

https://dspace.org/

Assessing the determinants of sexual risk-behaviour amongst young men in rural South Africa to inform male-oriented HIV prevention programming

Anifowoshe-Kehinde, Adebimpe Wasilat

2009-05-04T11:20:33Z
http://hdl.handle.net/10539/6919

Downloaded from a DSpace repository. https://dspace.org/

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Unlike other sub-Saharan African countries, South Africa has not yet experienced declining levels of HIV infection[1]. Based on routine antenatal clinic surveillance, the country is estimated to have the largest number of people (5.5 million) living with HIV/AIDS in the world as of the end of 2005. This prevalence was much higher than that of the sub-Saharan African region as a whole[2]. Over two decades into the HIV/AIDS epidemic much is known about the dangers of HIV and how to prevent new HIV infection[3, 4, 5]. Yet the epidemic continues to grow, devastating households, communities and society as a whole. While prevalence appeared stabilizing over the past three years, this is most likely a consequence of high death rates rather than slowing incidence[6].

The very high level of new infection occurring in the general adult population indicates that knowledge has not been adequately translated into practice. Some researchers have argued that while knowledge and awareness of HIV/AIDS and the scope of the problem are important, they are not enough to prevent new infection. Among the adult population, heterosexual transmission accounts for the overwhelming majority of all HIV infections. "An important feature of the epidemic in the heterosexual population is the age difference of infected individuals; predominantly young women and older men, and overall a disproportionate number of people between the ages of fifteen and forty"[7].

In the absence of effective vaccines or cures for HIV, coupled with limited accessibility to anti-retroviral therapy, great emphasis has been laid on attempting to influence behaviour change as an important means of primary HIV/AIDS prevention. Prevailing

interventions focus on promoting sexually responsible behaviour in the population through the 'ABC' approach. The approach, which advocates delayed sexual debut for adolescents (A, abstinence), partner reduction (B, be faithful to a single uninfected partner or reduce number of concurrent or serial sexual partners), and improving access to condoms and information regarding their use (C, condoms) has been the cornerstone of the primary prevention strategies[8, 9] and has been widely promoted both in South Africa and worldwide. An important adjunct to this has been efforts to improve STI services with syndromic management [8].

1.2 Rationale and Justification for the study

The relatively high prevalence of HIV/AIDS in the country indicates that new infections still occur continually and at an alarming rate in the populations. Given the greater power and control men have over sexual relationships compared with women, males, especially young men, constitute an important target group for preventing further HIV transmission.

Less has been written about HIV/AIDS research and intervention programmes that specifically target men in South Africa. Until recently, women have been the primary focus of sexual behaviour change due to their increased vulnerability to HIV infection. This approach fails to take into account gender and power imbalances, and does not encourage men to take responsibility for their own health or that of their partners and family. To fill this gap, this study conducts a secondary analysis of data to investigate factors associated with high risk sexual behaviour in young men in order to design interventions that actively involve men in HIV prevention programmes.

1.3 Problem Statement

In spite of mounting efforts to prevent new HIV infections in South Africa, rates of infection are persistently high with an increased burden on women. Given profound gender-based inequalities, men play a key-role in sexual decision making.

1.4 Study aim and Objectives

1.4.1 Study Aim

This study aims to explore opportunities for engaging men within HIV prevention activities in rural South Africa.

1.4.2 Study Objectives

- **i.** To identify determinants of risky sexual behaviour among a random sample of 14-35 year old men in rural South Africa.
- **ii.** To apply the findings for future HIV preventive policy and programme development.

CHAPTER TWO

LITERATURE REVIEW

2.1 HIV/AIDS in South Africa

South Africa is experiencing one of the fastest growing HIV epidemics in the world. About 5.5 million people were living with HIV/AIDS in the country at the end of 2005. National sero-prevalence data from women attending public antenatal clinics provides measures of prevalence, which have been used to derive population based infection rates and estimates of incidence using mathematical models[10] . Data from the past fifteen years (1990-2005) provide a good estimate of trends over time in South Africa, and suggest extraordinarily high rates of new HIV infection[11].

2.2 Rapid progression in the past two decades

The onset of HIV epidemic in South Africa began in the early 1980s with just a hundred reported cases restricted to the homosexual men and those infected through blood products prior to the introduction of universal HIV screening programs in 1985[12]. However, by the early 1990s, heterosexual transmission predominated as the mode of spread of HIV infection, and with it, the concomitant HIV epidemic in newborns and young children through perinatal transmission [12]. Over two decades since the first cases of HIV were diagnosed in the country in 1982, the number of people infected with HIV has increased exponentially from a handful of cases to 5.5 million at the end of 2005. In 1990, 0.7% of pregnant women attending public sector antenatal clinics were HIV positive. By the end of 2005 - over a fifteen year period, HIV sero-prevalence in this group has increased explosively to 30.2%. What was considered a silent HIV epidemic at

the initial stage later emerged first as an urban phenomenon, spreading rapidly into rural areas of the country, and has now developed into a large scale generalized HIV/AIDS epidemic. In spite of the relatively late introduction of the epidemic in South Africa compared to Eastern and Central Africa, it accounts for currently 10% of the global burden of infection [11].

As in the other parts of sub-Saharan Africa, young people especially, women are at the centre of the South African HIV/AIDS epidemic[13, 14, 15, 16]. Young women and girls are more vulnerable than their male counterparts for biological, social and economic reasons. Pettifor et al found that 77% of the HIV-positive youth are women. In addition, nearly one in four women ages 20-24 are HIV-positive compared with one in fourteen men of the same age group [15]. Consistent with this, the recent HSRC national HIV survey found a four fold increase in the female to male ratio (16.9% vs. 4.4%) of HIV prevalence among youth aged 15-24 years[17].

2.3 Factors driving the HIV/AIDS epidemic in South Africa

2.3.1 Biological Factors

2.3.1.1 Other Sexually Transmitted Diseases

STDs have long been recognized as a major risk factor for both HIV acquisition and transmission. It is well established that the presence of untreated STIs such as gonorrhoea, syphilis, chlamydia, chancroid and other treatable sexually transmitted diseases during unprotected sex enhances both infectiousness and susceptibility to HIV [18, 19, 20, 21, 22, 23, 24, 25]. The presence of untreated STIs during unprotected sex substantially increases susceptibility to HIV infection by recruiting HIV-susceptible inflammatory cells to the genital tract as well as by disrupting the genital mucosal barriers to infection[26, 27] thereby creating a portal of entry for the HI-virus. In both men and women,

these STIs increase HI-Viral shedding into genital fluids, so increasing the probability of HIV transmission between partners [26]. This renders people who are HIV-positive and have a sexually transmitted co-infection more infectious to their sexual partners[28].

Studies have revealed that these STIs account for a significant proportion of new HIV infections [23, 25, 29, 30, 31]. According to a systematic review, genital ulcerative disease (GUD) appears to have a greater impact than non-ulcerative disease (NUD), and men are more affected than women by the effects of STDs on susceptibility to HIV. They noted that GUDs increase male susceptibility to HIV infection by four fold and female susceptibility by about three fold, whereas NUDs increase male susceptibility three fold and female susceptibility two fold. In addition, the combined effect of the HIV-susceptible and the infectious partner both having an STD, is greater than when one alone has the STD [25]. The presence of other STIs has also been found to be associated with HIV incidence in discordant couples. A recent study of 1076 HIV-serodiscordant couples in Rwanda found that among the 46 individuals who seroconverted, 56% of the men and 41% of the women reported a sexually transmitted infection prior to seroconversion. After adjusting for various factors, history of sexually transmitted infections was associated with a 3 times higher risk of HIV infection[32].

The concentration of HIV-1 in semen is likely to be an important determinant of HIV-1 infectiousness. While most studies indicate that both ulcerative and non-ulcerative STDs increase the risk of HIV transmission by approximately three-to-five folds, a case control study has shown an eight-fold increase of viral shedding in the semen of HIV-1 positive men with urethritis (particularly gonococcal urethritis), compared with HIV-1 positive men without urethritis, who had similar CD4 counts and blood viral burden [23]. Another study that examined the effect of symptomatic urethritis on HIV-1 shedding in semen of HIV-1 seropositive men with or without urethritis showed that men with non gonococcal urethritis and genital ulcer disease shed significantly greater quantities of HIV-1 in semen compared with men with non gonococcal urethritis without genital ulcer disease [33]. These findings help to explain the increased rate of heterosexual HIV transmission from male to female and suggests that an HIV infected man with a classical asymptomatic STI for example, is more likely to transmit the HI-virus to as many women he has sexual

encounter with through multiple partnerships, thus fueling the epidemic. Additionally, the co-interaction of other sexually transmitted infections from multiple partners further magnifies the rapid acquisition and spread of HIV. Coetzee & Johnson have noted that STIs are more likely to increase the risk of HIV transmission when present in the HIV-negative partner than when present in the HIV-positive partner [26].

South Africa has a high prevalent of STIs compared to other African countries[34, 35, 36] which might have contributed to its growing HIV/AIDS epidemic. A study that investigated changes in sexual behaviour and prevalence of STIs following a major HIV prevention programme in the South African mining community found an increased prevalence of curable STI: Chlamydia, syphilis, gonorrhoea [37]. Given that the sexual transmission of HIV occurs more readily in the presence of other STIs due to increased HI-viral shedding when an HIV-infected partner has an STI, the very high HIV transmission rate in the country can be attributed in part to the large burden of other untreated sexually transmitted infections.

Prompt and appropriate treatment for STDs plays a crucial role in HIV prevention by reducing individual HIV risk associated with symptomatic STDs [31]. A randomized controlled trial in the Mwanza region of Tanzania has demonstrated a 40% reduction in HIV transmission in areas where there was an improvement in the management of STIs[38]. Because STIs especially N. gonorrhoea and C. trachomatis may have few symptoms [28, 39, 40, 41] particularly among women; because not all those who are symptomatic recognize the meaning or importance of their symptoms and seek care; because people do not seek care due to perceived stigma, cost or unpleasant services at the STI clinics; and because not all those who seek care are adequately treated [42, 43] it is highly probable that many STI infections remain either untreated, inadequately or partially treated, creating a conducive medium for the spread of HIV/AIDS. This may be particularly the case in women, where STIs may go unrecognized for quite some time, and further exacerbate their susceptibility to HIV infection.

2.3.1.2 Lack of Circumcision in men

Another important factor in the epidemiology of HIV/AIDS is the interrelationship between male circumcision and HIV transmission. Since 1989 there has been mounting evidence that circumcised men are at lower risk for acquiring HIV infection than uncircumcised men [20, 44, 45, 46, 47, 48]. While circumcision of the penis is believed to reduce the risk of HIV infection in males, uncircumcised men appear to be at increased risk of acquiring and transmitting HIV. Cameron et al in their study among men who visited commercial sex workers in Nairobi, Kenya showed that increased risk of HIV acquisition was independently associated with being uncircumcised (an 8.2 fold increased), compared with circumcised men [20]. An occupationally based prospective cohort study in Kenya also found that uncircumcised men were at four fold increased risk for acquiring HIV-1 infection [45]. Lack of male circumcision in the presence of STDs is also known to augment the transmission of both genital ulcer diseases and HIV [20, 44]. It has been noted that when a large proportion of men are uncircumcised and sexually transmitted diseases are common (as it is in South Africa), conditions are ideal for an explosive epidemic of HIV infection [44,49].

Researchers have observed the impact of male circumcision on the discrepancies in the reported adult HIV prevalence in the different regions of sub-Saharan Africa [49, 50, 51]. Wilson observed that circumcision may have contributed to the relatively lower rates of HIV infection in West African countries where it is widely practiced, as compared to Southern African countries where it is less commonly practiced i.e., relatively low HIV/high circumcision rate in West Africa, typically intermediate levels of each in East Africa and high HIV/low circumcision rate in Southern Africa [50].

Evidence on the protective effect of male circumcision however has been documented. A meta-analysis found that male circumcision is associated with a reduced risk of HIV infection in sub Saharan Africa [47]. Additional data from a cohort of the Rakai STD Control for AIDS Prevention Study suggest that circumcision may be highly protective

among HIV-negative men in a discordant relationship, and HIV-positive circumcised men may be less likely to transmit the virus to their female partners [46]. A recent cohort study conducted among circumcised men in India also noted a 6.7-fold protective effect of circumcision on HIV-1 acquisition but, this effect was not found on the risk of other STIs [48] – suggesting that the effect may be due to physiological factors and not confounded by reduced behavioural factors. A more recent randomized controlled intervention trial conducted among young men in a general population of South Africa also demonstrated that male circumcision provides up to 60% protection against HIV acquisition after controlling for sexual behaviour change associated with the intervention [51]. The authors remarked that this degree of protection is equivalent to what a vaccine of high efficacy would have achieved.

2.3.2 Behavioural Factors

Risky sexual behaviour is probably the key driver of the South African HIV/AIDS epidemic. Surveys show that people still engage in unsafe sex practices including early initiation of sex [52], unprotected sex with multiple partners [35, 41], poor and inconsistence male condom usage [53], dry sex [54], anal sex [55, 56], sex while infected with sexually transmitted diseases [35, 53] and in the presence of genital bleeding [57, 58].

