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COUPLES-BASED VOLUNTARY HIV COUNSELING AND TESTING FOR MSM IN SOUTH AFRICA

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By

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B.A. with Honors
The Ohio State University
2008

Thesis Committee Co-Chairs:
Rob Stephenson, PhD, MSc and Patrick Sullivan, DVM, PhD

An abstract of
a thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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ABSTRACT

COUPLES-BASED VOLUNTARY HIV COUNSELING AND TESTING FOR MSM IN SOUTH AFRICA

By Christopher Rentsch

Couples-based voluntary HIV counseling and testing (CVCT) allows couples to receive their HIV test results together and has been demonstrated to be effective in reducing HIV transmission, increasing and sustaining condom use, and reducing sexual risk-taking among at-risk heterosexual couples. However, the acceptability of CVCT among MSM has yet to be evaluated in an African setting. This thesis utilizes a mixed-methods approach to determine if CVCT would be a viable option for an HIV testing service among MSM in South Africa, and how the service would need to be structured in order to attract the most MSM in this setting. Using online advertisements, quantitative data were collected from 486 MSM, who were 18 years of age or older with a current residence in South Africa and had at least one male sex partner in the previous 12 months. The analysis examined associations between individual characteristics and willingness to utilize CVCT services. Concurrently, seven focus group discussions and twenty-nine in-depth interviews were used to investigate the attitudes toward CVCT among MSM in Cape Town, South Africa. The willingness to utilize CVCT services was compellingly high (89%). The results from the focus groups and interviews further exhibit nearly universal acceptance of CVCT. Participants were particularly attracted to the counseling components of the service, stating that these would allow for the couple to increase their commitment and to explore methods of how to effectively reduce their risk of acquiring or transmitting HIV in the presence of a trained counselor. Several studies show the discontent MSM currently have with public and government clinics offering HIV testing services, which may be a large factor of the low awareness of sero-status among MSM in South Africa. Having the knowledge of a partner's sero-status is possibly one of the most effective strategies to reduce the risk of HIV infection due to the elimination of risk that comes from assuming or guessing a partner's sero-status. These results suggest CVCT would be highly welcomed and could work to fill the significant lack of services acceptable by and accessible to MSM in South Africa.

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"We ask ourselves, 'Who am I to be brilliant, gorgeous, talented, and fabulous?' Actually, who are you *not* to be?" – M. Williamson

TABLE OF CONTENTS

TABLES AND FIGURES

Found within manuscripts

Not found within manuscripts

ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CVCT	Couples Voluntary HIV Counseling and Testing
HIV	Human Immunodeficiency Virus
LGBT	Lesbian, Gay, Bisexual, and Transgender
MSM	Men who have sex with men
NACOSA	National AIDS Convention of South Africa
NSP	*HIV & AIDS and STI Strategic Plan for South Africa, 2007-2011*
STI	Sexually Transmitted Infections
UAI	Unprotected anal intercourse
VCT	Individual Voluntary HIV Counseling and Testing

PREAMBLE

CONTEXT OF THE TERM 'MSM'

In the mid-1990s, the term MSM was created to reduce the stigmatization against gay, bisexual, transgendered and self-identified heterosexual men who have sex with men by placing emphasis on sexual behavior rather than sexual identity (1, 2). The term MSM refers to any man who has sex with other men, regardless of their sexual identity or whether they have sex with only men or both men and women (2, 3). Thus, MSM is a term that encapsulates the broad spectrum of men who have sex with men.

This thesis focuses on MSM populations as inclusion into both studies presented was based on self-reported behaviors and not sexual identity.

CHAPTER 1: INTRODUCTION

PROJECT BACKGROUND

Three decades after its first reported appearance, human immunodeficiency virus (HIV) is still a major public health issue around the world (3). Sub-Saharan Africa bears most of the burden of the disease, with 22.5 million people, 68% of the global total, living with HIV (3). With an estimated 5.6 million people living with HIV in 2009, South Africa's epidemic remains the largest in the world (3-7). Now that the national prevalence of HIV in the general population has been shown to be stabilizing around 17% (in 2008, 16.9%, 95%CI 15.5, 18.4%) for persons aged 15-49 years (4, 7, 8), focused studies on high-risk populations must be conducted in order to further reduce the possibility of transmission to future generations.

The population of men who have sex with men (MSM) has long been overlooked in HIV prevention and research in Africa, and arguably around the world. Within Africa, there are strong beliefs that male-male sexual behavior is "un-African" (9), which may act to further stigmatize the MSM population and limit the number of men willing to disclose the occurrence of these sexual partnerships. The size of the MSM population in South Africa is unknown; subsequently, there are no valid national estimates for HIV prevalence in this at-risk population. Despite this, there has been evidence to show that the prevalence of HIV may be considerably higher among MSM than in the general population (10-12). Localized studies demonstrate HIV prevalence estimates ranging from 12 to 47% (4, 13-15), which the variability is most likely ascribed to

the studies focusing on various subpopulations of MSM and the relatively small sample sizes accessed for analysis. Thus, understanding the social contexts and sexual behaviors of MSM in such a setting will assist in grasping the disconnect between the HIV epidemics in MSM and the general population.

Couples voluntary HIV counseling and testing (CVCT) is a strategy that has been used in Africa for over 20 years among heterosexual couples, and is considered to be a "high leverage HIV prevention intervention" in that setting (16). A typical CVCT service allows couples to participate in the whole cycle of voluntary HIV counseling and testing (VCT) together: they receive pretest information, pretest counseling and risk ascertainment, the results of HIV testing, and posttest counseling. Previous studies with heterosexual sero-discordant couples have demonstrated CVCT to be effective in reducing HIV transmission within the dyad, as well as in sustaining condom use after the service (16-18). Even though most new HIV infections within male-male couples in the United States were attributed to transmission from an HIV-positive main sex partner (19), the current model for CVCT has never been validated for use by same-sex couples in an African setting.

As studies continually substantiate a heightened HIV epidemic among MSM during a stabilizing epidemic in the general population of South Africa, CVCT services geared toward male-male couples provide unique opportunities to potentially reduce sexual exposures to HIV and curb HIV transmission within this high-risk population.

AIMS AND OBJECTIVES

The main objective of this thesis is to examine the attitudes and willingness toward CVCT services among MSM in South Africa. The specific aims of this thesis are detailed below:

- To quantify the associations with the willingness to utilize CVCT services in order to better understand who and why MSM may utilize CVCT services
- To identify perceived barriers and facilitators that may shape an individual/couple's likelihood of utilizing CVCT services
- To explore perceptions of how CVCT may lead to changes in high-risk sexual behaviors
- To identify changes necessary to the current mode of delivering CVCT to make services acceptable and appropriate for same-sex male couples in Cape Town, South Africa

COUNTRY CONTEXT: SOUTH AFRICA

Location and geographic description

South Africa is the southern-most country in the continent of Africa (Figure 1.1). Spanning over 1.2 million square kilometers, it is one of Africa's largest countries (20). It is comprised of nine provinces and is bordered by the Atlantic Ocean to the west and south and by the Indian Ocean to the east, allowing for numerous large port cities, which are known to have a relatively

high HIV prevalence due to an increased presence of transient populations (21, 22).

Figure 1.1. Map of South Africa

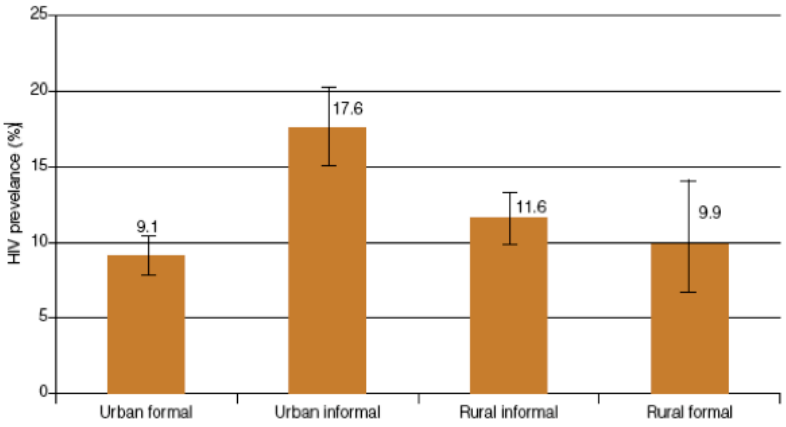
Source: maps.com

Five countries border South Africa to the north, including Namibia, Botswana, Zimbabwe, Mozambique, and Swaziland. The country entirely surrounds Lesotho. Adult (15-49 years) HIV prevalence in 2009 of these border countries range from 11.5% in Mozambique to 25.9% in Swaziland (23). This conglomerate of countries with generalized epidemics may also hold the same finding throughout the African continent of an unlinked epidemic between MSM and the general population (24, 25); however, evidence in these countries to suggest these patterns are either lacking or non-existent.

Demographic and population characteristics

The population size of South Africa was estimated around 50,000,000 in 2010 (26), which was composed of 79.4% black African, 9.2% white, 8.8% coloured, and 2.6% Indian/Asian (26). South Africa has 11 official languages (27) – Afrikaans, English, Ndebele, Northern Sotho, Sotho, Swazi, Tswana, Tsonga, Venda, Xhosa, and Zulu – with most of the population able to speak more than one language. The most common first languages are Zulu (24%), Xhosa (18%), and Afrikaans (13%) (26), but English is predominately spoken in media and understood by many as a second language. Zulu and Xhosa are languages used primarily by black populations, while white and coloured populations mostly speak Afrikaans. The proportion of the population living in urban areas is about 60% and the estimated annual rate of urbanization change between 2010 and 2015 is 1.2% (28). Due to the significantly higher prevalence of HIV in townships than in urban areas (29) (Figure 1.2), increased urbanization may introduce a pathway for HIV to be transmitted between the two locality types.

Figure 1.2. HIV prevalence among respondents aged 2 years and older by locality type, 2005



Source: Shisana, 2005

Specifically in Cape Town, most HIV testing facilities catered to MSM are located near the city center; however, this may pose an issue to those in townships who must take time and pay for transport to access these services (Figure 1.3).

Figure 1.3. Map of Cape Town – distances between townships and city

Source: Adapted from Mappery.com

Currently, population estimates for MSM are unknown; however, if the assumption is made that male-male sex occurs in 3% of adult males, "a high prevalence of HIV in MSM may contribute between 10-20% of all prevalent HIV infections in the general population" (9). Using the estimated sex ratio of 1.02 males per female for those aged between 15 and 65 (26), this would amount to around 765,000 adult MSM who may contribute to the general HIV epidemic.

Out of total government expenditures, South Africa spends about 10% on health (30, 31). The combined under-five mortality rate is now around 69 per 1000 live births (23), with nearly 60% of deaths among these children being ascribed to HIV/AIDS (32). The under-five mortality rate for the rural

population is nearly twice as high as the under-five mortality rate for the urban population (71 per 1000 live births and 43 per 1000 live births, respectively) (32), which highlights the need of appropriate interventions in these resource-poor areas. A total number of 350,000 deaths and an estimated number of 1,400,000 children (ages 0-17) have been orphaned due to AIDS in 2007 (33).

Historical aspects of South African HIV epidemics

In 1983, the *South African Medical Journal* reported the first two cases of AIDS in South Africa. Through 1987, the main burden of AIDS was found in MSM, blood transfusion recipients and hemophiliacs. Molecular epidemiology studies show that this first epidemic among MSM was associated with HIV subtype B. Since then, HIV in South Africa transformed into a generalized epidemic associated with HIV subtype C, similarly to border countries Zimbabwe and Botswana. In 1997, an investigation in Cape Town subtyped the blood samples of 61 HIV-positive patients, of whom 26 were MSM and 32 were heterosexual. The results showed 96% of the MSM had subtype B and 81% of the heterosexuals had subtype C, affirming the separate epidemics (34). Currently, over 95% of HIV in South Africa is subtype C (35), suggesting the generalized epidemic originated from regional spread rather than being a consequence of the first epidemic among MSM and provides further evidence to the unlinked epidemics between MSM and the general population (24, 25, 34). The emergence of the generalized epidemic overshadowed the epidemic among MSM, and

priority was placed on HIV surveillance and intervention programs for heterosexual and vertical transmission (36). Thus, attention must be given to MSM, and interventions must also be forged to meet the unique needs of this population.

