regular sexual partners do you have and why? <i>Mangaphi amaqabane asisigxina nangesosigxina</i></p>	<p>What are the factors that contribute to your having one/more than one partner? <i>Probes:</i> Partner away from home Material gain</p>

	<i>onawo kwaye kutheni?</i>	Partner pregnant Sexual dysfunction in partner Illness in partner <i>Yeyiphi imiba eyongezelela ekubeni ubeneqabane elinye okanye ngaphezulu?</i> <i>Goca-goca:</i> <i>Iqaba likude ekhaya kukho inzuzo yezinto iqabane likhulelwe ukungasebenzi kakuhle kwezesondo kwiqabane</i> <i>Ukugula kweqabane</i>
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SECTION 6

To determine the relationship dynamics associated with HIV sero-conversion

TOPIC	LEAD QUESTIONS	PROBES
6.1	Now let us talk about the change in the HIV status in your relationship. The first time you tested as a couple at the clinic you had different HIV test results, you were HIV ---- and your partner was HIV____ After some time of follow-up you/ your partner became HIV positive. Can you explain to me in detail how that change of status felt and how it affected your relationship.	How do you think the HIV status change happened? Probe- Were you using male/female condoms correctly and consistently? (If No- why not? Probe- partner resistance, lack of availability of condoms, lack of knowledge on how to use condoms) Did you always have a supply of condoms available? What was the immediate reaction to the news that you/ your partner have become HIV infected? Probe- Was there blame in the relationship? Did you feel guilty about it?
6.2	Did this change in HIV status change anything in your relationship?	How did you relate to each other as a couple before you/ your partner became HIV positive? What were the changes after you/ your partner became HIV positive? Probe: Love Support Sexual encounters (frequency and use of condoms?)
6.3	The first time you tested as a couple at the clinic when you had different results, ie one HIV positive and the other HIV negative, did you disclose your HIV results to any other people? After you/your partner became HIV positive, did you disclose this HIV result to any people?	Who did you disclose to? What did they say about your status Who did you disclose to? Are they the same people that you disclosed to the first time you tested together? What did they say?

The interview is now finished. Thank you for your time and for sharing your personal experiences with me. Do you have any questions that you would like to ask me?

Appendix 11: UCT ethics approval

UNIVERSITY OF CAPE TOWN



Health Sciences Faculty
Research Ethics Committee
Room E52-24 Grootte Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6338 • Facsimile [021] 406 6411
e-mail: preaward@curie.uct.ac.za

12 July 2006

REC REF: 120/2006

Dr M Kamupira
Public Health & Family Medicine

Dear Dr Kamupira

PROJECT TITLE: DYAD RELATED FACTORS IN HIV PREVENTION

Thank you for your letter to the Research Ethics Committee dated 04 July 2006.

It is a pleasure to inform you that the Ethics Committee has **formally approved** the above-mentioned study on the 10 July 2006.

Your comments to the queries raised are noted with thanks.

Please quote the REC. REF in all your correspondence.

Yours sincerely

DR. M. BLOCKMAN
CHAIRPERSON, HSF HUMAN ETHICS

Appendix 12: Informed consent form: Quantitative study

DYAD RELATED FACTORS IN HIV PREVENTION

INFORMED CONSENT FOR COUPLES ATTENDING COUPLE HIV COUNSELLING AND TESTING

QUANTITATIVE STUDY

We are gathering some information about the characteristics of the couples that attend Couple HIV Counselling and Testing at Manyanani@Empilisweni Clinic as well as the experiences of the couples in couple HIV counselling and testing. The purpose of this study is to obtain an understanding of some of the factors that contribute to HIV transmission in couples and the characteristics of the sexual partnerships that warrant focus on them as effective HIV prevention units. We would like to invite you to participate in this study.

Procedures

If you agree to take part in this study, we will request you to participate in an interview with one of the study staff. This interview will take place in a room within the clinic and it will be between you and the study staff member. Your partner will not participate in the same interview. The same or a different study staff member will interview your partner separately. Your responses will not be discussed with your partner. Your partner's responses will not be discussed with you. Specifically, the interview will involve you answering questions for about 30 minutes before your HIV test. The questions will be to know more about you, your family and your relationship with your partner.