2.3.2.1 Early sexual debut

Sizeable numbers of young South Africans initiate sexual activity in early adolescence. Pettifor et al in their study found that the mean age of first sex for males was 16.4years and 17years for females among youth 15-24 years [15]. This finding is consistent with the recent HSRC survey, which revealed the median age at first sex in this group as 17 years (both sexes). Overall, very few children in the 12-14 year age group (1.9% males and 1.5% females) reported engaging in sex [17]. However, a study based on the analysis of

sexual behaviour data from a cross-sectional household survey in rural KwaZulu Natal demonstrated that significant proportion of young men aged 15-24 experienced sexual debuts before the age of 15. In addition, those men with sexual debut at less than age fifteen reported risk behaviours at first sexual experience including unprotected sex, a casual partner and not feeling they had been "ready and wanted to have sex"[52]. It is well known that early sexual intercourse carries increased risks of sexually transmitted diseases and unwanted pregnancies[59]. While risk is primarily dependent on choice of partner (low or high risk) as well as partner's probability of being infected, adolescents who begin sexual activity in the early teen years are more likely to have a higher chance of STDs including HIV infection than those who delay given the long period between sexual initiation and marriage, and the fact that many young people generally do not take preventive measures to avoid infection at the time of their sexual initiation.

Beside the risk of infection, studies have found a correlation between early sexual initiation and subsequent higher risky sexual behaviour in both sexes but more commonly in men. A growing body of evidence suggest that those men who start sex younger establish a pattern of sexual conduct that continues into adulthood including multiple premarital sexual partnerships [60] and extramarital intercourse when married[61, 62, 63, 64]. Analysis of survey data from four developing countries has shown that characteristics of premarital conduct, in particular age at sexual debut and number of premarital partners in men, are associated with the probability of extramarital sex later in life [61].

2.3.2.2 Multiple sexual partnerships

The increased risk of HIV infection with concurrent sexual partners is well documented. A stochastic simulation of HIV spread under different partnership scenarios showed that concurrent partnerships are an important independent risk factor for HIV transmission[65]. Evidence suggests that many young South African men still engage in multiple concurrent partnerships [41, 66] often with unprotected sex. In South Africa, increase number of sexual partners especially among men is socially acceptable and encouraged[67,

[68, 69] while women are expected to be monogamous and unquestioning of their partner's behaviour. Moreover, having many sexual partners is being equated with popularity and importance in men's traditional role since male sexual prowess is valued as an indication of men's ability to ensure the continuation of the lineage [66]. As noted by Mager, multiple partners considerably enhanced the prestige of boys[69]. However, this has a serious implication for the rapid spread of HIV since larger numbers of partners are sexually connected[70], and the virus can spread across each concurrent connection available during the peak infectious period [65]. Those men who engage in multiple partnerships and practice unprotected sex put themselves and all of their sexual partners at risk of HIV infection. According to Morris & Kretzschmar, multiple concurrent partnerships can dramatically change the early course of an epidemic by increasing the growth rate and the number of infected people exponentially[65]. Shelton et al also argued that the rate of change of sexual partners (especially concurrent partners) is a crucial determinant in the spread of sexually transmitted infections (STIs) including HIV. In addition, HIV viral load and therefore infectiousness is dramatically higher during the early (acute) stage of HIV infection, so transmission would be particularly heightened by partner change among newly infected people[71].

A study conducted in a rural district of South Africa revealed that about forty percent of sexually active men had more than one concurrent sexual partner in the last three months prior to the survey [41]. Pettifor et al in their study found 44% of 15-24 year old men having more than one sexual partner in the last year [15]. The most recent HSRC study (2005) also found that young males reported more multiple partnerships than all older males with nearly half of males aged 15-19 years having more than one partner in the past year. Further, males living in informal settings (urban/rural) had more multiple partners than those living in formal urban areas. In particular, African and coloured males had higher rates of multiple partnerships [17].

2.3.2.3 Unprotected sex

There is a clear link between unprotected sex and STIs including HIV. Unprotected sex especially with greater number of sexual partners increases risk of HIV acquisition and transmission; this risk is even high in the context of a generalized epidemic as is the case in South Africa. Despite compelling evidence on the protective effect of condoms against HIV when used correctly and consistently during sexual activities, findings from numerous studies suggest that condom use is generally too low to impact high levels of new infection in South Africa. Pettifor et al in their study found that among youth who had sex in the preceding 12 months one-third reported always using condom; two-thirds were still not using condoms consistently. Among sexually experienced youth, about half of them reported using a condom at last sex. They noted that males were more likely than females to report condom use at last sex [15]. However, the 2005 HSRC survey observed a rising levels of condom use. It found that youth had significantly higher rates of condom use than adults with the highest rates amongst Africans aged 15-24. Males with multiple partners and those living in rural informal settings had higher rates of condom use at last sexual intercourse, but rates were lowest amongst white males. Additionally, single respondents were considerably more likely to use a condom than those who were married or cohabiting [17].

It is well documented that condom use is low in steady relationships. While limited condoms are best used in casual sex, which carries the highest risk, it is worth noting that much HIV transmission also takes place between steady partners[72]. It is estimated that 60-80% of African women who are HIV positive have had sex solely with their primary partner but became infected because they were in a weak position to negotiate safer sex or prevent their partners from having additional sexual contacts [28]. Studies have observed that people in steady or regular relationships are less likely to use condom consistently [3, 73, 74, 75] as they are more concerned about pregnancy prevention than disease prevention as the level of trust between partners increases. Consistent with other numerous studies, Maharaj & Cleland had found widespread disapproval of condom use within marriage[76]. According to an analysis of data from a household survey conducted in KwaZulu Natal

[75], among respondents who were married or in a cohabiting relationship, just a small proportion (14% of men and 17% of women) reported consistent or occasional condom use while 86% of men and 83% of women had never used a condom or had done so only at the beginning of their marital or cohabiting relationship. However, condom use is more prevalent among those men who are not in a steady sexual partnership than among others [75]. In another study conducted among Southern African University students, students in a steady relationship reported a lower frequency of condom use than did those not in a steady relationship[77].

Self-perceived risk of HIV infection appears not to influence condom use among young people. Maharaj found that those young men and women who perceived themselves as having a medium to high risk of HIV infection were less likely to use condoms than their counterparts who perceived themselves as being at no risk [75]. In contrast, a previous study conducted among South African University students found that perceived susceptibility to HIV infection was positively associated with condom use[78].

2.3.2.4 Alcohol and Substance use

Alcohol or drug use are known important risk factors for HIV infection [60,74, 79, 80, 81, 82] as risky sexual behaviour is exacerbated by their consumptions. For example, consistent and correct use of condoms is diminished by the effect of alcohol or drug. Drinking to intoxication is common in South Africa with more coloured males being proportionately high risk drinkers, followed by whites and African males while Asian males were proportionately the least high-risk drinkers [17]. A survey conducted in three sentinel sites among South African adolescents suggests an increase proportion of the country's adolescents are using alcohol and other drugs, with alcohol being the most common form of substance misuse among school-going youth of both genders[83].

A history of heavy alcohol use has been correlated with a lifetime tendency toward high-risk sexual behaviours. In a study conducted among men attending beer halls in Harare, Zimbabwe, Fritz et al note that those men who engaged in sex while intoxicated reported

more recent episodes of unprotected sex with casual partners than did those men who reported no sex while intoxicated. They showed that having sex while intoxicated was the single strongest determinant of recent HIV seroconversion [79]. A population-based study that examined the association between alcohol use and a number of risky behaviour in Botswana also found a strong and consistent correlation between heavy alcohol consumption and high risk sexual behaviour in both men and women, including unprotected sexual intercourse with a non-monogamous partner, having multiple partners, and paying for, or exchanging sex for money or other resources [82]. In their study among STD patients in Cape Town, Simbayi et al found that alcohol use before sexual encounter was associated with greater numbers of sex partners, higher rates of unprotected intercourse and a history of sexually transmitted diseases [80].

A growing trend of substance use among South African adolescents has also been noted[83]. A recent qualitative study of South African adolescents' perceptions of the role of drug use on their sexual behaviour reported that the main motivation behind adolescents' drug use was social reinforcement from peer groups. Further, sexual risk behaviours were reportedly more common in males than in females. In particular, males reportedly refrained from condom use to avoid dampening the pleasure of sexual intercourse[84], and engaged in sex with multiple partners due to the perceived thrills of the behaviour.

2.3.2.5 Other Risky Sexual Practices

Other risky sexual practices including dry sex – inserting a variety of substances, including antiseptics, detergents, and herbs into the vagina prior to intercourse [54], unprotected anal sex [55], and sex in the presence of genital bleeding [57, 58] are prevalent in South Africa. Anal and dry sex acts are known to carry a higher risk of HIV infection because they cause abrasions to the lining of the anus or vagina that enhance HIV transmission. Studies of heterosexual HIV transmission have identified anal sex as an independent risk factor for HIV infection. Higher risk of HIV has been found among sex workers in South Africa who had anal sex with their clients [55]. In cultures where virginity

is a condition for marriage, young women and girls may try to protect their virginity by engaging in unprotected anal sex. Research into the risks of HIV transmission demonstrates that unprotected anal sex has a much higher rate (25:1) compared to vaginal and oral sex[85]. It is very unlikely that subjects who engage in these high risk practices take preventive measures to avoid HIV infection given the stigma surrounding the acts and considering the fact that most subjects are not aware of the level of risk involved. For example, condom use for heterosexual anal intercourse has been reportedly lower than for vagina sex and, even more markedly, than for anal sex among men who have sex with men [56]. Given that many of those men who have sex with men also have sex with women[86], this group particularly represents the core transmitters to the general population.

Sex in the presence of genital bleeding may play a role in facilitating HIV transmission in South Africa as direct exposure to HIV-infected blood through any means is an efficient way to transmit HIV. A study conducted among STI patients in Cape Town found a significant number of men and women who had engaged in sexual intercourse involving genital bleeding in the last three months [57]. Further, sexual exposure to blood was found to be associated with other risky behaviour. Individuals who had engaged in sexual intercourse involving blood had significantly greater numbers of sex partners, engaged in higher rates of unprotected vaginal intercourse, were significantly more likely to have exchanged sex for money or materials and were significantly more likely to have experienced condom breaks during intercourse [57].

2.3.3 Structural Factors

There is a growing recognition that women and girls' risk of and vulnerability to HIV is shaped by the deep-rooted and pervasive gender inequalities, particularly violence against them. Gender inequality, gender-based violence and male dominance play a critical role in fueling the South African HIV/AIDS epidemic. They contribute to the spread of the

epidemic especially in women in three ways: the biological vulnerability due to increased abrasions and vaginal dryness, socio-cultural vulnerability, and economic vulnerability due to the general low status of women, exacerbated by a lack of sexual communication for risk-reducing behaviour. These are discussed below.

2.3.3.1 Gender inequality, gender-based violence and male dominance

2.3.3.1.i Gender inequality

Traditionally, in many parts of sub-Saharan Africa, women have played a subordinate role in reproductive and sexual decision making[87]. In addition, the low social status of many women stemming from unemployment, limited access to education and economic dependence on men leaves them especially vulnerable to sexual coercion and exploitation [67, 88, 89]. According to Zierler & Krieger, gender inequality drives women's risk of HIV infection when expressions of sexuality even in the context of consensual relationship preclude condom use because of fear of loss of material support for them or their children[90]. These inequalities are exacerbated by the cultural ideologies about masculinity and femininity that afford men with power and authority over women[88], making men better able to determine how, when and with whom sex takes place.

The stereotypical gender roles that give rise to power imbalances contribute to risk behaviour such as multiple partnerships in men, predispose men to coercion, rape and violence, as well as to reject condom use or to impose risky sexual practices on their partners. Such norms restrict women's capacity to demand monogamy from their partners, negotiate safer sex [66, 89] or enforce behaviour change on their partners thus, influencing both women's and men's vulnerability to HIV infection while fueling the overall course of the epidemic[91]. According to Dunkle et al, women with controlling partners were more likely to report that they had never used a condom. They have demonstrated a strong association between high levels of male control in a woman's current or most recent relationship and her HIV seropositivity[92].

Cross generational relationships (age-mixing) have been in existence even before the HIV/AIDS pandemic. Still today, studies have uncovered high level of age mixing patterns in sexual relationships in South Africa [14, 17, 70], a marker of greater power inequalities. For the older men preference for adolescent girls is rooted in the belief that young girls are less likely to be sexually experienced and less likely to be infected with HIV. In addition, older men provide gifts or offer life chances in terms of education by paying school fees as part of the sexual exchange[93]. Such practice certainly has significant implications for the spread of the HIV epidemic and places young women at increased risk of becoming infected. Some have argued that cross generational relationships, characterized by more frequent sex, and rare condom use is a major contributor to propagating and sustaining HIV in sub-Saharan Africa, as it can account for substantial amounts of HIV transmission between different age groups, especially in women [82, 94]. Research indicates that older male partners present a greater HIV transmission risk because they are more likely than adolescent men to have had multiple partners some of whom may be commercial sex workers [14], to have had varied sexual and drug use experiences (e.g., anal intercourse or injection-drug use), and to be infected with HIV [14, 95]. This provides among others, a possible social explanation for the disparity in the relative rates of HIV infection in young men and women of similar age in South Africa [14].