Politics and policies

Historically, government leaders, including presidents and health officials, have provided much controversy regarding the response to HIV and AIDS within South Africa, which have had prolonged effects on the prevention and care of individuals living with HIV. In the mid-1980s, the epidemic was seen foremost as a "gay epidemic", which resulted in a minimal response from the then apartheid government. Founded in 1993, the National AIDS Convention of South Africa (NACOSA) forged a strategic plan adopted by the Mandela government that was subsequently undermined due to a spreading belief that the toxic industrial solvent Virodene was a cure for AIDS. The second post-apartheid democratic elections occurred in 1999, which placed President Mbeki and his Minister of Health, Manto Tshabalala-Msimang in power to control the government's response to the growing epidemic. Alas, these two officials were self-proclaimed "AIDS denialists," meaning they believed that HIV does not cause AIDS. However, due to much pressure, the Mbeki government surprised many after it decided to provide free antiretroviral therapy in public health facilities in 2003. By 2007, a five-year National Strategic Plan for AIDS and TB

(NSP) was created and adopted by the South African National AIDS Council (36), which was the first governmental document to mention the needs and involvement in HIV policies and programs of MSM. Then, in 2008, President Mbeki was forced to resign, which allowed for the entrance of President-elect Jacob Zuma, and his appointed Minister of Health Dr. Aaron Motsoaledi. Both government officials have expressed commitment to the NSP, and have ushered in a new hope for the South African response to their HIV epidemic.

RESEARCH SETTING

Not only does South Africa have one of the largest, most visible lesbian, gay, bisexual, and transgender (LGBT) populations in the African continent, but the country is also one of the few in the world to legally protect all the rights of this population. However, even with constitutional equality, there is still a significant amount of stigma and taboo surrounding the issues of same-sex behavior. One study illustrated that ethics committees and political leaders were reluctant to address the issue of MSM vulnerability (37), which serves to impede the growth of vital research on MSM in African settings. Nevertheless, this thesis is dedicated to examine the potential utilization of CVCT services, as well as determine the appearance and structure of the service that will minimize the possibility of prejudice whilst maximize the usability and benefit for MSM in South Africa.

The qualitative research for this thesis was completed in collaboration with Cape-Town based Health4Men, a sexual health program of the Anova Health Institute. The program specializes in offering free medical and psychosocial services to men in underserved populations, including gay-identifying and non-gay-identifying MSM, youth, sex workers, and men from disadvantaged communities. Health4Men launched a safe-sex campaign entitled "Play Nice," which was the first large-scale campaign specifically geared to distribute HIV-related messaging to the MSM community.

SUMMARY

This thesis begins by examining the current HIV epidemic among MSM in South Africa and around the world. Chapter two will review and critique the literature on the epidemiology of HIV among MSM followed by the presentation of recent data that illustrates the dyadic transmission of HIV. A review of interventions currently used by MSM to curb new infections will be discussed and how CVCT provides unique benefits to be used in addition to other currently used HIV testing services. Finally, a theoretical basis for CVCT will be reviewed, which is based on Lewis' Couple Interdependence Theory (38).

Chapter three will be a stand-alone manuscript that presents the quantitative data aimed to determine the associations between willingness to utilize CVCT services across several individual characteristics. This manuscript,

given its sample size and limited heterogeneity within study participants, will be submitted as a shorter research and practice piece for publication in *AIDS Care*.

Chapter four will also be a stand-alone manuscript that presents the qualitative data aimed to describe the attitudes toward CVCT among MSM in Cape Town, South Africa. This manuscript will be submitted as an original research article for publication in *AIDS and Behavior*.

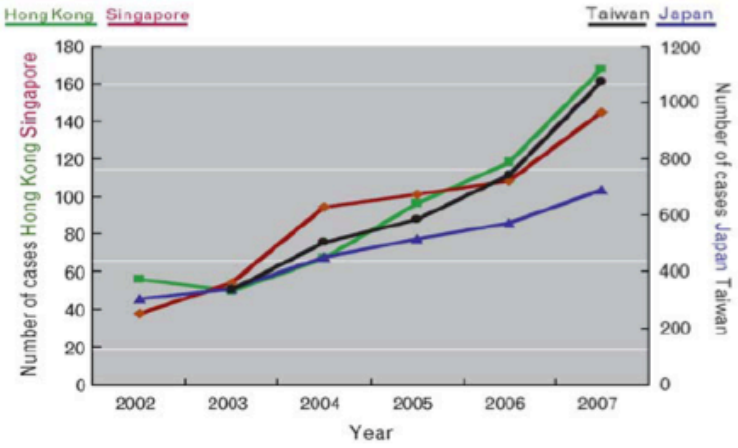
The fifth and final chapter will explore the implications of these analyses on the current state of public health services geared toward MSM in South Africa. Results from both the qualitative and quantitative manuscripts will provide the preliminary knowledge to determine if CVCT services would be an appropriate intervention for MSM in South Africa. This thesis serves to reduce the gap of knowledge that is missing regarding MSM in South Africa, as well as examines the understanding of HIV interventions currently provided for MSM. These preliminary studies are vital given their capacity to assist in the validation of CVCT services for same-sex male couples, as well as in the provision of insight on the understandings and practices of MSM populations that may place them at a higher risk of acquiring HIV.

CHAPTER 2: REVIEW OF THE LITERATURE

EPIDEMIOLOGY OF HIV AMONG MSM

Since the earliest reports of HIV and AIDS largely among self-identified gay men, MSM have been and continue to be the most heavily impacted risk group in many countries (13-15, 39-42). Over the past decade, there has been increased concern about resurgence in HIV infection among MSM throughout the world (43-49). For example, from 2002 to 2007 the number of newly diagnosed HIV infections among MSM in Hong Kong, Taiwan, and Japan increased by over 200%, and more than quadrupled over the same time period in Singapore (Figure 2.1) (39).

Figure 2.1. Number of reported newly diagnosed HIV infections in men who have sex with men, Hong Kong, Singapore, Taiwan and Japan, 2002-2007

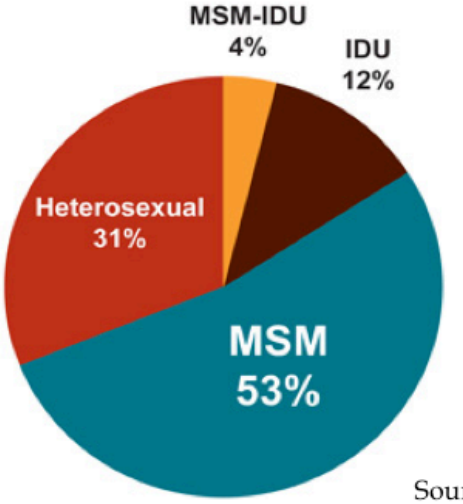


Source: van Griensven 2009

Similarly, from 2005 to 2008, estimated diagnoses of HIV infection in the US increased approximately 17% among MSM (50). Albeit the relatively low prevalence of HIV in the US general population (3), over half (53%) of the cases of HIV in 2008 were among MSM (Figure 2.2) (50). In 2007, it was estimated that

MSM in the US were 44 to 86 times as likely to be diagnosed with HIV compared with other men, and 40 to 77 times as likely as women (50).

Figure 2.2. Estimates of new HIV infections in the US, by transmission category, 2006



Source: CDC, 2010

There have also been reports of emerging HIV epidemics among MSM in Africa (9, 25). Recent evidence suggests that even in countries with generalized epidemics, the risk of acquiring HIV is considerably higher among MSM than in the general population (11, 12). Several studies confirm that HIV prevalence among African MSM is generally higher than among adult men in the general population (51) (Figure 2.3). Cross-sectional studies from Senegal in 2004 and 2007 demonstrated an HIV prevalence of 21.5% and 21.8%, respectively, compared to 0.2% among adult males overall in 2005 (25, 51, 52). The HIV prevalence of an MSM cohort in Kenya from 2005 to 2007 was over 40%, compared to 6.1% among Kenyan adults aged 15-49 years (53). Other cross-sectional studies among MSM have shown HIV prevalence to vary from 12.3% in Tanzania to 30.9% in a Cape Town township (14, 47, 54-58).

Figure 2.3. Estimates of HIV prevalence from studies in sub-Saharan African men who have sex with men

	Year(s) of study	Recruitment	HIV-1 test method	HIV-1 prevalence (95% CI)	Sample size	Adult male (≥15 years) HIV-1 prevalence estimates (2007)*
Botswana						
Gaborone[a]	2008	Snowball referral†	Oral fluid	19·7% (14–28)	117	18·1%
Cote D'Ivoire[b]	2006	NA	NA	18·5% (8–29)	54	2·9%
Ghana[c]	2006	NA	NA	25%	NA	1·4%
Kenya						
Nairobi[d]	2002–05	VCT (self-referral)	Blood	10·6% (9–13)	780	6·1%
Mombasa[e]	2005–06	Snowball referral†	Blood	24·5% (19–30)	285	..
Malawi						
Blantyre and Lilongwe[a]	2008	Snowball referral†	Oral fluid	21·4% (16–28)	201	9·6%
Mauritania[a]	2007	NA	NA	19·0% (2–36)	21	1·2%
Namibia						
Windhoek[a]	2008	Snowball referral†	Oral fluid	12·4% (9–17)	218	10·8%
Nigeria						
Southwest cities[a]	2006	RDS§	Blood	13·4% (11–15)	1125	2·4%
Lagos, Kano, Cross River[a]	2007	RDS§	Blood	13·5% (11–16)	879	..
Senegal						
Dakar and two towns[a]	2004	Snowball referral†	Blood	21·5% (18–25)	442	0·7%
Dakar and two towns[a]	2007	Snowball referral†	Blood	21·8% (18–25)	501	..
South Africa						
Gauteng, KwaZulu-Natal, western Cape[a]	2003–05	Mixed, including venue-based‡ and internet recruitment	Self-report	14·1% (12–17)	728	13·1%
Cape Town[a]	2007–08	Venue-based recruitment‡	Oral fluid	34·3% (23–45)	73	..
Cape Town[a]	2007–08	Venue-based recruitment‡	Oral fluid	10·4% (8–13)	540	..
Sudan						
Khartoum[a]	2005	Snowball referral†	Blood	9·3% (7–11)	713	1·0%
Khartoum[a]	2007	Snowball referral†	Blood	7·8% (5–10)	406	..
Tanzania						
Zanzibar[a]	2007	RDS§	Blood	12·3% (10–15)	509	5·0%
Zambia[a]	2006	NA	Self-report	33% (29–37)	641	13·6%

NA=data not available. VCT=voluntary counselling and testing service. *National estimates of men 15 years or older living with HIV/AIDS (2007) from UNAIDS,[a] and national population estimates of men 15 years and older (2007) from US Census Bureau.[48] †Simple chain-referral sampling in which study participants recruit future participants from among their peers. ‡Participants recruited from locations where the target population congregates; this type of recruitment might represent a probability sample. §Respondent-driven sampling (RDS): an adaptation of snowball sampling in which recruitment is implemented to allow calculation of participant selection probabilities.

Source: Smith, 2009

It has been hypothesized that HIV prevalence among MSM in South Africa may also exceed that in the general population (42), but precise national estimates are lacking due to studies focusing on different subpopulations of MSM and the relatively small sample sizes accessed for analysis. The size of the MSM population in South Africa is unknown; nevertheless, one study shows that if the assumption is made that male-male sex occurs in 3% of adult males, "a

high prevalence of HIV in MSM may contribute between 10-20% of all prevalent HIV infections in the general population" (9). Despite not having a precise national estimate, several localized studies in Cape Town, Johannesburg and Durban, and Soweto have all consistently yielded results showing that HIV prevalence ranged from 12.6% to 47.2% among different subpopulations of MSM (13-15). Compared with a national HIV prevalence estimate around 17% in for all persons aged 15 -49 years (in 2008, 16.9%, 95%CI 15.5, 18.4%) (4), these findings suggest an unlinked epidemic pattern between MSM and the general population (24, 25, 34) and that current HIV prevention efforts have been unable to contain or reduce the spread of HIV infection among MSM in these settings (39).

Recently, there has been a refocus of prevention research among MSM worldwide due to a higher recognition that the inequities MSM experience may cause lower access to adequate prevention and care (12, 59), an alarming amount of data from higher-income countries where a new wave of infections among young MSM is occurring (43), as well as an increasing number of studies from lower- and middle-income countries, where the higher burden of HIV among MSM is a common finding (10). Within many African countries, MSM populations are inadequately studied, and continue to be under-represented in national HIV surveillance systems, targeted prevention programs, and care (10). There are available data that suggest healthcare providers tend to assume heterosexuality, and that some MSM postpone seeking care for conditions such as hemorrhoids, rectal bleeding, and genital infections because of the fear that

they would have to disclose their sexual orientation and the subsequent fear of discrimination (60). MSM who disclose their orientation, through choice or necessity, report family rejection, public humiliation, harassment by authorities, and ridicule by health-care workers (61-63).