We will also request you to answer some more questions for about 10 minutes after you have received your HIV test results and post-test counselling. The questions that we will ask you at this point will be about your experiences in the Couple HIV Counselling and testing session.

We will then ask you whether we can interview you again one to two months from today. This interview that we will do in one to two months' time is to find out from you and your partner how your relationship is after knowledge of your HIV status. We will also ask you about your plans regarding having children in the future. If you agree to be interviewed a month to two months after today's test, we will ask you to provide us with your locator information that consists of your contact telephone number and your physical address so that we can remind you of this follow-up interview.

All the information that you give will be recorded on the questionnaires. Your name is not recorded anywhere on this questionnaire. No one else except the research team will have access to the completed questionnaire. All of the information that you provide will be kept completely private and confidential and will only be viewed and used by the researchers on this project.

Risks and discomforts

Some of the questions that we are going to ask you may be personal and sensitive. These are questions on your financial situation, your sexual health, your current and past sexual activity and your desire to have children in the future. You may feel uncomfortable about sharing some of these topics. You have the right to decide not to answer any questions without any penalty if you feel uncomfortable.

Benefits

There will be no direct benefit to you for participating in this study. However, the information you give may help us to improve Couple HIV Counselling and Testing services.

Confidentiality

All of the information that you provide will be kept completely confidential and will only be viewed and used by the researchers on this project. Information about you will be stored in file

that does not have your name on it, but a number assigned to it instead. The name associated with the number assigned to each file will be kept under lock and key and will not be divulged to anyone. Your locator information will also be kept under lock and key.

Right to refuse or withdraw

You have the right to decide not to participate in the study, to refuse to answer any questions, or to withdraw from the study at any time without any penalty.

Voluntary participation

Your participation in this study is voluntary. Whether or not you decide to participate in this study will not affect your health care at this or any other clinic now or in the future.

Who to contact

If you have any questions about this study we are happy to answer these questions now. Please feel free to ask me for any points that you need to be clarified about this study. If you have any questions later you may contact: Dr Mercy Kamupira, at Manyanani@Empilisweni Clinic at the following number: 021 633 5146; email kamupira@uct.ecws.org.za

This proposal has been reviewed and approved by the University of Cape Town's research ethics committee, whose task is to make sure that research participants are protected from harm. If you wish to find out more about the committee contact Dr M Blockman, Room E52-24 Groote Schuur Hospital Old Main Building; Tel: 021 406 6338

University of Cape Town

Participant volunteer declaration

I have understood that the purpose of the study is to better understand the characteristics of the couples that attend Couple HIV Counselling and Testing at Manyanani@Empilisweni as well as the to obtain understanding of the factors that impact on HIV transmission in couples.

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have been answered to my satisfaction. I consent voluntarily to participate as a subject in this study and understand that I have the right to withdraw from the study at any time without in any way affecting my medical care at this or any other clinic now or in the future.

Please indicate your consent with your name and signature,

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Name of volunteer	Signature of volunteer	Date
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Name of Interviewer	Signature Interviewer	Date
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University of Cape Town

Appendix 13: Informed consent form: Qualitative study

INFORMED CONSENT FOR COUPLES ATTENDING COUPLE HIV COUNSELLING AND TESTING

QUALITATIVE STUDY

We are gathering some information about the characteristics of the couples that attend Couple HIV Counselling and Testing at Manyanani@Empilisweni Clinic as well as the experiences of the couples in couple HIV counselling and testing. The purpose of this study is to obtain an understanding of some of the factors that contribute to HIV transmission in couples and the characteristics of the sexual partnerships that warrant focus on them as effective HIV prevention units. We would like to invite you to participate in this study.

Procedures

If you agree to take part in this study, we will request you to participate in an interview with one of the study staff. The interview will involve discussing about your HIV status the last time you tested at Manyanani clinic. In order to do this, we will need to know what your HIV status was. Therefore, before we proceed with the interview, we will ask for the permission from you to check the records in order to know your status. If you do not want us to know your HIV status, we will not proceed with the interview. Whether or not you decide to participate in this study will not affect your health care at this or any other clinic now or in the future.