There is additional evidence to suggest that young South African women in dating relationships may be coerced into having sex by their intimate partners, a trend that renders girls more vulnerable to HIV infection. In a case-control study of teenage pregnancy from township areas in Cape Town, the majority of teenagers reported having had sex against their wishes and one in ten had been raped. In addition, the majority of teenagers feared that they will be beaten or their partners would leave them if they refused to have sex; these fears were significantly associated with teenage pregnancy[96]. Pettifor et al found that among sexually experienced young people 6% reported having been forced to have sex, including 2% of males and 10% of females. In addition, young women were much more likely to report that their first sexual experience was unwanted (28%) compared to young men (1%) [15]. Qualitative studies have documented other forms

of sexual coercion and harassment to obtain sex from young women in school and employment settings[97]. According to Harrison, because male partners are usually older and stronger, the power and maturity advantage that they hold creates an environment conducive for sexual coercion[98]. A study conducted among women with steady partners in Rwanda has demonstrated a direct association between sexual coercion and current female HIV-positive serostatus [88].

Condom use has been reportedly low in cross-generational relationship possibly, due to the perception among older men that young, inexperience girls are less risky partners compared to older, matured women coupled with the general male resistance to using condom, and a lack of relationship power on the part of the young women[99]. According to Miller et al, teenage women may not have the negotiation skills needed to promote self-protective behaviour during sexual encounters or may trust the older, more experienced partner to take responsibility for the health consequences of the sexual interaction [95]. Low sexual power in women has been found to be associated with inconsistent condom use, increasing their risk for HIV infection. Pettifor et al suggest that women with low levels of control in relationships and those who experienced forced sex are more likely to use condoms inconsistently. Consequently, inconsistent condom use was significantly associated with HIV infection [99]. Poor communication between partners and lack of specific vocabulary with which to discuss sexual desires[100] may be some of the factors influencing non use of condoms in relationships marked by substantial age difference. Jewkes et al note that communication was poorer in relationships marked by a substantial age difference[96], and the likelihood of the woman being able to suggest condom use was lower[101].

2.3.3.1.ii Gender-based violence

Gender-based violence is highly prevalent in South Africa and is widely believed to have contributed tremendously to the rapidly increasing HIV/AIDS epidemic especially among women. While it is not encouraged, violence against women appears to have become

tolerated in the South African society due to the important roles played by social institutions and cultural practices in its perpetuation, including lack of institutional support such as inefficacy of the police in assisting abused women, inadequate legal protection of women from abuse and religious and cultural practices that support and reinforce notions of male authority and the subordination of women to their partners, thereby sanctioning and legitimizing a male's violence against his partner[102].Violence against other men also occurs in conflict situations[69,103] .

Apart from other factors that predispose some men to violent behaviour, it is noted that masculinity plays a significant role in perpetuating violence. As Morrell puts it, "masculinity and violence have been yoked together in South African history"[104]. Evidence suggests that apartheid was understood by black men as a project aimed at denying their manhood[105]. Historically, masculinity is expressed both as a result and reflection of the turbulent past in response to unequal power and racial oppression, and human rights violation. It is often expressed as a means for defence and of taking control over pressures and challenges[106]. Unfortunately, this socio-political violence has filtered through gender relations, whereby disempowered women have become victims of violent attacks due to perceived threat on the part of men, posed by increased women's economic and public power, and fear of loss of males' leadership status and power in the contemporary gender roles – a social attempt to deal with the feelings of emasculation[106,107] . According to Morrell, the appalling rise in incidents of rape in the country can be attributed to the masculinity response to transition[106].

In the young unmarried relationships, intimate violence is located in the contexts of intense male jealousy and feelings of insecurity, female infidelity or sexual refusal. In these contexts, violence is often used by young men against their partners as a strategy to keep the upper hand in the relationships or gain female compliance with the rules of the relationships[103]. Because men equate manhood with aggression and dominance over women, they are unwilling to compromise or share power for fear of being viewed as less than a 'real' man, and will rather resort to violence in resolving a conflict.

GBV against women in South Africa ranges from forced sex, physical and sexual assault of women [103] to wife battering[108], women and child rape[109], and intimate female homicide[110], the most serious form and consequence of domestic violence and gender inequity. Findings of the first national female homicide study in the country indicate that a woman is killed by her intimate partner every six hour[110]. The authors note that this is the highest rate that has ever been reported in research anywhere in the world. Further, the country is presumed to have the highest per capita rate of rape in the world[111]. Police statistics for the year April 2004 to March 2005 recorded 55,114 reported rapes[112]; with statistics highly conservative due to the extent of under-reporting. Of the 55, 114 women who reported rape during this period, 40.8% were children. As noted, the same prescribed gender roles that contribute to men's violence against women also compromise men's sexual risk, [111] and poses serious risks for HIV infection in both men and women.

Research both in South Africa and elsewhere have uncovered strong associations between intimate partner violence and increased risk of HIV infection among women who have experienced violence compared to those who have not [88, 92, 113, 114]. A study in Kigali, Rwanda, among women in stable relationships showed that HIV-positive women were more likely to have experienced a history of physical and sexual violence in the hand of male partners than were women without HIV [88]. Maman et al in their Tanzanian study noted that young women (less than 30 years) infected with HIV were significantly more likely to have had a physically violent partner in their lifetime and to have experienced physical violence, sexual violence, or both with their current partner [114]. A study conducted at four antenatal clinics in Soweto, South Africa, also showed that intimate partner violence and high levels of male control in a woman's current relationship were associated with HIV seropositivity, even after adjusting for the women's risk behaviour [92].

High-risk sexual behaviour has been identified among abusive men, which may render them infectious to their victims. A study conducted among young men from rural villages in the Eastern Cape found that men who raped had more lifetime partners, more risk of ever having had transactional sex, more likely to have raped a partner, more likely to

have been physically violent to a partner, and were more likely to have had a partner five or more years older[115]. Another study also found that men who had been sexually abusive were younger, reported more sex partners, were more likely to have a history of genital ulcers, more likely to have exchanged money for sex, and more likely to endorse rape myths[116].

GBV may directly increase a woman's risk for HIV infection through coercive sex in several ways: the physiology of the female genital tract makes women - especially young women- inherently more susceptible to HIV infection than men; women are twice as likely to acquire HIV from men during sexual intercourse than vice versa, and forced or violence intercourse can cause abrasions and cuts, which facilitate entry of HIV through vagina mucosa[117]. In addition, vaginal tissue absorbs fluids more easily, including semen, which has a higher concentration of the HI-virus [23, 33] than female vaginal secretions and may remain in the vagina for hours following intercourse[118]. Further, since STIs in women are more often asymptomatic, the presence of other untreated STIs in the abused women may enhance rapid acquisition and transmission of the HI-virus in both, due to the increased influx of susceptible cells already fighting STD infection [85]. Gray et al in their study have shown that the overwhelming majority of HIV incident cases occurred in persons with asymptomatic STDs during the period of seroconversion [46].

Abused women usually suffered from multiple injuries, including coital injury as a result of rape or coercion which enhances HIV acquisition. According to Shattock, rectal penetration is reported in 13% to 20% of rape cases, which is associated with eight to ten fold more efficient transmission rates than vaginal transmission. Further, anal or rectal tears or abrasions have been observed in 73% of women subjected to anal penetration. All this has profound implications when there is rape in the presence of multiple perpetrators [85]. It is also very unlikely that a woman would be able to adopt any of the preventive measures against HIV infection in the context of rape or coerced sex[119].

GBV may indirectly propagate HIV infection among women. While physically abusive relationships limit women's ability to protect themselves sexually, fear of domestic violence compounds the risk of HIV infection and transmission among the already

vulnerable women as it prevents many women to question their partners about their extramarital encounters, discuss the risk of HIV, negotiate condom use or refuse to have sex. Many live in fear of being abandoned or beaten if they resist their partners' sexual demands [85]. Victims of domestic violence may be especially unable to negotiate safer sex practices with their partners because of fear that the male partners will react violently to discussions of low risk sex [90] or the fear that safer sex negotiation may heighten the already existing violence in their relationships[120], [121] resulting in less condom use. Studies have identified a strong association between experience or the fear of partner violence and failure to use condoms or to use condoms less frequently among women attempting to negotiate safer sex in their relationships[122, 123].

Women who have experienced male violence may be prone to risky behaviour later in their lives. Several factors have been suggested to influence the relationship between experience of partner violence and sexual HIV risk behaviour in abused women including childhood sexual abuse, alcohol and/or drug use, low income and unemployment[124]. A growing body of evidence suggests that childhood sexual abuse or forced sexual initiation during adolescence predisposes women to risky sexual behaviour in adulthood including early age at first sexual intercourse and unprotected sex with multiple partners [122, 125, 126, 127, 128]. In their study, Kalichman & Simbayi also showed that women with a history of sexual assault were significantly more likely to have multiple male sex partners, greater rates of unprotected vaginal intercourse, lower rates of condom protected anal intercourse, more sexual contacts involving blood, more STIs and genital ulcers, and were more likely to fear asking partners to use condoms [125].

2.3.3.2 Migration

A number of studies have identified population mobility and particularly, labour migration as a significant risk factor in the spread of STIs including HIV/AIDS in Southern Africa[129, 130]. Gender-related norms and economic need force many men to migrate without their families in search of work where the majority live in single hostels

in the mines or large scale farms, fostering conditions for multiple sexual relationships which places them at high risk of HIV infection. Studies have documented a variety of different types of population movement, including short-term and seasonal mobility as well as long-term migration, their general associations with high risk sexual behaviour[131, 132, 133,] increased levels of risky sexual behaviour observed among migrant men, and increased risk of HIV infection for them and their non-migrant female partners [131, 134].

The most common migration pattern in Southern Africa is for men to move on their own to urban centers in search of work, leaving their partners and families in rural areas and returning home periodically depending on the distances involved [134]. This creates a demand for commercial sex, which is met by women, often themselves migrants from rural areas, who have no other way to support themselves and their children [40]. Migrant workers including long distance truck drivers may pay for sex and use substances, including alcohol as a way to cope with the stress and loneliness of living far away from home. As a result of this, they are inevitably at high risk of contracting and transmitting STIs including HIV to their partners. Studies have demonstrated considerably higher prevalence of HIV infection amongst male migrants compared with male residents. In a study that measures HIV-1 discordance among migrant and non-migrant men and their rural partners, Lurie et al showed that migrant men were significantly more likely to be infected from outside their regular relationships than from inside. Further, migrant couples were more likely than non-migrant couples to have one or both partners infected [134].

While the link between circular migration and increased risk of STIs and HIV infections in male migrants is supported by a variety of literature, it is important to examine the role of migration as a risk factor for HIV infection in the rural women as well, since, female partners of male migrants are more likely to have additional sexual partners (presumably for support) in the absence of their migrated partners. Lurie et al in their study found that females were the infected partner in almost one-third of discordant couples surveyed [134].

2.4 The role of men in HIV/AIDS transmission

A lot has been documented on the traditional notion of masculinity (a conceptualization of the male gender role and a way of affirming manhood), perpetuated and reproduced by the majority of men, and often expressed in a set of demands for sexual competence, conquest, and performance[135] as being responsible for many of the males' social, attitudes and risky sexual behaviour. As Barker points out, "Men's behaviours are a driving force behind the HIV/AIDS epidemic….. Men's use of violence against women, men's reluctance to pay attention to their health needs and men's resistance to using condoms are among the greatest challenges to reducing HIV/AIDS worldwide"[136]. Realizing the diverse and dynamic nature of masculinity constructions due to the different race, class, cultural beliefs and ethnicity, masculinity will be briefly reviewed in relation to its implication for sexual violence and HIV/AIDS transmission for the purpose of this study.

In the South African context, masculine identities include displays of sexual prowess, unflinching toughness, aggression, violence, sexual coercion and rape, multiple partnerships, alcohol and drug use[69], non-use of condom, 'hegemony' or dominance and superiority over women, stemming from a persisting patriarchal attitude that view women as inferior to men, and a reluctance to use healthcare[69,107]. To be masculine also means asserting male control over female in violent ways[103], and having undergone ritual circumcision – a rite of passage that placed young men on the path to marriage, homestead, headship and fatherhood[69]. Studies have found traditional male role to be related to more sexual partners and sexual activity, a belief that sexual relationships are adversarial, less intimate relationships with sexual partners, as well as more negative attitudes toward condom use and less consistent condom use[137].