A major issue when attempting to determine the burden of HIV among MSM is the unique difficulty to recruit a representative sample of MSM in these settings due to stigma, heterosexism, discrimination, and the illegality of homosexual behaviors. Sex between consenting adult men is presently punishable by law in 31 sub-Saharan African countries, with potential to be sentenced to death in four (64). Further, within Africa, there are strong beliefs that male-male sexual behavior is "un-African" (9), which may act to further stigmatize the MSM population and limit the number of men willing to disclose the occurrence of these sexual partnerships. Most studies examining HIV among MSM in Africa have relied upon convenience or snowball samples of men who self-identify as homosexual (25, 42, 65), which, by design, omits non-gay identifying MSM. The legal frameworks criminalizing same-sex behavior, discrimination, and human rights violations all pose a challenge for research as well as the scaling up of interventions and services toward universal access (64, 66).

In summary, a multitude of evidence demonstrates a resurgent HIV epidemic among MSM worldwide. There appear to be at least two distinct epidemics in South Africa, one among MSM and the other among the

predominately heterosexual general population. Localized studies show that the prevalence of HIV among MSM may exceed that in the general population, and interventions geared toward MSM must ensure their security and guarantee confidentiality.

HIGH-RISK SEXUAL BEHAVIORS AND HIV STATUS AMONG MSM

MSM are deemed a high-risk group for acquiring HIV, particularly due to the interaction between biological and social factors. Excluding parenteral transmissions, essentially all transmissions of HIV among MSM are through a mucosal surface (67). The integrity of the various mucosal surfaces and the presence of mucus differentiate the risk of HIV infection per coital act. Due to inhibitors found in saliva, the oral-genital route has a lower rate of transmission per exposure than unprotected anal intercourse (UAI) (67). However, the relative fragility of rectal tissue may account for the increased risk of acquiring HIV after receptive UAI when compared with the female genital tract (68). Therefore, a higher risk of HIV infection may be found in penile-anal sex acts than in penile-vaginal or oral-genital sex acts. In South Africa, one study found that men who reported having anal intercourse were 1.7 times more likely than those who reported vaginal sex only to be HIV-positive (95%CI, 1.0-3.0) (69), substantiating the potential increased risk when intercourse involves anal tissue.

Assuming a constant risk of transmission per sexual contact between infected and uninfected male partners, the estimated risk of HIV is about 5 to 30

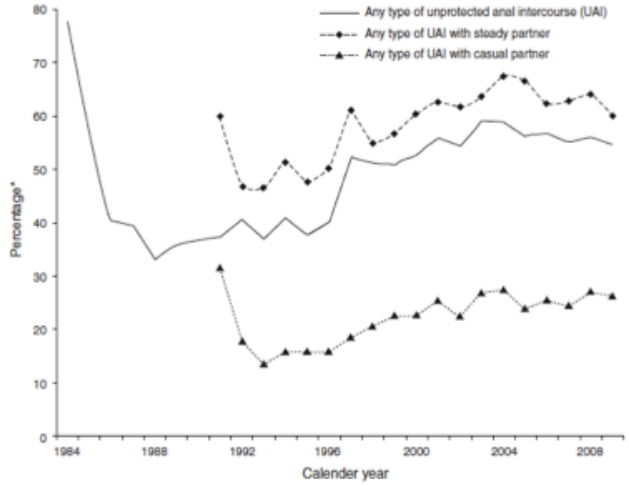
per 1000 receptive UAI (70). However, this risk is highly variable as viral load, therefore infectiousness, dramatically changes within the life-course of a person living with HIV. For example, in one Ugandan study, it has been shown that the transmission of HIV per male-female coital act was eight to ten times more likely in the acute phase (less than five months) of HIV infection (71), but this finding may not be valid for male-male sex, and, in fact, may be higher due to the biological nature of same-sex sexual behavior.

Another unique characteristic that may place MSM at a higher risk to acquire HIV is the presence of foreskin. A review on the sexual transmission of HIV showed that partially due to the presence of specific cells found in abundance in foreskin, HIV prevalence was 1.7 to 8.2 times as high among uncircumcised men than circumcised men, and the risk of infection is nearly 8-fold (72). Three randomized clinical trials in South Africa, Kenya, and Uganda provided evidence that circumcision of HIV-negative adult males reduced their risk of HIV infection through penile-vaginal sex by 60% (73-75); however, trials to determine a similar efficacy through penile-anal sex are non-existent.

There are also social constructions that may interact with the above biological factors to place MSM at a higher risk for acquiring HIV. Due to the relatively high rates of HIV among an already stigmatized population, many of these men, particularly in cultures that do not accept or tolerate MSM behavior, exhibit internalized hetero-normative beliefs and develop symptoms of depression (2, 76). It has been shown that MSM who display a state of depression

are more likely to take part in high-risk sexual activities, such as UAI (77), thus allowing for further transmission of HIV and other sexually transmitted infections (STIs). Long-term cohorts of MSM provide evidence of a significant resurgence in reported frequencies of UAI (Figure 2.4), and that along with UAI with casual partners, having multiple partners is associated with HIV sero-conversion (78, 79). In South Africa, the prototypical masculine identity conflicts with condom usage and justifies men to have multiple sex partners (21, 22, 80); consequently, interventions should take into consideration the unique social contexts in which they are located, and aim to mitigate the relationship between risky behaviors and stigma.

Figure 2.4. Percentage UAI in the preceding 6 months among MSM having anal sex in the Amsterdam Cohort Studies, by type of partner, 1984-2009



Source: Jansen, 2011

A meta-analysis of numerous studies on MSM, heterosexuals, and partners of hemophiliacs, indicated consistent condom use was between 90 and 95% effective in preventing the transmission of HIV (81). Model-based estimates

further showed that consistent condom users were 10 to 20 times less likely than inconsistent or non-condom users to acquire HIV from a partner who was known to be HIV-positive (81, 82). Despite the efficacy of consistent condom use, data from nine sub-Saharan African countries were combined to show that one out of every two MSM in 2010 reported condom use at last sex (3). In one urban African setting, researchers showed that the reporting of recent UAI was significantly associated with not having access to prevention interventions (83), thus highlighting the necessity of an accessible service with consistent condom promotion targeted toward MSM populations in sub-Saharan Africa.

As previously stated, MSM encapsulates all men who have sex with men, regardless if they have sex exclusively with men or with both men and women. This sub-population of MSM, who may have a wife and possibly children, may not perceive themselves as risky, particularly if they are the insertive partner (79). A two-city US study investigating sexual risk-taking among black HIV-positive MSM who also have sex with women found that they were much less likely than HIV-negative or never-tested MSM to engage in unprotected sex with main male or main female partners; however, they were equally as likely as HIV-negative MSM to have unprotected sex with non-main male and non-main female partners perceived as HIV-negative or of unknown sero-status (84). Conversely, a small cross-sectional study in Kenya revealed that men who had sex with only men had a significantly higher HIV prevalence than men who had sex with both men and women (53). However, given the small sample size and

potential issues of reporting bias due to social desirability (perhaps men who have sex with both men and women are less likely to report their risky behaviors and sero-status), conclusions should exhibit caution. In South Africa, there is evidence of an ample portion of MSM who also have sex with women (85). Accordingly, these MSM may serve as a bridge between the generalized and MSM epidemics in South Africa, and must not be excluded from interventions geared toward reducing the transmission of HIV.

Overall, MSM have unique social and biological contexts that may place them at a higher risk for acquiring HIV. Strategies must function to encompass the diverse backgrounds of MSM to mitigate this risk of HIV infection.

AWARENESS OF HIV STATUS

Individual HIV voluntary testing and counseling (VCT) is currently being used in South Africa. A recent survey by the Global Forum on MSM and HIV in eight regions of the world revealed that more than 80% of MSM reported they had an HIV test and received test results in the past 12 months (3, 86); however, only 27.2% (95%CI 17.2, 40.3%) of MSM in South Africa reported being aware of their HIV status in 2008 (4). These relatively low levels of awareness may be ascribed to the mixed feelings MSM have regarding current VCT facilities. Research has demonstrated that MSM who were well informed about HIV and indicated they had tested regularly generally had more positive attitudes toward HIV testing services; however, an abundance of MSM have cited problems with

VCT facilities, such as the inability to understand nurses, the mishandling of reporting the test results, and the inadequate or non-existent counseling given by the doctor (85, 87). However, guidelines aimed to allow South African healthcare providers gain accurate risk summaries of their MSM patients have been published as early as 1985 (88) and are still being produced and disseminated today (2, 89) (Figure 2.5). Alas, there is a stark disparity between the proportion of MSM aware of their HIV status in the world and the proportion of those in South Africa.

Figure 2.5. A sex-positive paradigm, guidelines for healthcare providers and counselors of MSM

Stage	Activity	Content	Aim
1	Recognise the ritualised meaning related to the client seeking VTC at this time	Counsellor indirectly determines whether the ritual is related to appeasing guilt about unsafe sex, a cleansing ritual, a punitive ritual, a ritual related to entering a new relationship or a combination of many factors	Establishing rapport
2	Recognise homophobia and internalised analphobia	Counsellor explains that HIV is not transmitted through any sexual act, but through the exchange of high-risk body fluids, notably semen and blood. If socio-culturally appropriate, counsellor might mention several sexual acts, such as rimming, fucking, kissing, sucking or fisting. Counsellor affirms that ideally MSM should not experience any shame or guilt related to their sexual expressions	Negating client's internalised guilt, shame or conflict about his internal fantasy world and behaviours and reducing psychological dissonance that impairs congruent and open discourse
3	Provide accurate information	Didactic input. Counsellor explains that HIV is transmitted through body fluids, explains the varying viral concentration in each fluid and focuses on semen and blood as being high risk. Counsellor needs to explain the different risks between pre-ejaculate and semen and confirm that saliva poses no real risk.* Explain to client that even non-sexual contact with semen or blood poses a risk and give examples	Provide client with sex-positive information on the biological transmission of HIV he can relate to in order to create greater insight into HIV transmission and the dynamics underlying safer-sex messaging
4	Support client to determine his own risk of contact with the HI virus, facilitating meaningful development of a risk-reduction strategy based on potential exchanges of bodily fluids	If socio-culturally appropriate, counsellor could explain that in terms of casual or anonymous sex, it is statistically likely that most gay men have interacted sexually with other men who are HIV-positive. Counsellor helps client determine his risks by exploring his exposure to various body fluids	Enable client to make informed assessment of risk, based on concrete biological factors that circumvent dynamics related to internalised analphobia and homoprejudice

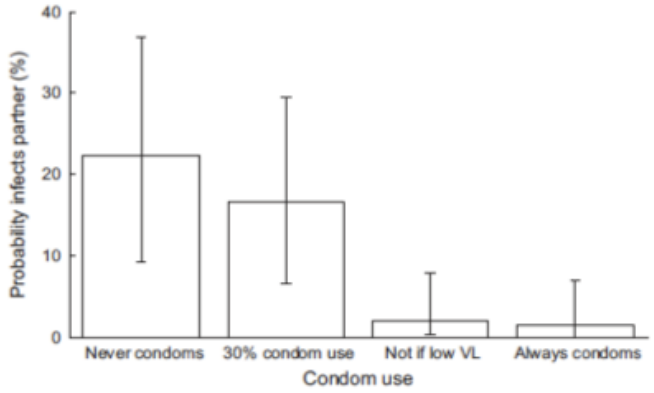
Source: Reddy, 2009

The awareness of a sexual partner's sero-status may also influence the risk of acquiring HIV in coital acts. However, a secondary data analysis of HIV-positive persons in two US cities showed that 74% of those sampled stated difficulty in disclosing their sero-status to others (90). In Cape Town, a small cross-sectional study indicated that 64% of HIV-positive MSM reported confidence in disclosing their sero-status to a sex partner (76). Both studies suggested that high levels of internalized stigma within the HIV-positive participants were associated with the willingness to disclose a positive sero-status (76, 90). Thus, MSM may not always feel comfortable to share their HIV status with a sexual partner, suggesting that many MSM may not be aware of their partner's sero-status when engaging in sexual acts.

There are notable amounts of MSM who, due to their own unawareness of HIV status, have unintentionally exposed their sexual partners to the virus (91). For MSM, choosing a partner who is known to have a negative HIV sero-status instead of one who has an unknown sero-status may reduce the relative risk of HIV infection 43-fold per sex act (82). Having the knowledge of a partner's sero-status is possibly one of the most effective strategies to reduce the risk of HIV infection (82), due to the elimination of risk that comes from assuming or guessing a partner's sero-status. Data from a US cohort of high-risk MSM revealed that when the partner's sero-status was unknown, the estimated per-contact risk of acquiring HIV from receptive UAI was between 0.06% and 0.49% (92). In the complete absence of condoms, one longitudinal study showed that

the risk of HIV-positive men receiving ARV treatment transmitting the virus to their long-term male partners was 22%; however, this risk was reduced to 1% when condoms were always used (Figure 2.6) (93). Therefore, the risk of HIV infection can be reduced through the known selection of an HIV-negative partner, and utilizing a pattern of consistent condom use when selecting a partner living with HIV.