This interview will take place in a room within the clinic and it will be between you and the study staff member. Your partner will not participate in the same interview. The same or a different study staff member will interview your partner separately. Your responses will not be discussed with your partner. Your partner's responses will not be discussed with you.

Specifically, the interview will involve you answering questions for about 45 minutes. The questions will be to know more about you, your relationship with your partner and your experiences in Couple HIV counselling and Testing. Should you agree to participate, to help us remember what you say here today, I will be taking notes and will also be recording today's interview session on tape.

Risks and discomforts

Some of the questions that we are going to ask you may be personal and sensitive. These are questions on your financial situation, your sexual health, your current and past sexual activity and your desire to have children in the future. You may feel uncomfortable about sharing some of these topics. You have the right to decide not to answer any questions without any penalty if you feel uncomfortable.

Benefits

There will be no direct benefit to you for participating in this study. However, the information you give may help us to improve Couple HIV Counselling and Testing services.

Confidentiality

All of the information that you provide will be kept completely confidential and will only be viewed and used by the researchers on this project. Information about you will be stored in file that does not have your name on it, but a number assigned to it instead. The name associated with the number assigned to each file will be kept under lock and key and will not be divulged to anyone. Only a number will be used to identify, the tape that is used for recording this interview. Your name will not be on it. The interview will only be listened to by the researchers and not by anyone else. In writing the results of this study some remarks or sentences that you

make may be in the written research findings but this will be quoted without any features that can identify you.

Right to refuse or withdraw

You have the right to decide not to participate in the study, to refuse to answer any questions, or to withdraw from the study at any time without any penalty.

Voluntary participation

Your participation in this study is voluntary. Whether or not you decide to participate in this study will not affect your health care at this or any other clinic now or in the future.

Who to contact

If you have any questions about this study we are happy to answer these questions now. Please feel free to ask me for any points that you need to be clarified about this study. If you have any questions later you may contact: Dr Mercy Kamupira, at Manyanani@Empilisweni Clinic at the following number: 021 633 5146; email kamupira@uct.ecws.org.za

This proposal has been reviewed and approved by the University of Cape town' research ethics committee, whose task is to make sure that research participants are protected from harm. If you wish to find out more about the committee contact Dr M Blockman, Room E52-24 Groote Schuur Hospital Old Main Building; Tel: 021 406 6338

University of Cape Town

Participant volunteer declaration

I have understood that the purpose of the study is to better understand the characteristics of the couples that attend Couple HIV Counselling and Testing at Manyanani@Empilisweni as well as the to obtain understanding of the factors that impact on HIV transmission in couples.

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have been answered to my satisfaction. I consent voluntarily to participate as a subject in this study and understand that I have the right to withdraw from the study at any time without in any way affecting my medical care at this or any other clinic now or in the future.

Please indicate your consent with your name and signature,

Name of volunteer	Signature of volunteer	Date
Name of Interviewer	Signature Interviewer	Date

Appendix 14: List of referral places

NAME OF ORGANISATION	ADDRESS	TELEPHONE/ FAX .NO
AIDS LEGAL NETWORK (ALN)	P.O.BOX 6358 ROGGEBAAI 8012	Tel (021) 423 9254 Fax (021) 423 0891
NATIONAL AIDS CONVENTION OF SOUTH AFRICA	P.O.BOX 451 CAPE TOWN 8000	Tel (021) 423 3274
TREATMENT ACTION CAMPAIGN (TAC)	TOWN ONE PROPERTIES SULAMI DRIVE SITEB K/LISTHA 7784	Tel (021) 364 54 89 Fax (021) 361 7051
ATTIC AIDS INFORMATION	P.O.BOX 379 PLUM STEAD 7801	Tel (021) 797 3327 Fax (021) 797 3356
AIDS - HELP-LINE		TOLL FREE NO 08000 123 22
WOMEN HELP- LINE		TOLL FREE NO 0800 150 150

CHILD-LINE		TOLL FREE NO 08000 555 55
WOLANANI SUPPORT GROUP	EYONA SHOPPING COMPLEX GUGULETU	TEL(021) 633 8657
CHILD PROTECTION		TEL(021) 5922601
DEPRESSION		TEL(021) 8841797

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