Research from a number of settings in Southern Africa suggests most men pay poor attention to their health needs. They usually come into contact with health services less frequently [39], making them less likely to access medical, sexual and reproductive health care, less likely to access knowledge and methods for STIs/HIV prevention [87], less likely

to seek treatment for STIs when infected, and to pay attention to their sexual health. This means that those men with other sexually transmitted diseases for example, who do not use health services regularly, yet continue to engage in high-risk behaviour such as unprotected sex with multiple partners place themselves and all of their partners at risk [118]. Simbayi et al have shown that male STI patients particularly had significantly more sexual partners than women, and that those non-STI patients who had contracted an STI in the past had a significantly higher number of sexual partners than those who had never contracted an STI [35].

Compared to women, men are least likely to be tested for HIV, least likely to return for their HIV test results and post test counseling[138], and least likely to enter into treatment and keep medical appointments. In South Africa, women seem more readily than men to access HIV services. Studies have shown a marked gender difference in the uptake of these services. A study of ARV treatment conducted at the Johannesburg general hospital revealed that women accessing ARV's outnumbered men by a ratio of 2 to1. Similar finding was reported in a study of VCT uptake in the Khayelitsha clinic outside Cape Town, where fully 70% were women[139]. In her study, Maharaj observed that women were more commonly concerned about contracting HIV from their spouse or cohabiting partners than were men [75].

In addition, many men do not have adequate knowledge about HIV and other STDs (especially those in the rural areas), and do not believe it concerns them. To such men, HIV is still perceived as women's disease since national prevalence is measured through pregnant women attending public antenatal clinic[10], and because antenatal testing gives women a greater chance of being identified as HIV-positive and because of its high prevalent in women, portraying them as vectors of HIV transmission to babies and to their male sexual partners[140].

Some sexually active men may not be strictly monogamous in their relationship. Studies from around the world and more specifically in Southern Africa have shown that men on average have more sexual partners than women, including more extramarital partners [60,

[61, 66, 94]. In a study conducted in the Arusha region of Tanzania, a significantly higher proportion of males than females reported having multiple partners [60]. Additionally, some men still practice polygamy in some parts of Southern Africa [66,141]. Even where traditional polygamy is no longer the norm, men tend to have more sexual partners than women and to use the services of sex workers. This is condoned by the commonly held attitude that men's sexual desires are uncontrollable and therefore need sex with more than one woman (often concurrently). Some researchers have argued that the sexually active males are responsible for the rapid rate at which the epidemic is spreading [64, 142]. According to Kimuna & Djamba, those men who have sex outside of marriage represent the key agents of heterosexual transmission of HIV because they act as a bridge between the outside world and their household environment [64]. Because of their economic disadvantage, many women have no option but to remain in a relationship with a man even while suspecting him of having additional sexual partner(s) thus, increasing their risk of infection. A study in Botswana has shown that women's economic independence was more strongly related to women's negotiating power in their sexual relationships than any other variable explored[143].

The socio-economic advantage of men is possibly a major determinant of their multiple partnerships behaviour, and encourages both transactional sex and cross generational relationships among women. Studies suggest that those men with higher levels of education are more likely to have multiple sexual partners because of the association of higher education with higher income that allows for more disposable income for social activities that may include casual sex and being attractive as a potential partner, and because of increased travel opportunities [60, 63, 66, 70].

It is well documented that most men are reluctant to use condoms, while some may become violent if women insist on protected sex [88]. A study that investigated the acceptability of vaginal microbicide in a cross-section of South African men revealed that over half of the men surveyed disliked using condoms[144]. Another study that examined the relationship between masculinity ideology, condom attitudes, and condom use stage of change in young adult heterosexual active men found that "higher endorsement of

masculinity ideology was related to more negative condom attitudes. In addition, more negative condom attitudes were related to decreased readiness to use condoms consistently"[137].

Much has been written about men's objections to condom use, including the various myths and misconceptions (e.g., it smells, diminishes pleasure, interrupt sex, unsafe), and socio-cultural beliefs (e.g., it is disrespectful to their partners, it challenges fidelity, etc.) surrounding its use[145], making its consistent use problematic for men, and in turn, women. A number of studies have documented how economic dependence on men translates into women being in the difficult position of having to risk loss of income, food, shelter and other basic needs to prevent HIV infection with men who may not be willing to use condoms [90]. Because men wear the male condoms, they ultimately have the power to use them or not, this is where partner negotiation comes in. Given the violent nature of some men (discussed above) however, condom use negotiation may be difficult for many women. An American study that examined the influence of negotiation styles on condom use among college students in heterosexual relationship found that men were more likely than women to report being convinced to use a condom, and were more likely to convince their partners not to use a condom[146]. However while men may be concerned about pregnancy, STD and HIV prevention, they may have difficulty bringing up the subject of condoms with their partners. Carter et al found that men play a more reactive role in the negotiation of condom use, waiting for their partner to initiate that discussion [146].

Men are more likely than women to use alcohol and/or inject drugs. In the recent South Africa's HSRC survey, more males were found to be both low-and-high risk drinkers than their female counterparts [17]. In their population based survey in Botswana, Wiser et al revealed that approximately 40% of men and 20% of women reported regular drinking before sex [82].

Unprotected sex between men endangers both men and women. While the majority of men prefer to form sexual partnership with women, a substantial number of men are not

exclusively heterosexual[86]. The stigma and fear that result from this practice force men who have sex with men to conceal their sexual behaviour thus, denying their sexual risk, thereby increasing their own risk as well as the risk of their partners, male or female [147]. This stigma and marginalization also prevent them from seeking prevention needs.

In an effort to explore opportunities to engage men in HIV/AIDS prevention programmes in South Africa, this study examines determinants of risky sexual behaviour among young men from a rural setting in the South Africa's Limpopo province.

CHAPTER THREE

MATERIALS AND METHODS

3.1. Sources and Quality of data

The cross-sectional data used in this analysis comes from a survey conducted in the Sekhukhuneland region, located on the border of Mpumalanga and Limpopo provinces. Survey data was collected as part of the Intervention with Microfinance for AIDS & Gender Equity (IMAGE Study) from eight villages comprising approximately 9,500 households with a population of over 50,000 people. Information for this study was gathered from households heads and young people aged 14-35 (both sexes) between September and December 2001 by means of a structured questionnaire administered by trained field workers. Data derived from the household and young person questionnaires were employed in the present study (Appendix). The datasets were obtained in MS Access data base and have undergone extensive cleaning.

This study conducts secondary data analysis using data collected from a random sample of households and their 14-35 year old members as part of the baseline study in 2001. Two hundred households were enumerated for participation from each of eight villages- a total of 1600. Enumerated households were visited at least three times if respondents were absent. The topics covered by the household questionnaire include questions pertaining to a wide array of economic, demographic, and health-related behaviour of each member of the household, alongside their relationship to the household head. The young person questionnaire provides data on communication about sex and sexuality in the household, knowledge on HIV/AIDS, general sexual behaviour, female contraception, condom use, whether they have accessed VCT, community beliefs, and stigma and discrimination against people living with HIV/AIDS.

3.2. Study setting

Sekhukhuneland is a densely settled rural area, located on the border of Mpumalanga and Limpopo provinces. Sixty percent of the households live below the poverty line and only one-third of the population has access to employment. The area is characterized by high levels of labour migration (among both sexes). While local agriculture remains a survival tactic for many families, few have land or livestock sufficient to completely support their livelihoods. The region is served by one hospital and one health centre, while four of the study villages have primary health care clinics situated inside their borders. Six of the study villages are widely electrified, while the remaining two small inaccessible villages do not have widespread access to electricity. Water supply is very poor and is one of the major problems in the region. 47% of the households collect water from the tap in the village and supplies are often unreliable.

Data on HIV were obtained from the Department of Health national HIV prevalence survey conducted among antenatal clinic attending women. The HIV prevalence among this group was 13.2% in 2000. This figure is similar to the larger rural Limpopo province. Because the study site borders Mpumalanga, it is likely that the higher HIV prevalence in that province reflects the higher proportion of urban residents.

HIV education was largely limited to campaigns in schools and multi-media campaigns. HIV-related services were strengthened in all the local clinics in advance of the start of the IMAGE study. Available services include free condom distribution, the practice of syndromic STD management and the provision of voluntary counseling and rapid testing (VCT) for HIV.

3.3. Sample Determination and Statistical Analysis

Analysis was confined to men who were previously sexually active. A total of 880 young men, who have ever had sex were pooled from the dataset. Data transformation and

analysis was carried out using STATA software. Apart from the age group, all variables were coded as binary for analysis (Table 1). Outcome variables include early sexual debut, multiple sexual partnerships, and unprotected sex with casual partners. Exposure variables include demographics (5 items: age, marital status, education, income, and residency status), knowledge about HIV transmission, self-perceived risk to HIV infection, access to VCT, knowing someone with HIV/AIDS, household communication about sex and sexuality, HIV-risk reduction attempt, and stigma. Frequencies were calculated for all the variables. Unadjusted analysis was conducted using chi-square tests to assess associations between exposure variables and risky sexual behaviour outcomes.

Logistic regression models then examine the relationship between exposure and outcome variables after adjusting for the effects of potential confounding factors including age, marital status, education, income, and residency status.

3.4. Measurements and scale construction

Table 1

Variables	Question number	Question	Response codes	Analysis
Outcome/Dependent Early sexual debut	Y502	At what age did you first have sexual intercourse?	Age in years	Coded 'sexual debut' variable as binary **0 -** >16yrs (late debut) **1 -** </=16yrs (early debut)
Multiple sexual partnerships	Y506	How many of your partners in the last 12 months were your spouse/live in partner(s)?	Give number of partners	Coded 'Multiple partnerships' variable as binary **0 –** if answered '0/1' for either Y506/Y507 or' 0' to both Y506 & Y507 (i.e. reducing partners)
	Y507	How many of your partners in the last 12 months were sexual partners that you are not married to and have never lived with?	Give number of partners	**1 –** if answered '1' for each of Y506 & Y507 or >1 to either or both Y506 & Y507 (i.e. not reducing partners / multiple partners)
Unprotected sex	Y708	Did you use a condom the last time you had sex with your non-spousal partner?	1 = yes 2 = no	Coded condom use variable as binary **0 –** yes **1 -** no

Potential confounding factors Age	Y102	Date of birth	dd/mm/yy	Coded age group variable as categorical **1 –** 14-19 **2 –** 20-24 **3 –** 25-29 **4 –** 30-36
Marital status	Y103	Have you ever been married or lived as being married?	1= Never married 2= Currently married / living as married 3= Separated / Divorced 4= Widowed	Coded marital status variable as binary **0 –** never married (if response code was 1) **1 –** ever married (if response codes were from 2 to 4)
Education level	HH100F	Maximum level of schooling	1 = No formal schooling, illiterate 2 = No formal schooling, literate 3 = Some primary 4 = Completed primary (std 5) 5 = Some secondary 6 = Completed secondary (std 10) 7 = Attended vocational or training college 8=Attended University	Coded education variable as binary **0 –** primary or less education (if response codes were from 1 to 4) **1 -** more than primary education (if response codes were from 5 to 8)
Income level	HH100G	Income from work	1=Self-employed in agriculture 2=Self-employed in non-farm enterprise (registered business) 3= Self-employed in non-farm enterprise (unregistered business) 4= Student 5= Salaried worker 6= Domestic worker 7= Unemployed, looking for a job, often does casual, seasonal or contract work 8= Unemployed, looking for a job, occasionally gets any casual, seasonal or contract work 9= Unemployed, looking for a job, rarely or never had any work during the past year 10= Unwilling to work, retired or too young to be working 11= Unable to work (handicap)	Coded income variable as binary **0 –** Unemployed (if any of the following response codes: 4,7,8,9,10 &11) **1 –** Employed (if any of the following response codes: 1,2,3,5 & 6)
Residency status	Y109	For how many months of the last year were you staying here?	Give number of months	Coded residency status variable as binary
	Y110	If less than 7 months how was the pattern of your visits home in the last year?	1= mainly weekends 2= Mainly month ends 3= Occasional extended trips 4= Migrated in this year 5= Other	**0 -** Migrants if response code was any of 1 to 5 **1 –** non-migrants if stayed in the village for 7months or more