Figure 2.6. Probability of HIV transmission to partner during first-line treatment by consistency of condom use



Source: Hallett, 2011

There is evidence of differential risk of HIV infection based on the type of partner selected. An investigation into the Amsterdam Young Gay Men Cohort Study yielded that rates of UAI among young MSM with steady partners were significantly higher than those with casual partners (94). In addition, most new HIV infections among MSM in the US were accredited to transmission from HIV-positive main sex partners (19). This finding is substantiated by evidence of differential patterns of condom use between casual and main sex partners; that is, men were less likely to use condoms with main partners than casual partners

whether their partner's sero-status was known to be negative or unknown (19). Consequently, MSM in steady relationships should be targeted for interventions aiming to curb new HIV infections.

In summary, knowing that a partner has recently tested negative for HIV is less risky for the acquisition of the virus; however, a multitude of men do not disclose their status to their male partners. The knowledge of a partner's HIV status may be the most effective method in the reduction of HIV transmission among MSM.

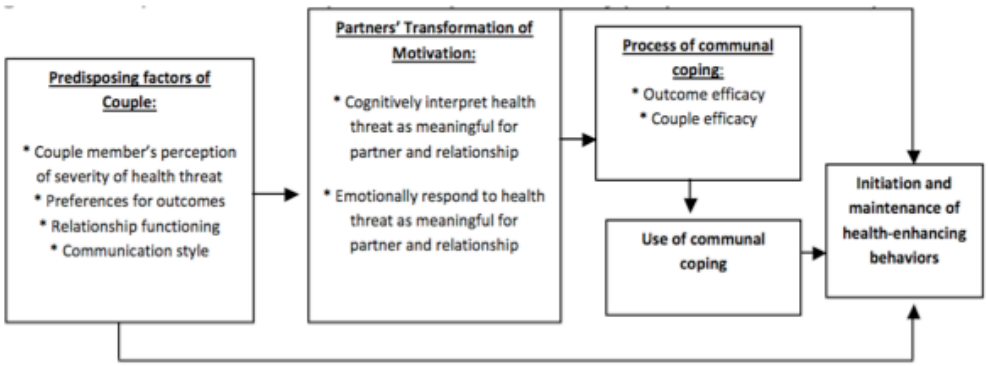
POTENTIAL FOR CVCT

Couples voluntary HIV counseling and testing (CVCT) is a strategy that has been used in Africa for over 20 years among heterosexual couples, and is considered to be a "high leverage HIV prevention intervention" in that setting (16). A typical CVCT service allows couples to participate in the whole cycle of voluntary HIV counseling and testing (VCT) together: they receive pretest information, pretest counseling and risk ascertainment, the results of HIV testing, and posttest counseling.

The CVCT intervention is formulated within an integrative model using the theoretical framework of the couple's interdependence theory (38) and communal coping perspectives (Figure 2.7). First, some aspects of a couple, such as communication style and relationship functioning may influence the success of the intervention. For example, the theory suggests that couples with more

constructive communication styles may benefit more from the CVCT intervention than couples with less constructive communication styles. Second, a couple's interpretation and response to the risk of HIV to their relationship, and further, their resulting coping mechanisms will also inspire the efficacy of the intervention. Within the context of this theory, CVCT may alter a couple's efficacy to initiate and maintain healthy behavior changes to reduce their risk of possible HIV infection.

Figure 2.7. Conceptual model of couples' interdependence theory



Source: adapted from Lewis, 2006

CVCT has been described to be "the most effective behavioral intervention to prevent HIV transmission" for heterosexual couples (17) with the potential to "avert more than two-thirds of new HIV infections among urban African men and women" (18). Previous studies with heterosexual sero-discordant couples have demonstrated CVCT to be effective for reducing HIV transmission within the dyad, as well as for increasing and sustaining condom use after the service (16-18). In Africa, reports suggested that for both couples utilizing CVCT and individuals utilizing VCT, both resulted in a higher rate of condom use; however, the degree of increase was more pronounced in CVCT services than

VCT services (95, 96). A meta-analysis of 27 studies examined the differential uptake of condoms by HIV test results; the research demonstrated that although condom usage increased for those who used VCT and tested positive for HIV, those who used VCT and had negative results did not change their patterns of condom use (97), suggesting that only those with adverse test results benefit from such services. Conversely, CVCT services enable couples with efficacy to work together when making decisions regarding safer sex regardless of the test results.

The perpetuated benefits of CVCT are exemplified through a study that examined the effects of the temporary closure of an HIV research clinic in Zambia. The investigation showed evidence that even though there were negative impacts on most study participants, those who utilized CVCT services established risk-reduction behaviors that were sustained throughout the project closure (98). The observation of preserved healthy sexual behavior among these participants may prove to be beneficial in areas where project funding is inconsistent and organizations dependent on external financial sources may be forced into temporary closures. CVCT has not only been shown to be more cost-effective than individual VCT, but the economic savings are also increased if the service is targeted toward populations with a high HIV prevalence (99).

Studies in Rwanda and Zambia among heterosexual couples have shown that uptake of CVCT was more likely if offered in a discreet location and if both partners in the couple were invited to participate in the service (100). Further,

there has been strong evidence that CVCT services, with some modifications to the existing African CVCT model used with heterosexual couples, would be welcomed by MSM in the US (101). However, the current model for CVCT has never been examined for the acceptability by same-sex couples in an African setting.

In summary, the CVCT intervention has been proven to effectively impede the transmission of HIV in other at-risk populations in several African settings. Given the abundance of evidence suggesting a resurgent HIV epidemic among MSM, investigations should be conducted to determine the acceptability of CVCT among same-sex male couples.

CHAPTER 3: QUANTITATIVE MANUSCRIPT

High levels of acceptability of couples-based HIV testing among MSM in South Africa

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ABSTRACT

The acceptability of couples-based voluntary HIV counseling and testing (CVCT) has not been previously investigated among MSM in South Africa. Using online advertisements, data were collected from 486 MSM, who were 18 years of age or older with a current residence in South Africa and had at least one male sex partner in the previous 12 months. The analysis examined associations between individual characteristics and willingness to utilize CVCT services. The willingness to utilize CVCT services was compellingly high (89%) among this sample of mostly White/European African (89%) and HIV-negative (83%) men. MSM who reported higher numbers of completed school years were less likely to report willingness to use CVCT. Willingness did not vary significantly across other individual demographic or behavioral characteristics. Our results show an overwhelmingly high acceptance of CVCT services. Future studies should survey a more heterogeneous population of MSM, explore the complex nature of same-sex male relationships, and why respondents would or would not use these HIV testing services.

KEYWORDS: CVCT, MSM, HIV testing, Couples

INTRODUCTION

Couples voluntary HIV counseling and testing (CVCT) is a strategy that has been used in Africa for over 20 years among heterosexual couples, and has been described to be "the most effective behavioral intervention to prevent HIV transmission" in this at-risk population (17). Previous studies with heterosexual sero-discordant couples have demonstrated CVCT to be effective in reducing HIV transmission, increasing and sustaining condom use, and reducing sexual risk-taking (16-18, 95, 102). A typical CVCT service allows couples to participate in the whole cycle of voluntary HIV counseling and testing (VCT) together: they receive pretest information, pretest counseling and risk ascertainment, the results of HIV testing, and posttest counseling.

It has been hypothesized that HIV prevalence among MSM in South Africa may exceed that in the general population (42), but precise national estimates are lacking due to studies focusing on different subpopulations of MSM and the relatively small sample sizes accessed for analysis. Despite not having a national estimate, several localized have all consistently yielded results showing that HIV prevalence ranged from 12.6% to 47.2% among different subpopulations of MSM (13-15). Compared with a national HIV prevalence estimate around 11% in the general population (in 2008, 10.9%, 95%CI 10.0, 11.9%) (4), these findings suggest an unlinked epidemic pattern between MSM and that in the general population (24, 25, 34) and that current HIV prevention

efforts have been unable to contain or reduce the spread of HIV infection among MSM in these settings (39).

Despite the relatively high proportions of MSM in the world who reported recent awareness of their HIV status (3, 86), the majority of South African MSM reported being unaware of their sero-status in 2008 (4). Thus, many MSM did not utilize HIV testing services. In fact, several studies have substantiated the discontent MSM have with public and government clinics offering these services (85, 87). Further evidence of discontent suggested that healthcare providers tend to assume heterosexuality in their patients and that some MSM postponed seeking care because of the fear that they would be forced to disclose their sexual orientation and the subsequent fear of discrimination (60). Therefore, there is a lack of HIV testing interventions that are accepted by MSM in South Africa.

The HIV epidemic among MSM in South Africa is analogous to the HIV epidemic among MSM in the United States. Albeit the relatively low prevalence of HIV in the US general population (3), over half (53%) of the cases of HIV in 2008 were among MSM (50). Additionally, a recent US investigation demonstrated that most new HIV infections among MSM were attributed to transmission from an HIV-positive main sex partner (19), which emphasized the influential role that couples may have in an HIV epidemic. There has been strong evidence that MSM in the US would be highly receptive to CVCT services. Th results of focus group discussions with MSM in three US cities (101) indicated that CVCT services could potentially overcome many barriers to seeking HIV

testing, particularly the fear of receiving a positive test result alone. Men in these focus groups reported that CVCT could provide an opportunity for MSM to disclose their sero-status to their partners and have conversations about their sexual behaviors in the presence of a trained counselor. Further, they suggested that the counseling components of the service could allow a couple to explore methods of how to effectively reduce their risk of acquiring or transmitting HIV. However, the acceptability of CVCT among MSM has yet to be evaluated in an African setting.

This investigation aims to determine if CVCT would be a viable option for an HIV testing service among MSM in South Africa. Further, this study will examine whether the willingness to utilize CVCT varies across several individual characteristics in order to better understand how to structure the service to attract the most MSM in this setting.

METHODS

Internet-using MSM were recruited through selective placement of banner advertisements on Facebook.com in June and July 2010. Participants who clicked on the displayed banner ads were taken to an internet-based survey. Eligibility criteria to complete the survey were reporting being a male aged 18 or older with a current residence in selected African countries and having at least one male sex partner in the previous 12 months. The survey collected information on the participant's demographic characteristics, such as race and education; their

previous and current sexual relationships; their knowledge of HIV and its transmission routes; their HIV testing behavior and sero-status; and their willingness to utilize CVCT services (*"If there were a service in which you could go with your male partner and receive your HIV test results together, do you think you would use this service?"*). In addition, participants were asked if they had experienced or perpetrated intimate partner violence (IPV) in the 12 months prior to the survey. Participants also responded to the shortened version of the Gay Identity Scale, a scale developed to measure the stages of gay identity formation and validated with MSM in the US (103). Finally, respondents answered 11 questions on their experience of discrimination: the responses are enumerated to create a scale (0-11), with a higher score representing a greater perceived experience of discrimination.

For this analysis, we applied additional eligibility criteria of being a current resident in South Africa (77%).

Two-sided Wilcoxon rank-sum tests and chi-square (χ^2) tests were performed to examine differences in characteristics between men who reported willingness to utilize CVCT services and those who did not report willingness to utilize CVCT services. Using a multivariate logistic model, the willingness to utilize CVCT services with a male partner was regressed on several individual and behavioral characteristics.

The research was approved by Emory University's Institutional Review Board. Analyses were conducted with SAS 9.2, Cary, NC.

RESULTS

Of the 777 individuals who responded to the advertisements, 486 were eligible, of whom 449 (92%) completed the question regarding willingness to utilize a CVCT service with a male partner and were included in the analysis.

An overwhelming majority (89%) of respondents expressed willingness to utilize CVCT services. Tables 1 and 2 show that respondents were mostly White/European African (89%) and HIV-negative (83%). The majority of men identified as homosexual or gay (96%). Reported ages ranged from 18 to 60, with a median age of 31; reported number of completed school years ranged from 1 to 22 with a median of 13 years. There was a high amount of knowledge regarding HIV among the respondents, as well as a high level of self-identification as gay males. Most men reported having ever been tested for HIV (87%).

Table 3 shows the distributions of covariates between men willing to use CVCT and men not willing to use CVCT. Willingness was universally high across all individual characteristics, and men who reported willingness to use CVCT services had a significantly lower number of completed school years than those who did not report willingness to use CVCT services. Willingness did not vary significantly across all other individual characteristics.

Table 4 shows the results of the crude and adjusted analyses based on the multivariate logistic regression model. For both the crude and adjusted analyses, men who reported higher numbers of completed school years were less likely to report willingness to use CVCT (cOR 0.85, 95%CI 0.76, 0.95; aOR 0.85, 95%CI

0.75, 0.97). All other measures of effect were insignificant at the $p<0.05$ significance level.