Explanatory variables (exposure)				
Knowledge about HIV transmission	Y1002	Do you know that a healthy looking person can be infected with HIV, the virus that causes AIDS?	1 = yes 2 = no 8 = don't know 99 = no response	Scores were first created for the knowledge variable and then coded as binary **0 –** poor/low knowledge (if got none or either of Y1002/Y1003 correct)
	Y1003	Can a pregnant woman infected with HIV transmit the virus to her unborn child?	1 = yes 2 = no 8 = don't know 99 = no response	**1 –** good knowledge (if got both Y1002 & Y1003 correct)
Self-perceived risk to HIV infection	Y1108	If you were to consider your own potential risk of HIV/AIDS now, would you consider yourself at high, medium, low or no risk at all of HIV/AIDS?	1 = High 2 = Medium 3 = Low 4 = No risk 99 = No response	Coded 'self-perceived risk' variable as binary **0 –** 'little/no risk' if response code was 3 or 4; **1 –** 'at risk' if response code was 1 or 2.
Knowing someone with HIV/AIDS	Y1001	Do you know of anyone who is infected with HIV or who has died of AIDS?	1 = Yes, but not a friend or relative 2 = Yes, friend or relative 3 = No 8 = Don't know 99 = No response	Coded 'knowing someone with HIV/AIDS' variable as binary **0 –** no **1 –** yes
Accessed VCT	Y1005	I don't want to know your result, but have you ever had an HIV test?	1 = Yes 2 = No 99 = No response	Coded 'Accessed VCT' variable as binary **0 –** no (never get tested) **1 –** yes (ever get tested)
Household communication about sex and sexuality	Y205	In your household, do you feel 'free' or open to discuss issues of sex and sexuality?	1 = Yes 2 = No 99 = Don't know	Coded 'household communication' variable as binary **0 –** no **1 -** yes
HIV-risk reduction attempt	Y802	In the last 12 months have you <u>tried</u> to do anything to decrease your risk of infection with HIV?	1 = Yes 2 = No 9 = No response	Coded 'HIV risk reduction attempt' variable as binary **0 –** no (did nothing) **1 –** yes (did something)
Stigma	Y1101	Would you be willing to share a meal with a person you knew had HIV or AIDS?	1 = Yes 2 = No 8 =Don't know 99 = No Response	
	Y1102	If a relative of yours became ill with HIV, the virus that causes AIDS, would you be willing to care for him in your household?	1 = Yes 2 = No 8 = Don't know 99 = No response	Scores were created for the variable, stigma and then coded as binary **0 –** stigmatizers (if response code was 2 from Y1101 to Y1103 and response code was 1 for Y1104
	Y1103	If you knew a shopkeeper or food seller had the HIV virus, would you buy food from them?	1 = Yes 2 = No 8 = Don't know 99 = No Response	**1 –** non- stigmatizers (if response code was 1 from Y1101 to Y1103 and response code was 2 for Y1104
	Y1104	If a member of your family became ill with HIV, the virus that causes AIDS, would you want them to keep it a secret and not tell anyone else?	1 = Yes 2 = No 8 = Don't know 99 = No Response	

CHAPTER FOUR

RESULTS

4.1 Description of Respondents

About ⅔ of the sample were 25years old or younger (Table 2). With regard to their level of education about half of the young men had primary or less education (52%) and most (79%) were unemployed. Although some (17%) of the young men are migrants, the majority of them (83%) reside permanently in the village.

Approximately 60% (465) of the young men have a good knowledge of HIV (Table 2). Self-perceived risk was low- with only 39% of the sexually active men considering themselves to be at risk of acquiring HIV infection. Only 22% reported knowing someone who is infected with HIV or had died of AIDS. Only 12% of these men had accessed voluntary counseling and testing for HIV. Half of the young men reported that they do not feel free to discuss issues of sex and sexuality in their households. While 75% held at least one stigmatizing attitude in relation to HIV, nearly ⅔ have attempted to reduce their HIV risks.

Table 2

Demographic and Behavioural Characteristics of the sample: Sekhukhuneland

Demographic Characteristics	**N (%)**
Age, y	
14-19	271 (32)
20-25	313(37)
26-30	155(18)
31-36	106(13)
Marital status	
Never married	747(88)
Ever married	98(12)
Education level	
Primary/less	439(52)
>primary	406(48)
Income level	
Unemployed	669(79)
Employed	175(21)
Residency status	
Migrant	142(17)
Non migrant	697(83)
Behavioural Characteristics	
Knowledge about HIV	
Poor	311(40)
Good	465(60)
Self-perceived HIV risk	
None/low	512(61)
Medium/high	327(39)
Accessed VCT	
Never tested	742(88)
Ever tested	102(12)
Personal experience with HIV	
No	660(78)
Yes	183(22)
Household communication about sex & sexuality	
No	407(50)
Yes	401(50)
HIV-risk reduction attempt	
No	277(33)
Yes	563(67)
Stigma	
Stigmatizers	631(75)
Non stigmatizers	214(25)

*** Missing values were excluded.**

4.2 Predictors of High-risk behaviours

4.2.1 Early sexual debut

Associations with early sexual debut are presented in Table 3. Results of descriptive analysis show that over half of the young men (approximately 56%) have had their first sexual encounter at age 16years or younger (early sexual debut).

In the unadjusted analysis (bivariate), lower levels of knowledge about HIV transmission and less prior access to VCT services as explanatory variables were strongly associated with early sexual debut. These associations failed to retain significance after adjusting for potential confounders in the multivariate analysis (Model 1*).

Table 3

Associations between explanatory variables and early sexual debut among young men 14-35 years

Explanatory variables (exposure)	N	r/n (%)	Unadjusted analysis OR (95%CI)	Model 1* aOR (95%CI)
Knowledge about HIV				
Poor	311	190/311 (61.1)	1 ref	
Good	465	246/465 (52.9)	**0.71 (0.52-0.96)**	0.93 (0.67-1.27)
Self-perceived HIV risk				
None/low	512	283/512 (55.3)	1 ref	
Medium/high	327	185/327 (56.6)	1.05 (0.78-1.40)	
Accessed VCT				
Never tested	742	426/742 (57.4)	1 ref	
Ever tested	102	45/102 (44.1)	**0.58 (0.37-0.90)**	0.85 (0.53-1.36)
Personal experience with HIV				
No	660	370/660 (56.1)	1 ref	
Yes	183	101/183 (55.2)	0.96 (0.68-1.36)	
Household communication about sex				
No	407	231/407 (56.8)	1 ref	
Yes	401	214/401 (53.4)	0.87 (0.65-1.16)	
HIV risk-reduction attempt				
No	277	161/277 (58.1)	1 ref	
Yes	563	308/563 (54.7)	0.87 (0.64-1.17)	1.40 (0.99-1.95)
Stigma				
Stigmatizers	631	360/631 (57.1)	1 ref	
Non stigmatizers	214	112/214 (52.3)	0.82 (0.59-1.14)	

*** adjusted for age-group, marital status, education level, income level, and residency status.**

4.2.2 Multiple sexual partnerships

Table 4 presents associations with multiple sexual partnerships. In the unadjusted analysis (bivariate), the associations with multiple sexual partnerships, as an outcome variable were not as strong. Poor household communication, having made no attempt to reduce HIV risk, and having a higher - self perceived risk of HIV infection showed borderline significance associations with multiple sexual partnerships. These relationships were largely maintained after adjusting for potential confounders in the multivariate analysis (Model 1*) as shown below.

Table 4

Associations between explanatory variables and multiple sexual partnerships among young men 14-35 years

Explanatory variables (exposure)	N	r/n (%)	Unadjusted analysis OR (95%CI)	Model 1* aOR (95%CI)
Knowledge about HIV				
Poor	311	76/311 (24.4)	1 ref	
Good	465	135/461 (29.3)	1.28 (0.91-1.80)	
Self-perceived HIV risk				
None/low	512	128/510 (25.1)	1 ref	
Medium/high	327	102/325 (31.4)	1.37 (0.99-1.88)	1.36 (0.99-1.88)
Accessed VCT				
Never tested	742	198/738 (26.8)	1 ref	
Ever tested	102	32/102 (31.4)	1.25 (0.77-1.99)	
Personal experience with HIV				
No	660	177/657 (26.9)	1 ref	
Yes	183	54/182 (29.7)	1.14 (0.78-1.66)	
Household communication about sex	407			
No	401	125/405 (30.9)	1 ref	
Yes		98/399 (24.6)	0.73 (0.53-1.01)	0.76 (0.55-1.06)
HIV risk-reduction attempt				
No	277	87/273 (31.9)	1 ref	
Yes	563	142/563 (25.2)	0.72 (0.52-1.01)	0.75 (0.53-1.06)
Stigma				
Stigmatizers	631	175/628 (27.9)	1 ref	
Non stigmatizers	214	56/213 (26.3)	0.92 (0.64-1.33)	

***adjusted for age-group, marital status, education, income level and residence status.**

4.2.3 Unprotected sex

Table 5 presents associations with a lack of condom use at last sex with a non-spousal partner (unprotected sex). The unadjusted analysis (bivariate) indicated that poor knowledge about HIV, lack of access to VCT services, poor communication about sex in the household, having made no attempt to reduce HIV risk, and showing stigma, as explanatory variables were strongly associated with having unprotected sex. Having a high self-perceived risk of HIV infection showed a particularly strong correlation with unprotected sex. Multivariate model (Model 1*) presented in table 5 below show that after adjustment for confounding factors, having attempted to reduce HIV risk and not showing stigma remain protective against unprotected sex, while high self-perceived risk to HIV remains the strongest significant predictor of unprotected sex.

Table 5

Associations between explanatory variables and unprotected sex with casual partners among young men 14-35 years

Explanatory variables (exposure)	N	r/n (%)	Unadjusted analysis OR (95%CI)	Model 1* aOR (95%CI)
Knowledge about HIV				
Poor	311	222/282 (78.7)	1 ref	
Good	465	270/393 (68.7)	**0.59 (0.41-0.86)**	0.69 (0.46-1.02)
Self-perceived HIV risk				
None/low	512	298/441 (67.6)	1 ref	
Medium/high	327	230/288 (79.9)	**1.90 (1.32-2.75)**	**1.81 (1.22-2.69)**
Accessed VCT				
Never tested	742	483/654 (73.9)	1 ref	
Ever tested	102	49/79 (62)	**0.58 (0.35-0.98)**	0.69 (0.40-1.20)
Personal experience with HIV				
No	660	422/575 (73.4)	1 ref	
Yes	183	108/157 (68.8)	0.80 (0.54-1.20)	
Household communication about sex				
No	407	290/369 (78.6)	1 ref	
Yes	401	221/334 (66.2)	**0.53 (0.37-0.76)**	0.74 (0.51-1.09)
HIV risk-reduction attempt				
No	277	232/257 (90.3)	1 ref	
Yes	563	298/473 (63)	**0.18 (0.11-0.29)**	**0.23 (0.14-0.38)**
Stigma				
Stigmatizers	631	416/555 (75)	1 ref	
Non stigmatizers	214	116/179 (64.8)	**0.62 (0.42-0.90)**	**0.61 (0.40-0.92)**

*** adjusted for age-group, marital status, education, income level and residence status.**

CHAPTER FIVE

DISCUSSION

5.1 Discussion of Results

This study examined determinants of sexual risk behaviour among 14-35 year old men in rural South Africa during 2001. The results of this study suggest that there were few associations between potential explanatory variables and age of sexual debut. However, men from households with higher levels of communication about HIV and who had taken steps to reduce their risk of HIV were less likely to have multiple partners. In addition, those with greater HIV/AIDS related-knowledge, higher levels of household communication, those who had taken steps to reduce their risk of HIV, and those who held non-stigmatizing attitudes had lower rates of unprotected sex.

The results of this study suggest two things. First, more than a decade into the epidemic, that only 12% of men have had an HIV test, 40% still hold basic misconception about HIV, that half do not feel they can talk about sex in the home, and that nearly 75% continue to hold stigmatizing attitudes towards the HIV-infected (Table 2) remains a very serious concern. VCT has been recognized as an essential component of HIV/AIDS behaviour change intervention and an important tool for preventing HIV transmission as it allows individuals to know their HIV status and to evaluate their behaviour and its consequences. The low uptake of VCT services found in this study is similar to findings reported in the HSRC 2002 study, which found that while most people knew about VCT service availability only about 20% made use of the services. This might be due to a lack of understanding of using these services [3].

A good knowledge about both HIV transmission and prevention is an obvious prerequisite for a positive behaviour change. Overall, the level of HIV/AIDS knowledge

found in this sample is not satisfactory considering the high levels of knowledge and awareness documented in other previous studies for South Africa. Only 60% of the men know of the facts that HIV can be transmitted by a healthy-looking person and that a pregnant woman can also transmit the virus to her unborn child. This may be related to the rural-urban gap in terms of the low penetration of information about HIV/AIDS in the rural areas where access to HIV/AIDS information is often scarce and irregular, in contrast to urban areas of the country where information is generally more accessible. Strategies to disseminate HIV information to such disadvantaged areas should include interactive and community-level forms of education.

However, the positive associations between some of the 'basics' of HIV prevention such as better knowledge, communication, and having taken steps to reduce HIV risk behaviour is encouraging, and suggest the relevance of the ongoing public information campaigns. It also suggests that even in isolated rural areas strategies that shift knowledge, improve communication and more broadly address the needs, concerns, and perspectives of men-at-risk can be effective. Finding more focused interventions that are appropriate and relevant in such contexts remains a clear priority.

Ideally, high self-perception of risk to HIV infection is expected be a major shift towards behavioural change from risk-taking to safer behaviour. A notable finding in this study is that men who perceived themselves at increased risk of HIV infection still engage in risky behaviour including unprotected sex with casual partners and multiple partnerships. This group of men particularly represents the transmitters of the epidemic. The association between high perceived risk to HIV infection and having unprotected sex found in this study is consistent with Maharaj, 2006 [75], and contrary to Peltzer, 2000 [78]. While this may be a reverse causation i.e. these men might have perceived themselves as high risk because they have not been using condoms either at all or consistently, it suggests that in a mature epidemic with high levels of generalized knowledge about HIV, men who engage in unprotected sex are well aware that they are at high risk. It also suggests that knowledge has not been translated into practice by this group of men. Yet, it may also be true that this group of men do not care about possible transmission of HIV

infection to their sexual partners. The various myths and misconceptions that people have about HIV/AIDS may have contributed to this inaction. Additionally, the low level of communication about HIV/AIDS and increased stigmatization found in this sample as in many other South African communities could have perpetuated this unsafe sex practice, since some men and women in relationship are afraid to disclose their HIV status and would rather risk infecting their partners[148]. Instances of vindictive promiscuity among those who are infected in most cases as punishment to others have been reported[148]. A low level of condom use was also reported in the HSRC 2002 survey, which found that only about a third (30.3%) of the male respondents who had sex in the preceding year used a condom during their last sexual encounter however, a significant increase use was observed among youth (57.1% for males) and among those with multiple partners [3].

5.2 Strengths and Limitations of the study

The strengths of this study include the random selection of the sample, the use of best practice techniques in conducting interviews, and the adjusting for potential confounders in the analysis. However, there are also a number of potential limitations that are important to draw attention to. Although an attempt was made to limit questions to self-reported behaviours that occurred within the preceding 12 months, the associations observed in this study may reflect a bias of recall – a limitation common in sexual behaviour surveys. In addition, respondents may have underreported or over-reported their risky sexual practices due to social desirability bias. Finally, given the substantial disparity in the living conditions in much of South Africa including access to HIV-related programming, particularly in rural and urban areas, caution should be exercised in generalizing these results to other settings.

5.3 Implication for developing interventions

Notwithstanding these limitations, the findings of this study provide useful information upon which to base HIV/AIDS intervention for men and highlight the urgent need to

channel IEC and HIV/AIDS prevention programmes directly to men. In South Africa, there have been comparatively few HIV prevention intervention programmes that specifically target adult heterosexual men as a distinct group[149], possibly due to difficulties in reaching men because of their high levels of mobility. The few implemented HIV prevention interventions for men have been undertaken at their workplaces notably the mines. However, these efforts seemed to have had little impact [149, 150]. An increasing number of innovative efforts to work with men have been developed more recently, many of which have fallen short of expectations. Some of these innovative programmes that specifically target the needs of men in relation to HIV, reproductive and sexual health will be briefly reviewed below.

5.3.1 Condom promotion and social marketing

Central to the government's response to the growing HIV epidemic is condom distribution. Since 1994, the Department of Health has procured and distributed millions of male condoms to the public sector and committed itself to making male condoms available free of charge at all clinics in South Africa through increasing supply[151]. The Department also supports partner organizations such as the Society for Family Health (SFH) in local social marketing of both male and female condoms. An example of an HIV/AIDS specific campaign was a sustained condom promotion activity conducted by the department of health in 1996/1997 using mini taxis. This involved the training of selected drivers in providing basic HIV/AIDS information and the location of free condoms on some 400 branded taxis. By the end of the project over 600 000 condoms were being distributed on a monthly basis[152]. In addition, condoms are widely available in pharmacies, shops, service stations, and most of the public toilets nationwide. While this seems a huge increase in availability, it should be noted that the impact of the intervention is determined by the number of high risk people who actually use the condoms consistently and correctly. Like in many other countries, a challenge facing the country in assessing the effectiveness of condom distribution is the difficulty in monitoring their actual usage. In investigating the fate of the 198 million condoms distributed from public health facilities in 1999, Myer et al revealed five weeks after

condom distribution that, 44% were actually used for sex, 22% were given away, 9% were lost or discarded, and 26% were still available for use[153].

5.3.2 The Mothusimpilo Intervention Project

This intervention focused mainly on two core groups perceived to be at high risk of HIV and other STIs (male mine workers and female sex workers) and to a lesser extent on youth, with the aim to reduce HIV incidence in the entire Carltonville community - with a population of approximately 200,000 people including 70,000 male miners from the nearby gold mining shafts, characterized by high levels of poverty and unemployment, and a well established sex work industry[154].This project involved three key components: HIV/STI peer education, condom promotion and distribution, and improved management of STIs. Unfortunately, an evaluation of this programme did not demonstrate reductions in the prevalence in STI or HIV and failed to achieve high levels of condom use among mine workers and sex workers. While STI prevalence among mine workers, sex workers and men in the community remained constant or slightly increased, HIV prevalence among mine workers increased significantly from 29% at baseline in 1998 to 36% at follow up in 2001. Reported number of sexual partners by mine workers in the twelve months prior to each survey round decreased significantly from 53% in 1998 to 43% in 2001, but increased among the men in the community from 37% to 45%. However, consistent condom use with casual partners among mine workers did increase from 19% to 24% and among men in the community from 28% to 37% between 1998 and 2001. Consistent condom use with regular partners among men in the community decreased from 9% in 1998 to 6% in 2001. However, very few miners reported always using a condom with their regular partner- 6% in 1998 and 4% in 2001[155].

5.3.3 The Commuter AIDS Information Project

The Commuter AIDS Information Project was a two year activity developed by the HIV/AIDS and STD Directorate of the Department of Health. This pilot project ran from October 2001 to September 2003 and was conducted by a partnership of four

organizations- Commuternet; DramAidE; the Centre for AIDS Development, Research and Evaluation (CADRE) and the National Association of People Living with HIV/AIDS (NAPWA). The project targeted the commuter population (3,56 million commuters at 20 urban sites) through providing basic HIV/AIDS information, referral information, condoms and leaflets via kiosks located at twenty urban commuter sites countrywide[152]. The kiosks, which are managed by Commuter net are situated prominently at each site and are regularly used for consumer product promotion. Two trained NAPWA members are located at each kiosk. Training and support is provided by DramAidE, and the project was promoted by Commuter utilizing exterior taxi signage, kiosk signage and advertising inserts on Star music. The Star Music concept involved the free distribution of popular local and international music interspersed with short commercials to taxi drivers on a bimonthly basis. An evaluation of the project pointed to a positive orientation of commuters to the project concept as well as to important behavioural and social responses to HIV/AIDS. Communication around the disease was pervasive and many important HIV/AIDS concepts had been internalized including the red ribbon symbol, the AIDS helpline number, the importance of condoms, the importance of HIV testing, and the fatal consequences of HIV infection[152].

5.3.4 Stepping Stones

This behavioural intervention programme was implemented in 35 communities in the Eastern Cape Province of South Africa, approaching HIV prevention from perspectives of gender issues, relationship skills and broader sexual and reproductive health concerns. It is delivered to gender- and age-specific peer groups, to allow for experimental learning[156]. Peer groups of 10 to 20 people of the same sex and similar age are formed to discuss gender roles, money, attitudes to sex and sexuality and attitudes to death. These peer environments encourage men and women of all ages to explore their social, sexual and psychological needs, analyze the communication blocks they face and make changes in their relationships. This intervention was implemented by trained, gender-matched facilitators, and utilizes adult education methods including role play, spider diagrams and similar exercises according to a prescribed manual[157]. Preliminary evaluation in South

Africa has been very promising with substantial changes in certain areas of knowledge, attitudes and practices of gender relations and HIV prevention reported[156]. A cluster randomized control trial to determine the effectiveness of Stepping Stones in preventing HIV infections and promoting safer sexual behaviour amongst youth in the rural Eastern Cape suggests that the interventions were feasible and adequately implemented[157], however the final result of the study is still in the analysis phase.

5.3.5 Men As Partners (MAP)

This program is a collaborative initiative of EngenderHealth and Planned Parenthood Association of South Africa (PPASA), currently conducted in eight of the South Africa's nine provinces including urban, semi-urban and rural communities. The program, targeted mainly at men was designed to challenge the attitudes, values and behaviours of men that compromise their own health and safety as well as the health and safety of women and children; and to encourage men to become actively involved in preventing gender based violence as well as in HIV/AIDS related prevention, care and support activities[139]. This programme involves conducting educational workshops over a period of four to five days with groups of older and younger men and mixed-sex audiences in a wide variety of settings and from many walks of life including workplaces, trade unions, prisons, faith based organizations, community halls, sporting arenas to create awareness and facilitate attitudinal and behavioural change among programme participants. An evaluation of the impact of MAP workshop methodology on men's knowledge, attitudes and practices related to a variety of reproductive health issues suggests an increase in factual knowledge about HIV/AIDS, a general positive attitudinal shift for most of the issues covered in the training including male and female gender roles, HIV/AIDS, sexual violence and relationships, as well as changes in participants practices[139, 158].

5.3.6 'Shosholoza' and 'Inkunzi Isematholeni'

These two programmes were initiated and implemented by the Targeted AIDS Intervention (TAI), a non-governmental organization based in Kwazulu Natal. Both

interventions aim to influence younger boys through education and role modeling before they become sexually active and are influenced by older boys with higher levels of HIV risk behaviour. The projects use a peer-educator model where groups of in-school younger boys (between 11 and 18 years) are offered training in HIV/AIDS and are then encouraged to share their information and skills with their peers through focus group discussions, workshops and debates, drama, role plays, simulations and message development. The focus groups discuss risky behaviours, including early sexual debut, unprotected sex, sex in the presence of STIs and under the influence of drugs and alcohol, casual sex and sex with multiple partners. Condoms are distributed through peer educators and the South African Football Association offices[140]. These programs have been credited as one of the best examples of an NGO-based response to involving men at an early age in HIV prevention programmes.

Others include the one man can campaign, which seeks to support men and boys to take actions to end domestic and sexual violence and to promote healthy, equitable relationships that both men and women can enjoy – passionately, respectfully and fully (http://www.genderjustice.org.za). While all these initiatives seem promising, they are extremely limited as desirable reduction in the epidemic level has not been achieved given the prevailing number of people living with HIV in the country[159]. There is still much to do.

Recognizing the inextricably link between masculinities, gender based violence and HIV/AIDS epidemic, with behaviour change the key to these. It is crucial to promote men's social, sexual and reproductive roles and responsibilities in ending gender-based violence against women. Strategies to constructively involve men and boys must include educating them on the relationship between men's behaviour and HIV/AIDS, male and female gender roles, healthy relationships, sexual and domestic violence, sexual rights, women and children abuse, the need to negotiate and discuss sex with their female partners, and a change in their perception of manhood.

Greater effort to design and implement HIV education and prevention campaigns for men that take into account the identity constructions should be a priority. Furthermore, the reach of such programmes must extend to isolated areas, where cultural norms remain deeply rooted, and even the basics of HIV prevention need to be reinforced.

One of such gender transformative interventions with young men 'Program H', which was implemented in some parts of the Latin American countries (including Brazil and Mexico), India, and sub-Saharan Africa namely Tanzania was proved successful in challenging norms of masculinity and confirmed that change is possible. The success of 'Programme H' lies in its ability to change traditional and social norms about what it means to be a man at both individual (encouraging individual attitude and behaviour change by engaging young men in a critical reflection on the costs of traditional versions of masculinity as well as the benefits of more gender-equitable behaviours), and community levels (by working with those who influence and model these individual attitudes and behaviours including parents, community and religious leaders, service providers, the mass media, and others) through community campaigns which aim to promote a more gender-equitable lifestyle among adult and young men (by encouraging them to reflect about how they act as men and enjoining them to respect their partners, practice safe sex, and not to use violence against women), group educational activities that creates a safe environment for young men to question traditional views about manhood, and an impact evaluation model that measures changes in attitudes and behaviours at the community level.[160] Preliminary findings of an impact evaluation study in Brazil showed significant positive changes in men's attitudes toward women, improved key HIV/AIDS related outcomes including decreased STI symptoms and increased condom use although more frequent with regular partners than with casual partners.[161]

While studies in both India and Tanzania are still underway, initial impact evaluation results showed decreased use of violence against women in the case of India, and increased HIV testing in the case of Tanzania. However, initial results have been consistent with the data from Brazil. Building on this success experience, the ministries

of health and national AIDS programmes in Brazil, Mexico and India have officially adopted Program H and are studying options for scaling up the activities[160]. This intervention program can also be funded and replicated in South Africa.

5.4 Recommendations

- Efforts should be made to reach men in various male joints and social venues such as taxi stands and truck stops, pubs, shebeens and taverns, sports arenas, men's clinics, and those in employment settings such as the mines and farms with preventive messages that highlight the risks of unprotected sex and multiple sexual partnerships.

- Policy and law against gender-based violence against women must be strengthened and consistently enforced. Such effort to promote gender equality between men and women is crucial towards achieving the fight against the twin epidemics (GBV and HIV/AIDS), which are both driven by gender roles and relations, and have devastating health consequences for women.

- Adolescent boys should be targeted in schools with preventive messages before the age of sexual initiation [52].

- Efforts to increase men's use of HIV services including STI treatment, VCT services, ARV uptake and safe circumcision must be a priority.