DISCUSSION

This is the first quantitative study to examine the willingness to utilize CVCT services within MSM populations in an African setting. The results suggest that MSM in South Africa would universally accept this couples-based HIV testing and counseling service. Given the low proportions of MSM who were aware of their sero-status in 2008 (4) and their considerable discontent with current HIV testing services (85, 87), this finding provides optimism for an alternative intervention that would be accepted and used by MSM.

The MSM in this sample demonstrated high levels of knowledge regarding HIV and its transmission patterns. This finding is likely due to the high levels of education among the men, only 7% of whom reported fewer than 12 years of schooling. Interestingly, MSM with more schooling were significantly less likely to express willingness to utilize CVCT services. One possible explanation is that higher education may be linked with a lower risk of acquiring HIV. A longitudinal study monitored risk behaviors and sero-conversion of 1642 HIV-negative MSM for 25 years. It was found that MSM who had no college degree were 1.63 (95%CI 1.23-2.18) times more likely than those who had at least a college degree to acquire HIV (78). If MSM perceive themselves as having a

lower risk of HIV infection, this may lead them to have less need or willingness to utilize CVCT, or other HIV testing services.

The key limitations of this study were the small sample size and the homogeneity within the sample. Selection bias may also be present in these results because of the need to not only have access to internet services, but to also own and use an account on Facebook.com.

CONCLUSIONS

This premiere quantitative study demonstrates a compellingly high acceptance of CVCT services. Future studies should explore the complex nature of same-sex male relationships, and utilize qualitative approaches to understand why MSM would or would not use these HIV testing services.

Table 1. Descriptions and characteristics of continuous covariates among respondents who answered willingness to CVCT

Covariate	Description	Mean	Range
Age	Reported age	31.3	(18, 60)
# of school years	Reported number of school years completed	13.4	(1, 22)
Scales			
Discrimination	The extent to which the respondent ever experienced discrimination due to his sexual orientation *(higher values mean more discrimination)*	5.6	(0, 11)
Knowledge	The extent of the respondent's knowledge regarding HIV *(higher values mean more knowledge)*	13.7	(-17, 17)
Gay Identity	The extent to which the respondent identifies as a gay male, adapted from Brady and Busse (1994) *(higher values mean more identification as a gay male)*	65.4	(0, 80)

Table 2. Descriptions and characteristics of categorical covariates among respondents who answered willingness to CVCT

Covariate	%	n
Willingness to CVCT		
Yes	88.9	404
No	11.1	45
Race		
Other	8.5	34
White/European African	91.5	368
Sex of partners		
Both men and women	40.1	162
Only men	59.9	242
Current sexual relationship		
Have one, with outside partners	16.8	67
Have one, monogamous	47.0	188
Do not have one	36.2	145
Description of last sex		
Did not use condom, insertive partner	20.3	82
Did not use condom, receptive partner	20.5	83
Used condom, insertive partner	14.1	57
Used condom, receptive partner	22.8	92
Did not answer	22.3	90
Ever tested for HIV		
Yes	86.7	344
No	13.3	53
Most recent HIV test result		
Negative	82.7	334
Positive	5.7	23
Other/Did not answer	11.6	47
Experience IPV in last 12 months		
No	88.0	352
Yes	12.0	48
Location of last HIV test		
Private doctor's office	39.4	159
Public center/testing site	25.0	101
Other	35.6	144

Table 3. Distributions of covariates between men willing to use CVCT and men not willing to use CVCT

	CVCT *[mean(sd)]*		
Covariate[a]	**Willing**	**Not Willing**	***P***
Age	31.2 (8.9)	31.6 (8.7)	0.6957
# of school years[c]	13.2 (2.6)	14.4 (2.7)	0.0131
Scales			
Discrimination	5.5 (2.4)	5.8 (2.4)	0.4825
Knowledge	13.7 (2.8)	14.1 (3.1)	0.1387
Gay Identity	65.3 (14.1)	66.2 (11.5)	0.9615
	CVCT *[%(n)]*		
Covariate[b]	**Willing**	**Not Willing**	***P***
Race			
Other	8.4 (30)	8.9 (4)	0.7826
White/European African	91.6 (327)	91.1 (41)	
Sex of partners			
Both men and women	39.8 (143)	42.2 (19)	0.7579
Only men	60.2 (216)	57.8 (26)	
Current sexual relationship			
Have one, with outside partners	16.3 (58)	20.0 (9)	0.6950
Have one, monogamous	46.8 (166)	48.9 (22)	
Do not have one	36.9 (131)	31.1 (14)	
Description of last sex			
Did not use condom, insertive partner	20.1 (72)	22.2 (10)	0.9556
Did not use condom, receptive partner	20.3 (73)	22.2 (10)	
Used condom, insertive partner	14.5 (52)	11.1 (5)	
Used condom, receptive partner	22.6 (81)	24.4 (11)	
Did not answer	22.6 (81)	20.0 (9)	
Ever tested for HIV			
Yes	86.9 (306)	84.4 (38)	0.6441
No	13.1 (46)	15.6 (7)	
Most recent HIV test result			
Negative	83.0 (298)	80.0 (36)	0.3016
Positive	6.1 (22)	2.2 (1)	
Other/Did not answer	10.9 (39)	17.8 (8)	
Experience IPV in last 12 months			
No	88.2 (313)	86.7 (39)	0.7702
Yes	11.8 (42)	13.3 (6)	
Location of last HIV test			
Private doctor's office	39.8 (146)	35.6 (16)	0.7818
Public center/testing site	24.5 (88)	28.9 (13)	
Other	35.7 (128)	35.6 (16)	

[a]Two-sided Wilcoxon rank-sum test

[b]Chi-square (χ^2) tests and Fisher's Exact, when expected cell counts were < 5

[c]$p<0.05$

Table 4. Crude ORs and adjusted ORs from a multivariate logistic model regressed on willingness to use CVCT (n=353)

Covariate	aOR (95% CI)	cOR (95% CI)
Age	0.99 (0.95, 1.03)	1.00 (0.96, 1.03)
# of school years	*0.85 (0.75, 0.97)*	*0.85 (0.76, 0.95)*
Scales		
Discrimination	0.96 (0.83, 1.12)	0.96 (0.83, 1.09)
Knowledge	1.01 (0.89, 1.15)	0.94 (0.83, 1.06)
Gay Identity	0.99 (0.96, 1.02)	1.00 (0.97, 1.02)
Race		
White/European African	1.00	1.00
Other	0.88 (0.22, 3.59)	0.94 (0.32, 2.80)
Sex of partners		
Only men	1.00	1.00
Both men and women	1.16 (0.54, 2.49)	0.91 (0.48, 1.70)
Current sexual relationship		
Do not have one	1.00	1.00
Have one, with outside partners	0.74 (0.24, 2.29)	0.69 (0.28, 1.68)
Have one, monogamous	0.69 (0.29, 1.61)	0.81 (0.40, 1.64)
Description of last sex		
Did not use condom, insertive partner	1.00	1.00
Did not use condom, receptive partner	0.87 (0.32, 2.35)	1.01 (0.40, 2.58)
Used condom, insertive partner	2.89 (0.56, 14.77)	1.44 (0.47, 4.48)
Used condom, receptive partner	0.73 (0.25, 2.11)	1.02 (0.41, 2.55)
Did not answer	1.40 (0.46, 4.23)	1.25 (0.48, 3.25)
Ever tested for HIV		
No	1.00	1.00
Yes	0.65 (0.14, 3.12)	1.23 (0.52, 2.91)
Most recent HIV test result		
Negative	1.00	1.00
Positive	2.05 (0.25, 17.00)	2.66 (0.35, 20.28)
Other/Did not answer	0.48 (0.11, 2.11)	0.59 (0.26, 1.36)
Experience IPV in last 12 months		
Yes	1.00	1.00
No	0.97 (0.33, 2.88)	1.15 (0.46, 2.87)
Location of last HIV test		
Private doctor's office	1.00	1.00
Public center/testing site	0.50 (0.20, 1.22)	0.76 (0.35, 1.65)
Other	0.66 (0.26, 1.69)	0.90 (0.43, 1.86)

Italicized ORs and CIs are significant at the $p < 0.05$ level

CHAPTER 4: QUALITATIVE MANUSCRIPT

Attitudes toward couples-based HIV counseling and testing among MSM in Cape Town, South Africa

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ABSTRACT

Couples-based voluntary HIV counseling and testing (CVCT) allows couples to receive their HIV test results together and has been demonstrated to be effective in reducing HIV transmission, increasing and sustaining condom use, and reducing sexual risk-taking among at-risk heterosexual couples. However, the acceptability of CVCT among MSM has yet to be evaluated in an African setting. The results from seven focus group discussions and twenty-nine in-depth interviews conducted in Cape Town, South Africa exhibit overwhelmingly high acceptance of CVCT. Participants were attracted to the counseling components of the service, stating that these would allow for the couple to increase their commitment and to explore methods of how to effectively reduce their risk of acquiring or transmitting HIV in the presence of a trained counselor. These results suggest CVCT would be highly welcomed and could work to fill the significant lack of services available and accessible to MSM in Cape Town.

KEYWORDS: CVCT, MSM, HIV testing, Couples

INTRODUCTION

Couples-based voluntary HIV counseling and testing (CVCT) is a strategy that has been used in Africa for over 20 years among heterosexual couples, and is considered to be a "high leverage HIV prevention intervention" in that setting (16). A typical CVCT service allows couples to participate in the whole cycle of voluntary HIV counseling and testing (VCT) together: they receive pretest information, pretest counseling and risk ascertainment, the results of HIV testing, and posttest counseling. Unique to CVCT, couples receive essentially two sets of test results: their personal results (negative or positive), and their results as a couple (sero-concordant negative, sero-concordant positive, or sero-discordant), thus highlighting the importance of the counseling components to guide users of the service through the implications of their test results.

Previous studies with heterosexual sero-discordant couples have demonstrated CVCT to be effective in reducing HIV transmission, reducing sexual risk-taking, and increasing and sustaining condom use (16-18, 95, 102). In Africa, both couples utilizing CVCT services and individuals utilizing VCT services resulted in a higher rate of condom use; however, the degree of increase was more pronounced in CVCT services than VCT services (95, 96). Further, CVCT has not only been shown to be more cost-effective than individual VCT, but the economic savings are also increased if the service is targeted toward populations with a high HIV prevalence (99).

Several studies have demonstrated that HIV prevalence among MSM in many sub-Saharan African countries was generally higher than among adult men in the general population (51). It has been hypothesized that HIV prevalence among MSM in South Africa may also exceed that in the general population (42), but precise national estimates are lacking due to studies focusing on different subpopulations of MSM and the relatively small sample sizes accessed for analysis. However, localized studies in Cape Town, Johannesburg and Durban, and Soweto have all consistently yielded results showing that HIV prevalence ranged from 12.6% to 47.2% among different subpopulations of MSM (13-15). Compared with a national HIV prevalence estimate around 11% in the general population (in 2008, 10.9%, 95%CI 10.0, 11.9%) (4), these findings suggest an unlinked epidemic pattern between MSM and the general population (24, 25, 34) and that current HIV prevention efforts have been unable to contain or reduce the spread of HIV infection among MSM in these settings (39).

A recent survey by the Global Forum on MSM and HIV in eight regions of the world revealed that more than 80% of MSM reported they had an HIV test and received test results in the past 12 months (3, 86); however, only 27.2% (95%CI 17.2, 40.3%) of MSM in South Africa reported being aware of their HIV status in 2008 (4). These relatively low levels of awareness may be ascribed to the mixed feelings MSM have had regarding VCT facilities. MSM who were well informed about HIV and indicated that they tested regularly generally had more positive attitudes toward HIV testing services; however, an abundance of MSM

have cited problems with VCT facilities, such as the inability to understand nurses, the mishandling of reporting the test results, and the inadequate or non-existent counseling given by the doctor (85, 87). There is a lack of interventions catered to the unique needs of MSM, which is substantiated by data that suggested healthcare providers tended to assume heterosexuality, and that some MSM postponed seeking care because of the fear that they would have had to disclose their sexual orientation and the subsequent fear of discrimination (60).

Equivalently in the United States, the MSM population is highly impacted by HIV. Albeit the relatively low prevalence of HIV in the US general population (3), over half (53%) of the cases of HIV in 2006 were among MSM (50). Additionally, a recent US investigation demonstrated that most new HIV infections among MSM were attributed to transmission from an HIV-positive main sex partner (19), which emphasized the influential role that couples may have in an HIV epidemic. There has been strong evidence that MSM in the US would be highly receptive to CVCT services with only slight modifications to the existing African CVCT model used with heterosexual couples (101); however, the acceptability of CVCT among MSM has yet to be evaluated in an African setting.

This investigation aims to determine the attitudes toward CVCT among MSM in Cape Town, South Africa. This study site was chosen because South Africa is one of the few countries in the world to legally protect all the rights of MSM, and Cape Town has one of the largest, most visible lesbian, gay, bisexual, and transgender (LGBT) populations in the African continent. This study will

examine whether or not CVCT would be welcomed in Cape Town and how the service would need to be structured in order to be the most attractive to MSM.