- While research into microbicide is still ongoing, efforts in negotiation skill for women must be strengthened since both female condom use and potential microbiocide use require their partners' support and participation.

- Structural programmes that promote gender equality and women empowerment must be put in place.

5.5 Conclusion

In conclusion, this study has demonstrated a high level of risky sexual behaviour particularly unprotected sex, among men in this population despite sustained prevention efforts to curtail the country's HIV/AIDS epidemic. It highlights the urgent need to target men as a group with behavioural interventions in order to reduce the spread of HIV and other sexually transmitted diseases particularly to women thus, reducing HIV transmission. Finally, more work is needed to develop and support innovative programmes that meet the needs of men and foster behaviour change.

REFERENCES

[1] Joint United Nations Programme on HIV/AIDS. 2006 Report on the global AIDS epidemic: A UNAIDS 10th anniversary special edition; UNAIDS-20 avenue Appia CH-1211 Geneva 27-Switzerland. May 2006.

[2] Joint United Nations Programme on HIV/AIDS & World Health Organization (UNAIDS/WHO). AIDS epidemic update; UNAIDS-20 avenue Appia-1211 Geneva 27-Switzerland. December 2004.

[3] The Nelson Mandela/HSRC Study of HIV/AIDS Team. South African National HIV Prevalence, Behavioural Risks and Mass Media: Household Survey 2002. Cape Town: HSRC Publishers.

[4] Hartung TK, Nash J, Ngubane N, & Fredlund VG. AIDS awareness and sexual behaviour in a high HIV prevalence area in rural northern Kwazulu-Natal, South Africa. International Journal of STD and AIDS 2002; 13 (12):829-832.

[5] James S, Reddy SP, Taylor M, & Jinabhai CC. Young people, HIV/AIDS/STIs and sexuality in South Africa: The gap between awareness and behaviour. Acta Paediatrica 2004; 93 (2): 264-269.

[6] Parker W. National surveys in South Africa: Implications for prevention programmes. Centre for AIDS Development, Research and Evaluation (CADRE). Presentation at the PEPFAR Prevention Meeting, Johanesburg. 26 July 2006 (cited 05 Sept 2006). Available at www.cadre.org.za

[7] Abdool Karim SS. AIDS in South Africa 2005. In: Dr Bridget Farham, editor. HIV/AIDS in South Africa. New York: Cambridge University Press; 2005. 1st ed. Pg. 33.

[8] Lamptey PR, Kamenga MC, & Weir SS. Prevention of sexual transmission of HIV in sub-Saharan Africa: lessons learned. AIDS 1997; 11(Suppl. B): S63-77.

[9] Green EC. Rethinking AIDS Prevention: Learning from Successes in Developing Countries. (1st ed.) Praeger Press, Greenwood Publishers: USA. 2003.

[10] Department of Health, 2006. National HIV and Syphilis Sero-prevalence survey of women attending Public Antenatal Clinics in South Africa, 2005.

[11] Gouws E, & Abdool Karim Q. HIV Infection in South Africa: the evolving epidemic. In: Dr Bridget Farham, editor. HIV/AIDS in South Africa. New York: Cambridge University Press; 2005. 1st ed. Pg. 48-66.

[12] Abdool Karim SS. HIV/AIDS in South Africa. 1st ed. New York: Dr Bridget Farham, 2005; pg 31.

[13] Weiss E, Whelan D, Gupta G. Gender, sexuality and HIV: making a difference in the lives of young women in developing countries. Sexual and Relationship Therapy 2000; 15: 233-45.

[14] MacPhail C, Williams BG, & Campbell C. Relative risk of HIV infection among young men and women in a South African township. International Journal of STD and AIDS 2002; 13: 331-342.

[15] Pettifor AE, Rees HV, Steffenson A, Hlongwa-Madikizela L, MacPhail C, Vermaak K, Kleinschmidst I. HIV and Sexual Behaviour Among Young South Africans: A national survey of 15-24 year olds. Johannesburg: Reproductive Health Research Unit, University of the Witwatersrand, 2004.

[16] Simbayi LC, Kalichman SC, Jooste S, Cherry C, Mfecane S, Cain D. Risk factors for HIV-AIDS among youth in Cape Town, South Africa. AIDS Behav 2005 Mar; 9 (1): 53-61.

[17] Shisana O, Rehle T, Simbayi LC, Parker W, Zuma K, Bhana A, et al. South African HIV Prevalence, HIV Incidence, Behaviour and Communication Survey, 2005. Cape Town: HSRC Press.

[18] Holmberg SD, Stewart JA, & Gerber AR. Prior herpes simplex virus type 2 infections as a risk factor for HIV infection. JAMA 1988; 259: 1048-50.

[19] Stamm WE, Handsfield HH, Rompalo AM, Ashley RL, Roberts PL, Corey L. The association between genital ulcer disease and acquisition of HIV infection in homosexual men. JAMA 1988; 260: 1429-33.

[20] Cameron DW, Simonsen JN, D'Costa LJ, Ronald AR, Maitha GM, Gakinya MN, et al. Female to male transmission of human immunodeficiency virus type 1: risk factors for seroconversion in men. Lancet 1989 Aug; 2 (8660): 403-7.

[21] Wasserheit JN. Epidemiological synergy: Interrelationships between human immunodeficiency virus infection and other sexually transmitted diseases. Sex Transm Dis 1992; 19:61-77.

[22] Laga M, Manoka A, Kivuvu M, Malele B, Tuliza M, Nzila N, et al. Non-ulcerative sexually transmitted diseases as risk factors for HIV-1 transmission in women: results from a cohort study. AIDS 1993 Jan; 7 (1): 95-102.

[23] Cohen MS, Hoffman IF, Royce RA, Kazembe P, Dyer JR, Daly CC, et al. Reduction of concentration of HIV-1 in semen after treatment of urethritis: implications for prevention of sexual transmission of HIV-1. AIDSCAP Malawi Research Group. The Lancet 1997 June; 349:1868-73.

[24] Flemming ST, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sexually Transmitted Infections 1999; 75:13-17.

[25] Rottingen JA, Cameron DW, & Garnett GP. A systematic review of the epidemiologic interactions between classic sexually transmitted diseases and HIV: how much is really known? Sex Transm Dis 2001 Oct; 28 (10): 579-97.

[26] Coetzee D. & Johnson L. Sexually Transmitted Infections. In: Dr Bridget Farham, editor. HIV/AIDS in South Africa. New York: Cambridge University Press; 2005. 1st ed. Pg. 193-202.

[27] WHO/UNAIDS. Treatment for sexually transmitted infections has a role in HIV prevention: Care aimed at the right people at the right time can reduce infections. Consultation presented at the XVI International AIDS conference, Toronto, 2006.

[28] Colvin M. Sexually transmitted infections in southern Africa: a public health crisis. South African Journal of Science 2000; 96 (6): 335-339.

[29] Robinson NJ, Mulder DW, Auvert B, Hayes RJ. Proportion of HIV infections attributable to sexually transmitted diseases in a rural Ugandan population: Simulation Model Estimates. Int J Epidemiol 1997; 26 (1): 180-9.

[30] Gray RH, Wawer MJ, Sewankambo NK, Nelsen K, Serwadda D, Chuanjun L, et al. Relative risks and population attributable fraction of incident HIV associated with symptoms of sexually transmitted diseases and treatable symptomatic sexually transmitted diseases in Rakai District, Uganda. AIDS 1999; 13: 2113-23.

[31] Oroth KK, Gavyole A, Todd J, Mosha F, Ross D, Mwijarubi E, et al. Syndromic treatment of sexually transmitted diseases reduces the proportion of incident HIV infections attributable to these diseases in rural Tanzania. AIDS 2000; 14: 1429-37.

[32] Rugafari J; Homawoo B.B; Marion-Landias S. et al. Is the occurrence of sexually transmitted infections related to seroconversion among HIV discordant couples? Sixteenth International AIDS conference, Toronto, abstract TUAC0505, 2006.

[33] Dyer JR, Eron JJ, Hoffman IF, Kazembe P, Vernazza PL, Nkata E, et al. Association of CD4 Cell Depletion and Elevated Blood and Seminal Plasma Human Immunodeficiency Virus Type-1 (HIV-1) RNA Concentrations with Genital Ulcer Disease in HIV-1 Infected Men in Malawi. The Journ Infec Dis 1998; 177: 224-27.

[34] Wilkinson D, Connolly A, Harrison A, Lurie M, Abdool Karim SS. Sexually Transmitted Disease Syndromes in Rural South Africa: Results From Health Facility Surveillance. Sexually Transmitted Diseases 1998 Jan; 25(1): 20-23.

[35] Simbayi LC, Strebel A, Andipatin M, Potgieter C, Ratele K, Shabalala N, et al. The evaluation of immediate behavioural outcomes of the syndromic management approach for the treatment of patients with sexually transmitted infections at PHC centres in South Africa: Knowledge, attitudes, beliefs and sexual behaviour. Journal of Social Aspects of HIV/AIDS Research Alliance 2004 May; 1 (1): 35-44.

[36] Johnson LF, Coetzee DJ & Dorrington RE. Sentinel surveillance of sexually transmitted infections in South Africa: a review. Sex Transm Inf 2005; 81: 287-93.

[37] Williams BG, Taljaard D, Campbell CM, Gouws E, Ndhlovu L, van Dam J, et al. Changing patterns of knowledge, reported behaviour and sexually transmitted infections in a South African gold mining community. AIDS 2003; 17: 2099-2107.

[38] Grosskurth H, Mosha F, Todd J, Mwijarubi E, Klokke A, Senkoro K, et al. Impact of improved treatment of sexually transmitted diseases on HIV infection in rural Tanzania: randomized controlled trial. Lancet 1995 Aug; 346 (8974): 530-6.

[39] Grosskurth H, Mayaud P, Mosha F, Todd J, Senkoro K, Newell J, et al. Asymptomatic gonorrhoea and chamydial infection in rural Tanzanian men. British medical Journal 1996 Feb; 312 (7026): 277-80.

[40] Mabey D. Sexually transmitted diseases in developing countries. Transactions of the Royal Society of Tropical medicine and Hygiene. 1996; 90: 97-99.

[41] Colvin M, Abdool Karim SS, Connolly C, Hoosen AA, & Ntuli RN. HIV infection and asymptomatic sexually transmitted infections in a rural South African community. International Journal of STD & AIDS 1998 Sept; 9:548-550.

[42] Abdool Karim SS. Challenges to the control of sexually transmitted diseases in Africa. American journal of public health, 1994; 84: 1891-1893.

[43] Wilkinson D, Abdool Karim SS, Harrison A, Lurie M, Colvin M, Conolly C, & Sturm A.W. Unrecognized sexually transmitted infections in rural South African women: a hidden epidemic. Bulletin of the World Health Organization, 1999, 77 (1): 22-28.

[44] Halperin DT, & Bailey RC. Male Circumcision and HIV Infection: 10 years and counting. Lancet 1999; 354 (9192): 1813-5.

[45] Lavreys L, Rakwar JP, Thompson ML, Jackson DJ, Mandaliya K, Chochan BH, Bwayo JJ, Ndinya-Achola JO, & Kreiss JK. Effect of circumcision on incidence of human immunodeficiency virus type 1 and

other sexually transmitted diseases: a prospective cohort study of trucking company employees in Kenya. Journal of Infectious Diseases 1999; 180: 330-6.

[46] Gray RH, Kiwanuka N, Quinn TC, Sewankambo NK, Serwadda D, Mangen FW, et al. Male circumcision and HIV acquisition and transmission: cohort studies in Rakai, Uganda, Rakai Project Team.AIDS 2000 Oct; 14 (15): 2371-2381.

[47] Weiss HA, Quigley MA, Hayes RJ. Male circumcision and risk of HIV infection in sub Saharan Africa: a systematic review and meta-analysis. AIDS 2000 Oct; 14 (15): 2361-70.

[48] Reynolds SJ, Shepherd ME, Risbud AR, Gangakhedkar RR, Brookmeyer RS, Divekar AD, et al. Male circumcision and risk of HIV-1 and other sexually transmitted infections in India. The Lancet 2004 Mar; 363 (9414): 1039-1040.

[49] Caldwell J, & Caldwell P. The African AIDS epidemic. Scientific American 1996; 274 (3): 62-68.

[50] Wilson D. In: The "ABCs" of HIV Prevention: Report of a USAID Technical Meeting On Behavior Change Approaches To Primary Prevention of HIV/AIDS. Washington, D.C. September 17, 2002.

[51] Auvert B, Taljaard J, Lagarde E, Sobngwi-Tambekou J, Sitta R, Puren A. Randomized, Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk: The ANRS 1265 Trial. PLoS Medicine 2005 Nov; 2 (11): 1112-1122.

[52] Harrison A, Cleland J, Gouws E, Frohlich J. Early sexual debut among young men in rural South Africa: heightened vulnerability to sexual risk? Sexually Transmitted Infections 2005; 81: 259-261.

[53] Reddy P, Meyer-Weitz A, van den Borne B, Kok G. Determinants of condom-use behaviour among STD clinic attenders in South Africa. International Journal of STD & AIDS 2000; 11:521-530.