METHODS

Recruitment and methodology

During June and July 2010, and in January 2011, seven focus group discussions (FGD) and twenty-nine in-depth interviews (IDI) were conducted in Cape Town in order to examine participants' perceptions of CVCT, comparisons of CVCT to VCT, and perceived dyadic changes that may result from CVCT.

Participants were recruited utilizing venue-based sampling (CITATION) that focused on community-based organizations with strong connections to various MSM sub-populations. The target population for this study was men aged over 18 years who self-report that they have sex with men and that they reside or work in Cape Town or its surrounding townships. For the FGDs, the aim was to have between 6 to 10 participants per group; anticipating subject loss, we over-recruited by approximately 30%. Potential participants who contacted the study organizers were screened on the aforementioned criteria. Upon arrival to the selected venue, participants first went through the consent process, and then completed a screening questionnaire (including age, race, sexual history, and relationship status). The research team members reviewed the completed questionnaires and selected up to 10 participants to represent a diverse mix of the potential participants (e.g. a range of ages, races/ethnicities and relationship

statuses). For the IDIs, nearly half of those interviewed were recruited from the FGDs, enabling them to share information that may not have been shared during the focus group, and the others were recruited using a venue-based sampling methodology. The individual interviewees also underwent a similar process of consent and screening, and eligible participants were selected to represent a variety of ages, races/ethnicities, and relationship statuses. All participants were informed of the following: a 'couple' or a 'relationship' is self-defined, there was no need to reveal their sero-status, and that the researchers were not offering HIV screening. Following each focus group and interview, the participants were given a small envelope that included their travel reimbursement (R80≈10-12USD), referral cards with some details about the study and contact information, and a mental health resource guide detailing services in the area they could attend if they felt it necessary.

Data collection and analysis

The question guide for the focus group discussions included the following themes: attitudes towards HIV testing, motivation for HIV testing, attitudes towards CVCT, likelihood of participation in CVCT, barriers and facilitators to CVCT use, and the impact of CVCT on relationship quality and behavioral change. The question guide for the in-depth interviews included topics from the focus group question guide, as well as the following themes: attitudes toward individual HIV screening, experiences with discrimination in different sectors,

perceived stigma based on sexual orientation, and racial and cultural barriers to CVCT use. The analysis of the data involved the coding and classification of the data by reviewing the transcriptions for potential conceptual categories, using the guideline questions as initial categories (104). Two types of codes were employed: inductive (arising from literature on CVCT and VCT) and deductive (arising from data). The coded data were then separated by theme and sub-themes. Frequencies were enumerated across the themes to determine the intensity of the responses.

RESULTS

The final sample included a total of 71 participants, 29 of which were involved in IDIs and the remaining 42 were distributed amongst seven FGDs. Reported ages ranged from 18 to 65 with a median age of 28. About half (52%) of the sample was Black, 24% were Coloured, and 21% were White. Of the 72% who reported currently being in a sexual relationship, 54% stated they had main partners, 25% had multiple partners, and the remaining 21% were in casual sexual relationships.

Acceptability of CVCT

Participants initially revealed a range of attitudes toward CVCT services. Most participants immediately supported CVCT and favored the additive

support they would receive from their partners in the event of an unwanted test result.

"Because some other people who feel anger, they want to kill theirselves when they know they are HIV-positive. And then that's what, they are going to know that, 'Okay here is my partner. He is going to help me, so now I'm free. I have somebody to talk to every time I need to talk.' So that is why I say it is needed."

Many participants reported that they hear *"so many stories of people in relationships not knowing that the other one is actually HIV-positive."* Several participants suggested that receiving HIV test results together provided benefits over receiving them separately due to the *"complete transparency"* CVCT provides in the presence of a *"trained counselor"* who is perceived to be *"neutral and nonbiased."*

"…It's going to be much better because if I go in as an individual and my partner doesn't know, I just keep quiet if I find out I'm positive…But if you go with your partner, then you'll both start coming to your senses because then you'll both know what to do now."

Participants further mentioned that CVCT would enable open conversations between partners who may have difficulties otherwise coming to agreements on issues, such as opening a relationship to permit outside sexual partners.

A few participants reported mixed feelings regarding receiving their test results with their partner, stating that they were willing to utilize CVCT, but only if they were given the option throughout the service to withdraw from a couples-based service and receive their test results alone.

Very few men thought that the CVCT service would not work for any reason. One of those who did not endorse the service emphasized that the trust in a relationship should transcend the need to test together.

"To me, it's just an individual thing. I really don't see the need for a couple going together…If they come to that stage where they are now really settling down as a couple, they should be so trusting of each other that this is, it should have all happened prior to that."

Existing facility characteristics

Virtually all of the participants stated discontent with the current public and government facilities offering HIV testing services. Those who shared their grievances about these clinics often cited problems with the lack of privacy and lack of confidentiality they have experienced. Participants reported the current design of HIV testing facilities allows for others to immediately discern between those who are living with HIV and those who are not. For example, nurses often call upon men who are HIV-positive and needing to retrieve their treatment

while they are sitting in a lobby area or waiting in a queue, which was reported to give away the confidentiality of their status.

"And that's very wrong, because, by doing that, you can get that people might even discriminate against you because now they know you are HIV-positive. And then that won't feel good, because they will start talking about you and teasing you."

Many participants also reported discrimination in public and government clinics due to their MSM behavior. Participants shared that in some instances, the staff in these clinics do not accurately assess their risk of HIV because they assume heterosexuality and forgo questions that may lead the participant to disclose sexual partnerships with other men. Many participants also reported that in cases where they disclose their MSM behaviors, either voluntarily or by force, the counselors *"mock"* them and begin to say *"nasty things"* because they are *"disgusted."* Men reported many instances where nurses in government clinics would *"gossip"* to the other nurses about their clients being MSM. Men shared experiences in which the counselor would subsequently withhold treatment until they brought a girlfriend in to get tested. Participants stated that the judgment they receive in public clinics deters men from receiving their HIV status. One of those who perceived this deterrence emphasized the barriers married same-sex male couples face in these clinics.

"One thing that I've seen, especially in Cape Town,…is that most people that are dying of AIDS are married couples. And the reason why they're dying is because they can't go to these clinics, these 'normal' clinics, because they would be judged…and at the end of the day, they end up dying one by one because they're both hiding, they're not sure of their status."

In contrast, participants stated more comfort when utilizing HIV testing facilities catered to MSM specifically or had a reputation for being *"gay-friendly."* The main reason for their proclivity is the perceived non-judgmental environment that these services possess. Participants also preferred these facilities to public or government clinics due to the follow-up services that they offer, such as appointment reminders for routine testing and phone calls to inform HIV-positive patients that their medication is ready to be retrieved. A few participants stated that they were partial to using testing services that allotted travel reimbursements for those who must travel to get to the facility.

Desired facility characteristics

Participants offered suggestions in regards to how they would design an ideal facility for HIV testing. Many participants stated that the facilities should function like a *"community center"* to provide maximum comfort and minimize the potential for stress. Men stated that being greeted with a *"friendly face"* and being offered a beverage, such as water or tea, would facilitate comfort. Facilities

should offer reading materials and informational videos on sexual health to the clients while they wait their turn to test and counsel. Participants reported that the entire session should be done in "*separate rooms*" away from the lobby area so that confidentiality is ensured; further, the service should be in the form of an established routine that everyone completes no matter the test results. That way, those waiting in the lobby will not be able to discern which clients either tested positive or negative for HIV.

Participants stated that an ideal facility would be available for use by both male-male and male-female couples in order to reduce any stigma that would be placed on couples seen entering the building. However, a nearly equal number of participants refuted this by wanting only male couples to be welcome in the facility, stating that same-sex couples would likely feel uncomfortable if someone they knew who was not also MSM saw them.

Participants unanimously agreed that an ideal facility would be accessible through public transport or proximity to potential clientele. Men stated facilities are beneficial if located in the city because of the multiple routes of transportation into the city, as well as the sense of "*anonymity*" in a setting that is highly populated. However, many men declared that facilities should also be present in the rural townships not only to be accessible to people who may not be able to afford transport costs, but also because of the immense health burden found in these areas.

Participants reported who they would like to have working at these facilities. Most men did not claim preference to a certain gender, race/ethnicity, or age. However, participants did wish that the counselors and nurses would be able to offer the service in a variety of languages, primarily English, Xhosa, and Afrikaans.

"Somebody that's able to step out of their own lives and be neutral, whatever they really are in their own heads. Whatever they may think."

"…For every two people here on this earth, there is a different type of relationship they're having. And it's very important that whoever is doing that type of counseling realizes that and can somehow plug into what this relationship is about without being judgmental about it."

Structure of CVCT

Participants reported that every couple must obtain the same CVCT service, regardless of their test results. The various final models for CVCT can be found in Figure 1. Models varied slightly across the focus groups. Four groups agreed that Model A would be the best model. Two groups stated that if paperwork came first, men might become nervous and leave before commencing the pre-counseling, hence beginning the service with pre-counseling in Model B. Finally, one focus group added various components to Model A: an assessment

by the counselor to suggest individual testing rather than proceeding as a couple after the pre-counseling, a follow-up that links HIV-positive men to various support groups and medical care, as well as offering all men the option to be contacted by the CVCT facility to remind men of an upcoming appointment or a reminder to pick up treatment.

Many participants delved into specific steps and offered suggestions on how to attract MSM to use the service. Participants reacted positively to the pre-counseling and post-counseling components, stating that they had the potential to increase the bond of a relationship and allow for any disclosures in a safe environment. Participants reported that the questions asked on any form or by the counselors should be MSM-sensitive; that is, the questions should be applicable to MSM and the numerous different relationship types. Also, some men stated that the test results should not be written down, *"because someone can access that information in the future."* They stated that especially in a couples-based test, there would be no need to write down the result because the partner is there to hear the result.

Participants felt that there should be no restriction based on the duration of a couple's relationship, stating that some couples are able to commit sooner than others, and that this would greatly limit who would seek these services. Some participants even stated that the service should be open to be used by very close friends.

"Even if they're not a couple and they're pretending to be a couple, at least they're still getting tested."

Many participants stated that having the option open to discontinue a couples-based test and test as individuals would be highly preferred. Participants suggested that couples might want to have the option to receive their test results separately before coming together to share their results with their partner.

"More is better. If there's more options, there's more possibility of people actually getting tested. You know, if they know about it and they know that there is a service. Options are good."

Usage of CVCT

Participants discussed which couples would and which couples would not utilize CVCT services. Several participants thought that all couples would use the service at some stage in their relationships. Men listed the types of couples that would be the most likely users: couples *"who are building a future together," "exclusive," "living together," "have nothing to hide," "communicate well,"* and are *"committed to each other."* There was a debate around whether commitment was associated with longer relationships. Some participants thought that only long-term couples would use CVCT; however, an equal

number of men suggested that any committed couple, regardless of relationship duration, would use CVCT. Several participants stated that new couples would benefit if they used CVCT prior to commencing a sexual relationship; thus, impeding any blame that may come in the future due to a member in a relationship being HIV-positive prior to having sex with their new partner.

Conversely, participants also discussed which couples would be less likely to utilize CVCT services. The most common mentioned relationship that would be deterred from using CVCT is between men who have sex with men and women (participants colloquially called these men "*after nines,*" referring to men who may have a wife and kids, and then have sexual relations with men at night unbeknownst to their female sexual partners). Therefore, participants reported that these men would not be willing to bring their male partners to use CVCT, especially "*in a place meant for gays*" because their sexual identities would be revealed. Participants also mentioned couples that are "*unstable*" or "*unfaithful*" would not utilize CVCT services.

"There are those people that they know that they are not faithful, are not committed to have one partner. They will feel scared to come to the services, because they know, 'Okay now if I come to the service, I'm committing myself to this person.'"

Testing behaviors

Participants explored facilitators and barriers to CVCT and reasons why couples may seek joint testing. Participants reported that the primary facilitator to HIV testing was support from their partners, stating that if they knew they were fully supported, they would certainly test as a couple. Conversely, the main barriers to obtaining an HIV test were not having the finances to afford transport costs to a testing facility, as well as an internalized fear of receiving an HIV-positive test result.

Many participants suggested that couples would seek joint testing if one of the partners began showing symptoms of other illnesses, such as an STI. Participants also reported couples that are preparing to commit to each other and take a step forward in their relationships would seek HIV testing. Lastly, participants stated that couples who increase their risk of acquiring HIV through introducing penetrative sex to their relationship, eliminating condoms from their sexual relationship, or opening their relationships to allow for outside partners would be urged to seek HIV testing. Similarly, couples would get tested if one partner discovered that the other partner has *"cheated"* by having sexual relationships with a person outside of the dyad in the absence of an agreement to do so.

Participants reported that male-male couples would be deterred from seeking HIV testing together from a public facility, stating that they *"don't want to offend anyone by going to a local clinic."* They thought that these public facilities

were not a welcoming environment for MSM, let alone two men seeking testing together.

Perceived effects of CVCT

Most men agreed that a concordant negative and a concordant positive result would both "*strengthen the bond*" of a relationship. Participants listed further benefits of "*increased trust*" and "*proved commitment.*" Participants also explored possible negative effects of disclosing a status to a partner during a CVCT session. The most common issue revolved around receiving a sero-discordant result. Many participants thought that the duration of a relationship would play a role in how a couple would react to these results, reporting that newer relationships with no "*commitment*" would have more difficulty than long-term relationships dealing with a sero-discordant result. Participants thought in these cases, the HIV-negative partner would begin to blame the HIV-positive partner for being "*unfaithful*" and that the relationship may end. Conversely, many men responded to this notion that if couples had foundations of trust in their relationships they would perhaps not break up.

"…if the other is negative and the other was positive, I think it wouldn't destroy that relationship, it would actually make the relationship more stronger because the negative one would dedicate himself to the positive one, so that he would take care of him, tell him what to do."

"…so if I actually receive the results – my boyfriend positive, me, I'm actually negative – I should accept it and actually follow the structures…But I actually know that it's really difficult such things, but I have to because it's my boyfriend."

Participants also discussed how a CVCT service could affect a relationship's quality. Many men stated that if there was a sero-concordant negative result, couples would not alter their sexual behaviors; however, an equal number of men thought this result may allow a couple to remove condoms from their sexual relationships since they would perceive to be "*safe*" from acquiring HIV. For both sero-concordant positive and sero-discordant results, participants reported that couples would consistently use condoms in order to prevent any further infections. Participants stated that when there is a sero-discordant result, a couple would feel "*insecure*" at first, "*but if they really love each other*" there will be no issue.

"…I think the pre-test counseling will help most 'cause then they'll actually get to know – there will be different options…So then you actually know that even if my partner is positive, you know that you can do this and this and that. Even if my partner is negative, I can still do that, you see. So I think it will work for all partners."

Some participants stated that CVCT might disrupt patterns of violence that may have occurred if the partners had to rely on one another to share their HIV test results. Participants reported that when MSM test individually, they must deal with the result on their own and then find a time to also disclose the result to their partners, which may facilitate an argument. CVCT eliminates the need to tell a partner at a subsequent time and location, which is reported to be preferred by many participants.

Entitlement of CVCT services

Participants felt they deserved this service where they can take their partner's to receive HIV testing and counseling together. Men recollected on situations when their requests to test with their male partners were denied, stating that it reminded them of a time when the rights of MSM were not protected by law. Participants thought that since CVCT has been effective for heterosexual couples elsewhere in Africa, they should also have the option to utilize the service.

"There aren't very many options for gay men, because out there, services that are available are mostly for straight people. It's not very gay-friendly. So we need to educate health workers…to handle gay issues so that the service would be more gay-friendly and so that gay men would not be scared or shamed to take medical attention when they need it."

"This is a great service that everyone would be down for. Whether the person is straight or not, but basically it's not just about the sexual orientation, it's about who needs the service and who can benefit from the service…as long as people would be all treated as one."

DISCUSSION

Our results complement the receptiveness of CVCT among MSM in the US and show an overwhelmingly high acceptance for a CVCT service catered to MSM. The participants reported that the additive support and commitment gained from testing for HIV with a partner would facilitate the usability of the service. The majority of the participants stated that going through the counseling components of the service would allow for a couple to disclose personal information and sexual behaviors with each other, and in the presence of a trained counselor, work through these situations and strengthen their relationship. Conversely, the primary barrier to utilizing HIV testing services was reported to be an internalized fear of receiving an HIV-positive test result; however, this deterrent could be surmounted if MSM could take their supportive partners with them to test. Thus, our sample of MSM in South Africa would be highly receptive to a CVCT service.

Recently, there has been a shift toward targeting the dyadic transmission of HIV, in part due to the finding that most new infections among MSM in the

US were ascribed to main sex partners (19). Thus, having the knowledge of a partner's sero-status is possibly one of the most effective strategies in reducing the risk of HIV infection (82) due to the elimination of risk that comes from assuming or guessing a partner's sero-status. Participants discussed a large concern that men did not always disclose their known sero-statuses to their partners. In Cape Town, a small cross-sectional study indicated that only 64% of HIV-positive MSM reported confidence in disclosing their sero-status to a sex partner (76, 90). Our participants stated that if HIV testing was completed as a couple, this concern would be eliminated since their partners would be disclosed with both sero-statuses. The knowledge of a couple's sero-status also allows the counselor to facilitate discussions that enable sero-concordant negative couples to explore methods to remain HIV negative; sero-concordant positive couples to prevent re-infection and potentially transmission outside of the dyad; and sero-discordant couples to sustain safe sexual relationships.

Several studies have substantiated the discontent MSM have had with public and government clinics offering HIV testing services (85, 87). Our results confirmed these trends and showed uneasiness, and in some cases complete resentment, toward these facilities. Virtually all of the participants shared experiences where they did not feel comfortable in a public or government clinic. Many men cited being mocked for disclosing MSM behavior; others reported being forced to bring in a female partner before they were released from the facility, even though the nurses knew they were MSM and did not have a female

partner. The majority of participants felt that MSM either had to seek HIV testing services in facilities known to be *"gay-friendly"* or were deterred from testing altogether. These findings further justify the need for an acceptable HIV testing service for MSM, in which they feel comfortable using.

Participants were skeptical as to whether a facility offering CVCT services for male-male couples should also provide for male-female couples. Most participants reported feeling comfortable attending facilities that were designed specifically for MSM. Others claimed that only allowing male-male couples would restrict the service from those who fear being seen walking into a facility targeting MSM. Therefore, extreme caution should be used when determining the exact locations of facilities offering HIV testing services targeting MSM in order to maximize the anonymity of attending such facilities. Participants also reported there were very few, if any, clinics in townships that were sensitive to MSM; however, introducing a facility that targeted MSM would be highly stigmatizing in these settings. Additionally, many participants stated that services for MSM should be located in townships to allow those who cannot afford the time or cost to travel into the city area for an HIV test. Therefore, more research is needed to examine how to structure or locate a facility that attracts MSM living in townships.

Participants reported that every couple must obtain the same CVCT service, regardless of their test results, to ensure complete confidentiality of their test results. Many men reported that the methods utilized in public clinics

allowed those waiting in the lobby to discern quickly another person's test results. For example, a few participants shared that only men who are HIV-positive are called back in for test results while those who are HIV-negative are quickly debriefed in a lobby area and sent away. Additionally, many participants also stated that a couple should have the ability during the service to discontinue a couples-based test and test as individuals. Participants expressed that due to the immense variety of partnerships, there should be options to satisfy the needs of each couple. Thus, establishing a routine service where couples could opt to an individual-based test and still guarantee confidentiality is highly preferred by the focus group and interview participants.

Several participants thought that all couples would use the service at some stage in their relationships and that committed couples would be the most likely users of CVCT. They reported that couples using CVCT prior to commencing a sexual relationship would benefit by impeding any blame that may come in the future due to a member in a relationship being HIV-positive prior to having sex with their partner. Conversely, participants mentioned that men who may have female partners, wives, or children while having discrete sexual relations with men would be deterred from utilizing a couples-based HIV testing service, because they felt these men would fear being in public with their male partners and revealing their sexual identities. There has been evidence of an ample portion of MSM who also had sex with women in South Africa (85). Accordingly, these MSM may serve as a bridge between the generalized and

MSM epidemics in South Africa, and must not be excluded from interventions geared toward reducing the transmission of HIV. Therefore, future studies should aim to further examine this hidden subpopulation of MSM and determine what would facilitate their decision to seek HIV testing in a facility targeting MSM.

The participants reported that the effects of CVCT on a couple depended on the HIV test results, stating that concordant negative and concordant positive results would both strengthen the bond of a relationship. However, a sero-discordant result had the possibility of negatively impacting a couple. Most participants reported that uncommitted couples would have more difficulty than committed couples dealing with this testing outcome. However, many men responded that if couples had foundations of trust in their relationships they would perhaps not break up. Some participants stated that CVCT might disrupt patterns of violence that may have occurred if the partners had to rely on one another to share their HIV test results. CVCT eliminates the need to tell a partner at a subsequent time and location, providing a method of disclosure that was preferred by many participants.

Lastly, participants felt they deserved this service where they could take their partners to receive HIV testing and counseling together. Participants thought that since CVCT had been effective in impeding the transmission of HIV, increasing and sustaining condom use, and reducing sexual risk-taking among

high-risk heterosexual populations in various African settings (16-18, 95, 102), they should also have the option to utilize the service.

The main limitation of this investigation was that focus group and interview participants were sought through organizations with close ties to MSM communities in Cape Town; thus, men who were self-selected may have been more accepting of interventions aimed to reduce transmission of HIV. Although the sample was selected to represent a diverse age range, differing races and ethnicities, and various relationship durations, the results may not necessarily be generalizable to the entire MSM population in Cape Town or South Africa.

CONCLUSIONS

Despite the refocusing of prevention research among MSM, these men continue to be under-represented in national HIV surveillance systems, targeted prevention programs, and care within many African countries (10). The majority of MSM in South Africa are not aware of the HIV status, which may in part due to the lack of interventions catered to the unique needs of MSM. CVCT provides a highly preferred opportunity for MSM to disclose their sero-status to their partners and have conversations about their sexual behaviors in the presence of a trained counselor. Participants were particularly attracted to the counseling components of the service, stating that these would allow for the couple to explore methods of how to effectively reduce their risk of acquiring or transmitting HIV. Further investigation is needed to gauge the acceptability of

CVCT among MSM in other parts of South Africa as well as the African continent where there have also been reports of emerging HIV epidemics among MSM (9, 25), in which the HIV prevalence in MSM is generally higher than among adult men in the general population (51). However, this premiere investigation exhibits compellingly high acceptance of CVCT among MSM in South Africa. Many participants encouragingly reported that given the proper advertising and design, CVCT would be highly welcomed and could work to fill the significant lack of services available and accessible to MSM in Cape Town.

ACKNOWLEDGEMENTS

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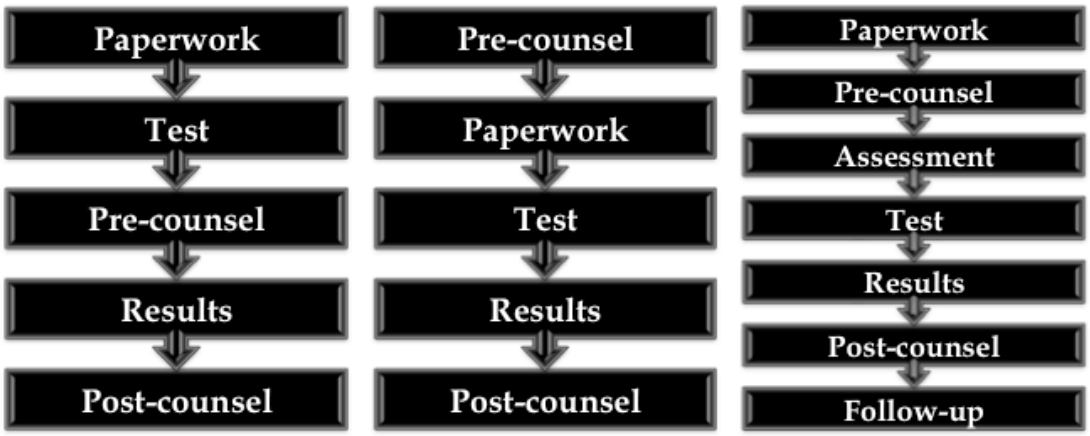
Figure 1. Suggested models for CVCT service



Model A
Frequency: 4

Model B
Frequency: 2

Model C
Frequency: 1

*Frequencies denote the number of focus groups that built each respective model
**Groups were originally given Model A and were told to manipulate or add components in order to build an ideal CVCT service

CHAPTER 5: IMPLICATIONS AND FUTURE DIRECTIONS

This thesis represents the premiere investigations into the acceptability of and attitudes toward CVCT services among MSM in South Africa. Despite the refocusing of prevention research among MSM, these men continue to be under-represented in national HIV surveillance systems, targeted prevention programs, and care within many African countries (10). The majority of MSM are not utilizing HIV testing services (4), in part due to the discontent MSM have with public and government clinics offering these services (85, 87). The results from the previous chapters confirm these trends and show uneasiness, and in some cases complete resentment, toward these public facilities, further justifying the need for an acceptable HIV testing service for MSM. The analyses presented in the previous chapters exhibit overwhelming acceptance of CVCT as an option to obtain HIV testing. The results show the additive support and commitment gained from testing for HIV with a partner would facilitate the usability of the service. Conversely, the primary barrier to utilizing HIV testing services was reported to be an internalized fear of receiving an HIV-positive test result; however, this deterrent would be surmounted if MSM could take their supportive partners with them to test. Therefore, CVCT, an intervention already proven to effectively impede the transmission of HIV, increase and sustain condom use, and reduce sexual risk-taking among at-risk groups elsewhere in Africa (16-18, 95, 102), should be offered for use by same-sex male couples in South Africa.

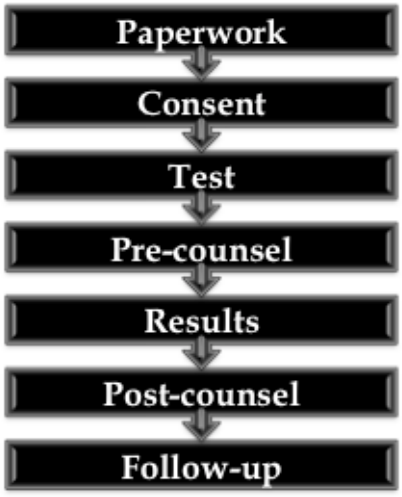
Recently, there has been a shift toward targeting the dyadic transmission of HIV, in part due to the finding that most new infections among MSM in the US were attributed to main sex partners (19). Therefore, having the knowledge of a partner's sero-status is possibly one of the most effective strategies to reduce the risk of HIV infection (82), due to the elimination of risk that comes from assuming or guessing a partner's sero-status. Our results substantiate the large concern that men do not always disclose their known sero-status to their partners and emphasize that if HIV testing were completed as a couple, this concern would be eliminated. Campaigns should take advantage of this finding and relay the message to MSM to not only know their own sero-status, but to also know that of their partner.

Despite the efficacy of consistent condom use, combined data from nine sub-Saharan African countries showed that one out of every two MSM in 2010 reported condom use at last sex (3). In one urban African setting, researchers demonstrated that the reporting of recent UAI was significantly associated with not having access to prevention interventions (83), thus highlighting the necessity of an accessible service with consistent condom promotion targeted toward MSM populations in sub-Saharan Africa. There has been evidence of differential patterns of condom use between casual and main sex partners; that is, men were less likely to use condoms with main partners than casual partners whether their partner's sero-status was known to be negative or unknown (19). CVCT has the potential to empower MSM in South Africa to know the HIV

status of their partner. The service allows sero-concordant negative couples to explore methods to remain HIV negative; sero-concordant positive couples to prevent re-infection; and sero-discordant couples to sustain safe sexual relationships. Further, the counseling components of CVCT promote open and honest conversations mediated by a trained counselor, which may also impact the utilization of safer sex methods that are sustained in future relationships.

The results depict the importance of complete confidentiality surrounding the structure of HIV testing services. Therefore, when implementing CVCT, establishing a routine service that all couples obtain, regardless of their test results, would guarantee confidentiality. This thesis presents three different models of CVCT that focus group participants built; however, there are similar components across the models that were agreed upon by all participants. Thus, we present the final model to be:

Figure 5.1. Suggested final model for CVCT service



The ideal service should include minimal, only necessary, paperwork that is sensitive to MSM and to various types of relationships. Then, the counselor should review the paperwork and ensure both men separately consent to completing the HIV testing service as a couple. This would be the opportune time to offer a couple to choose to continue together or complete the service individually. Alternatively, some couples may choose to receive the counseling together, but obtain their individual HIV test results in separate rooms before sharing them with each other. Our results demonstrate that due to the numerous types of male-male relationships, offering multiple options to satisfy the unique needs of each couple is highly preferred. There is a lack of services that MSM feel comfortable using and where these men are able to safely disclose their sexual behaviors; therefore, the counselors must be trained in facilitating open conversations while remaining impartial during any disputes that may arise between the men. Finally, a follow-up component should link HIV-positive men to various support groups and medical care, as well as offer all men the option to be contacted by the CVCT facility to remind them of an upcoming appointment or a reminder to pick up treatment.

Our results depict the ideal facility functioning like a community center in order to provide maximum comfort and minimize the potential for stress. That is, couples entering the facility should be warmly greeted and offered a beverage, such as water or tea. Reading materials and informational videos on sexual health are preferred and should be provided while couples wait their turn to

commence the CVCT service. Participants unanimously agreed that an ideal facility would be accessible through public transport or be within close proximity to potential clientele. Facilities provide many benefits if located in the city because of multiple methods of transportation to these areas, as well as the provision of an additional sense of anonymity in a highly populated setting. However, the importance of making these facilities available in more rural townships should not be underestimated. This would increase the accessibility of CVCT by couples that may not be able to afford transport costs or take the time to travel the longer distances to urban areas. Lastly, our results conclusively demonstrate no preference for staff in these facilities to be of a certain gender, race/ethnicity, or age; however, counselors and nurses should be able to offer the service in a variety of languages that meet the needs of the local population. Counselors should be neutral, unbiased, non-judgmental, and have experience dealing with same-sex couples. It is imperative for counselors to be able to meet the unique needs of each couple and facilitate potentially sensitive conversations in which couples may disclose risky behaviors, such as outside partners.

The results strongly suggest that there should be no restriction based on the duration of a couple's relationship to use CVCT services, as this would disallow a multitude of couples who are able to commit early in a partnership from benefitting from these services. However, our findings demonstrate a debate over the allowance of male-female couples in a facility targeting male-male couples. A facility available for use by both male-male and male-female

couples would potentially reduce any stigma that would be placed on couples seen entering the building; however, this may cause deterrence for some same-sex couples that would likely feel uncomfortable if someone they knew who was not MSM saw them. Thus, facilities should provide the element of anonymity for those using the service, e.g. individual rooms rather than communal lobbies, to ensure the complete confidentiality of the couples' identities. Further, extreme caution should be used when deciding the location of facilities offering HIV testing services in order to reduce any stigma that may be attached to attending the facility, e.g. in an accessible area, but not on a main road.

A major issue when attempting to implement services catered to MSM in African settings is the illegality, and subsequent stigmatization, of homosexual behaviors. Sex between consenting adult men is presently punishable by law in 31 sub-Saharan African countries, with potential to be sentenced to death in four of those countries (64). Subsequently, within Africa, there are widespread beliefs that male-male sexual behavior is "un-African" (9). Despite these challenges for scaling up interventions and services toward universal access, South Africa is a unique nation due to its progressive constitution that protects the rights of MSM. With evidence that suggests resurgent HIV epidemics among MSM in many African countries (9, 11, 12, 25), the legal equality of MSM in South Africa should be represented in the services specifically catered to this at-risk population. Overall, our results illustrate that MSM deserve a service where they can take their partners to receive HIV testing and counseling together. Due to the proven

efficacy of CVCT among heterosexual couples elsewhere in Africa (16-18, 95, 102), MSM should also have the option to utilize the service.

There has been strong evidence that MSM in the US would be highly receptive to CVCT services (101). This thesis complements the US study by demonstrating an overwhelmingly high acceptance for a couples-based HIV counseling and testing service catered to MSM in South Africa. These parallel findings imply the potential for broader applications of CVCT in additional settings with high HIV prevalence among MSM. In Africa, several studies confirm that HIV prevalence among African MSM is generally higher than among adult men in the general population (51). Additionally, there has been increased concern about resurgence in HIV infection among MSM throughout the world (43-49). Thus, substantial research should be conducted to determine if CVCT would be accepted by MSM in other settings as an acceptable method of receiving HIV testing.

APPENDICES

APPENDIX 1: EMORY UNIVERSITY IRB DOCUMENTATION

EMORY UNIVERSITY | Institutional Review Board

FROM: Carol Corkran, MPH
Senior Research Protocol Analyst

TO: Robert Stephenson, PhD
Principal Investigator

DATE: February 19, 2010

RE: **Clarification of Exempt Status**
AM1_IRB00035320
Amendment 1 for IRB Study #IRB00035320
Acceptability of CVCT among MSM in South Africa & Namibia

Thank you for requesting clarification of whether the above-referenced study still qualifies as exempt in view of a change in plans. We have reviewed the information you submitted to the IRB on **02/18/2010** and find that the project, as changed, is still exempt from further IRB review.

As you know, a determination of exempt status is good indefinitely unless something changes substantively in the project that affects our analysis. The PI is responsible for contacting the IRB for clarification about any substantive changes in the project. Therefore, please do notify us if you plan to:

- Add a cohort of children to a survey or interview project, or to a study involving the observation of public behavior in which the investigators are participating.
- Change the study design so that the project no longer meets the exempt categories (e.g., adding a medical intervention or accessing identifiable and potentially damaging data)
- Make any other kind of change that does not appear in the list below.

Please do not notify us of the following kinds of changes:

- Change in personnel, except for the PI
- Change in location
- Change in number of subjects to be enrolled or age range for adults
- Changes in wording or formatting of data collection instruments that have no substantive impact on the study design

For more information about the exemption categories, please see our Policies & Procedures at www.irb.emory.edu. In future correspondence about this study, please refer to the IRB file number, the name of the Principal Investigator, and the study title. Thank you.

Sincerely,

Carol Corkran, MPH
Senior Research Protocol Analyst
This letter has been digitally signed

Emory University
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An equal opportunity, affirmative action university

APPENDIX 2: WITS UNIVERSITY ETHICS COMMITTEE CLEARANCE

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 C Rentsch/A M-Mahmoud

CLEARANCE CERTIFICATE	**M10613**
PROJECT	Acceptability of CVCT among MSM in South Africa (RESUBMISSION)
INVESTIGATORS	C Rentsch/A M-Mahmoud.
DEPARTMENT	ANOVA Health Institute
DATE CONSIDERED	26/06/2010
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 07/07/2010 **CHAIRPERSON** .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable
cc: Supervisor : Mr G Jobson

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...

APPENDIX 3: FOCUS GROUP AND INTERVIEW GUIDE

Attitudes toward CVCT among MSM in South Africa

Focus Group Discussion and In-Depth Interview Guide

I would like to thank you all for coming to this meeting. My name is Christopher Rentsch and I am conducting these discussion groups as part of a research project on HIV testing and screening among men who have sex with men in Cape Town. We are conducting this research to identify your views about possible ways of delivering HIV testing and screening services. I would like to say that there are no right or wrong answers in our discussion we will simply be discussing your views, opinions and experiences on a range of topics, so please feel comfortable to say what you honestly feel. I would like to tape record the whole session. Please do not be concerned about this: all measures will be taken by the researchers to maintain confidentiality of the discussion but the complete confidentiality cannot be guaranteed because it is possible that some focus group members may talk about what was said in the group outside of the group. For this reason I ask that you do not discuss what was said in the group outside of the group, even if you know some of the group members. Information you tell us will ONLY be used for this research project. Because we don't want to miss anything it is important that only one person talks at a time. Remember we want to hear as many different points of view as possible, so feel free to disagree with everyone else and share your own opinions. As we are tape recording the discussion we ask that people refrain from using names or indentifying information. We would like you all to have the chance to express your opinions, so please let everyone have their say. If at any time during the discussion you feel uncomfortable you are free to leave. Are there any questions before we start? Let us begin……..

1. I would like to start by talking about HIV testing, your thoughts on the process and your experiences of testing. First of all, what places in this area is HIV testing available?

2. What things/ elements do you think are important in a place you go for HIV testing? Privacy, space, accessibility, provider characteristics? Why are these things important?

3. I now want to think about the decision to go for an HIV test – what are the kinds of events/ circumstances or issues that prompt a person to go for testing? Why do you think people in this area go for testing? What stops people going for testing?

4. I would now like to switch slightly and talk about male couples. We talked about what makes a person go for HIV testing; if there were a service in which two men in a relationship could be tested together and then receive their results and counseling together, do you think people would use it?

5. Has anyone had experience of testing with a partner? Why did you make that decision? What type of service did you use? Has anyone tried to test with a partner and had been unsuccessful? Why?

6. Thinking now about relationships, are there specific events or stages in the relationship that may prompt a male couple to test together? How is this different from an individual's decision to test?

7. I now want to talk about a service that takes place in Africa in which heterosexual couples receive HIV testing together, and then receive their results and post-test counseling together. Describe process.

8. Do you think a similar process could work for male couples here? How would it need to be different? What elements would work? What elements wouldn't work?

9. What types of couples do you think would be more likely to use this kind of service? Who wouldn't want to use this service?

10. Do you think that there are ways in which testing together could affect their relationship? How? Why?

11. Do you think that testing together may change a couple's behavior? What behaviors may be changed and how? Why would the change occur?

That brings our discussion to and end. I would like to thank you all for your participation, and ask if any of you have any questions for us?

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