[54] Louria DB, Skurnick JH, Palumbo P, Bogden JD, Rohowsky-Kochan C, Denny TN, et al. HIV Heterosexual Transmission: A Hypothesis About an Additional Potential Determinant. International Journal of Infectious Diseases 2000; 4 (2): 110-116.

[55] Abdool Karim SS, & Ramjee G. Anal sex and HIV transmission in women. American Journal of Public Health 1998; 88 (8): 1265-1266.

[56] Halperin DT. Heterosexual anal intercourse: Prevalence rate, cultural factors, and HIV infection and other health risks. Part 1'. AIDS Patient Care 1999; 13 (12): 717-730.

[57] Kalichman SC & Simbayi LC. Sexual exposure to blood and behavioural risks among STI clinic patients in Cape Town, South Africa. Sex Health 2005; 2 (2): 85-8.

[58] Kalichman SC, Simbayi LC, Cain D, Cherry C, & Jooste S. Coital bleeding and HIV risks among men and women in Cape Town, South Africa. Sex Transm Dis 2006; 33 (9): 551-7.

[59] Dickson N, Paul C, Herbison P, Silva P. First sexual intercourse: age, coercion, and later regrets reported by birth cohort. British Medical Journal 1998; 316: 29-33.

[60] Mnyika KS, Klepp KI, Kvale G, Ole King'ori N. Determinants of high-risk sexual behaviour and condom use among adults in the Arusha region, Tanzania. Int J STD AIDS 1997; 8:176-183.

[61] White R, Cleland J, & Carael M. Links between premarital sexual behaviour and extramarital intercourse: a multi-site analysis. AIDS 2000 Jul; 14: 2323-2331.

[62] O'Connor ML. Men who have many sexual partners before marriage are more likely to engage in extramarital intercourse. International Family Planning Perspectives 2001 Mar; 27 (1): 48-49.

[63] Hill ZE, Cleland JG & Ali MM. Religious affiliation and extramarital sex in Brazil. International Family Planning Perspectives 2004; 30 (1): 20-26.

[64] Kimuna SR & Djamba YK. Wealth and Extramarital Sex Among Men in Zambia. International Family Planning Perspectives 2005; 31 (2): 83-89.

[65] Morris M, & Kretzschmar M. Concurrent partnerships and the spread of HIV. AIDS 1997 Apr; 11: 641-648.

[66] Meyer-Weitz A, Reddy P, Van Den Borne HW, Gerjo K, Pietersen J. Determinants of multi- partner behaviour of male patients with sexually transmitted diseases in South Africa: implications for interventions. International Journal of Men's Health 2003 May; 2 (2): 149-162.

[67] Gilbert L. & Walker L. Treading the path of least resistance: HIV/AIDS and social inequalities- a South African case study. Soc Sci Med 2002; 54: 1093-110.

[68] Pettifor AE, Measham DM, Rees HV, Padian NS. Sexual power and HIV risk, South Africa. Emerg Infect Dis 2004 Nov; 10 (11): 1996-2004.

[69] Mager A. Youth Organizations and the Construction of Masculine Identities in the Ciskei and Transkei, 1945-1960. Journal of Southern African Studies 1998 Dec; 24 (4): 653-667.

[70] Dunkle KL, Jewkes RK, Brown HC, Gray GE, McIntyre JA, Harlow SD. Transactional sex among women in Soweto, South Africa: Prevalence, risk factors and association with HIV infection. Social Science and Medicine 2004; 59(8):1581-1592.

[71] Shelton JD, Halperin DT, Nantulya V, Potts M, Gayle HD, Holmes KK. Partner reduction is crucial for balanced "ABC" approach to HIV prevention. BMJ 2004; 328: 891-893.

[72] Hearst N & Chen S. Condom Promotion for AIDS Prevention in the Developing World: Is It Working? Studies in Family Planning 2004; 35 (1): 39-47.

[73] Anderson J, Wilson R, Doll L, Jones S, Barker P. Condom Use and HIV Risk Behaviors among U.S. Adults: Data from a National Survey. Family Planning Perspectives 1999; 31 (1): 24-28.

[74] Mataure P, McFarland W, Fritz K, Kim A, Woelk G, Ray S, & Rutherford G. Alcohol Use and High-Risk Sexual Behavior among Adolescents and Young Adults in Harare, Zimbabwe. AIDS and Behavior 2002 Sept; 6 (3): 211- 219.

[75] Maharaj P. Reasons for Condom Use Among Young People in Kwazulu-Natal: Prevention of HIV, Pregnancy or Both? International Family Planning Perspectives 2006 Mar; 32 (1): 28-34.

[76] Maharaj P & Cleland J. Condom Use Within Marital and Cohabiting Partnerships in KwaZulu-Natal, South Africa. Studies in Family Planning 2004; 35 (2): 116-124.

[77] Heeren GA, Jemmott JB, & Mandeya A. Psychosocial Predictors of Condom Use among South African University Students. Int Conf AIDS 2004 Jul 11-16; 15: abstract no. TuPeC4782).

[78] Peltzer K. Factors affecting condom use among South African University Students. East African Medical Journal 2000; 77 (1): 46-52.

[79] Fritz KE, Woelk GB, Bassett MT, McFarland WC, Routh JA, Tobaiwa O, & Stall RD. The Association between Alcohol use, Sexual Risk Behavior, and HIV Infection among Men Attending Beerhalls in Harare, Zimbabwe. AIDS and Behavior 2002 Sept; 6 (3): 221-228.

[80] Simbayi LC, Kalichman SC, Jooste S, Mathiti V, Cain D, Cherry C. Alcohol use and sexual risks for HIV infection among men and women receiving sexually transmitted infection clinic services in Cape Town, South Africa. J Stud Alcohol 2004 Jul; 65 (4):434-42.

[81] Kalichman SC, Simbayi LC, Jooste S, Cain D, Cherry C. Sensation seeking, alcohol use, and sexual behaviors among sexually transmitted infection clinic patients in Cape Town, South Africa. Psychol Addict Behav 2006 Sep; 20 (3): 298-304.

[82] Weiser SD, Leiter K, Heisler M, McFarland W, Percy-de Korte F, DeMonner SM, et al. A Population-based Study on Alcohol and High-Risk Sexual Behaviors in Botswana. PLoS Medicine 2006 Oct; 3 (10): 1940-1948.

[83] Parry CDH, Myers B, Morojele NK, Fisher AJ, Bhana A, Donson H, & Pluddemann A. Trends in adolescent alcohol and other drug use: findings from three sentinel sites in South Africa (1997-2001). Journal of Adolescence 2004; 27: 429-40.

[84] Morojele NK, Brook JS, & Kachieng'a MA. Perceptions of sexual risk behaviours and substance abuse among adolescents in South Africa: A qualitative investigation. AIDS Care 2006; 18 (3): 215-219.

[85] Shattock R. Sexual Trauma and the Female Genital Tract "In" WOMEN SEXUAL VIOLENCE AND HIV. The Foundation for AIDS Research. An amfAR Symposium Rio de Janeiro, Brazil, July 2005:7-8.

[86] Connel RW, Davis MD, & Dowsett GW. Man to man: Homosexual desire and practice among working-class men. In: The men and the boys. Allen & Unwin; Australia: Australian Print Group, Maryborough, Vic., 2000. 1st ed. Pg: 102-127.

[87] Mbizvo MT, & Bassett MT. Reproductive health and AIDS prevention in sub-Saharan Africa: the case for increased male participation. Health Policy and Planning 1996; 11 (1): 84-92.

[88] Van der Straten A, King R, Grinstead O, Vittinghoff E, Serufilira A, Allen S. Sexual Coercion, Physical Violence and HIV Infection Among Women in Steady Relationships in Kigali, Rwanda. AIDS and Behavior 1998; 2(1):61-73.

[89] Gupta GR. How men's power over women fuels the HIV epidemic. British Medical Journal 2002; 234: 183-184.

[90] Zierler S, & Krieger N. Reframing women's risk: Social inequalities and HIV infection. Annual Review of Public Health 1997; 18: 401-436.

[91] Rivers K, & Aggleton P. Men and the HIV epidemic, Gender and the HIV Epidemic. New York (1999): UNDP HIV and Development Programme.

[92] Dunkle KL, Jewkes RK, Brown HC, Gray GE, McIntyre JA, Harlow SD. Gender-based violence, relationship power, and risk of HIV infection in women attending antenatal clinics in South Africa. Lancet 2004 May; 363 (9419): 1415-21.

[93] World Health Organization (WHO). Violence Against Women and HIV/AIDS: Critical intersections-Intimate Partner Violence and HIV/AIDS. Information Bulletin Series, Number1; 2004.

[94] Gregson S, Nyamukapa CS, Garnett GP, Mason PR, Zhuwau T, Carael M, et al. Sexual mixing patterns and sex-differentials In teenage exposure to HIV Infection In rural Zimbabwe. Lancet 2002 Jun; 359: 1896-903.

[95] Miller KS, Clark LF, Moore JS. Sexual initiation with older male partners and subsequent HIV risk behaviour among female adolescents. Family Planning Perspective 1997; 29: 212-14.

[96] Jewkes R, Vundule C, Maforah F, & Jordaan E. Relationship dynamics and teenage pregnancy in South Africa. Social Science and Medicine 2001 Mar; 52 (5): 733-744.

[97] Jewkes R; Abrahams N. The epidemiology of rape and sexual coercion in South Africa: An overview. Soc Sci Med 2002; 55(7): 1231-44.

[98] Harrison A. Young people and HIV/ADS in South Africa: Prevalence of infection, risk factors and social context. In: Dr Bridget Farham, editor. HIV/AIDS in South Africa. New York: Cambridge University Press; 2005. 1st ed. Pg. 262-284.

[99] Pettifor AE, Measham DM, Rees HV, Padian NS. Sexual power and HIV risk, South Africa. Emerg Infect Dis 2004 Nov; 10 (11): 1996-2004.

[100] Wood K, & Jewkes R. Violence, rape, and sexual coercion: everyday love in a South African township. Gender and Development 1997; 5 (2): 41-46.

[101] Varga CA. Sexual decision-making and negotiation in the midst of AIDS: youth in KwaZulu-Natal, South Africa. Health Transition Review 45-67 (Supplement 3 to volume 7).

[102] Boonzaier F. Women Abuse: A critical Review. In: Ratele Kopano & Duncan Norman editors. Identities and Relationships. UCT Press 2003; Lansdowne: South Africa. 1st ed. Pg: 177-197.

[103] Wook K. & Jewkes R. 'Dangerous' Love Reflections on Violence among Xhosa Township Youth. In: Andrea Nattrass, editor. Changing Men in Southern Africa. Zed Books Ltd; London & NewYork: University of Natal Press Pietermaritzburg; 2001. 1st ed. Pg:317-336.

[104] Morrell R. The Times of Change: Men and Masculinity in South Africa. In: Andrea Nattrass, editor. Changing Men in Southern Africa. Zed Books Ltd; London & NewYork: University of Natal Press Pietermaritzburg; 2001. 1st ed. Pg:12.

[105] Clowes L. Historical Representations of 'Race', Masculinity and Homosexuality. In: Ratele Kopano & Duncan Norman editors. Identities and Relationships. UCT Press 2003; Lansdowne: South Africa. 1st ed. Pg: 303-319.

[106] Morrell R. The Times of Change: Men and Masculinity in South Africa. In: Andrea Nattrass, editor. Changing Men in Southern Africa. Zed Books Ltd; London & NewYork: University of Natal Press Pietermaritzburg; 2001. 1st ed. Pg:3-37.

[107] Stibbard T, Paton M & Papciak-Rose E. MEN, HIV & AIDS regional conference report back. VSO-RAISA, Pretoria, South Africa 2003.

[108] Mwamwenda TS. Gender Differences in Attitudes Toward Wife Battering. Journal of Social Psychology 1999 Dec; 139(6): 790-2.

[109] Meier E. Child Rape in South Africa. Peadiatric Nursing 2002; 28(5): 532-535.

[110] Mathews S, Abrahams N, Martin LJ, Vetten L, van der Merwe L & Jewkes R. "Every six hours a woman is killed by her intimate partner": A National Study of Female Homicide in South Africa. MRC Policy brief 2004 June; no. 5.

[111] Peacock D, Khumalo B & McNab E. Men and gender activism in South Africa: Observations, critique & recommendations for the future. AGENDA 69 2006; Pg 71-82.

[112] Cooper C. Rape in South Africa. In: Rape crisis news; International issue no 6: Autumn 2006; pg 4-5.

[113] Maman S, Campbell J, Sweat MD, Gielen AC. The intersections of HIV and violence: directions for future research and interventions. Social Science & Medicine 2000; 50: 459-478.

[114] Maman S, Mbwambo JK, Hogan NM, Kilonzo GP, Campbell JC, Weiss E, Sweat MD. HIV-1 Positive Women Report More Lifetime Partner Violence: Findings from a Voluntary Counseling and Testing Clinic in Dar es Salaam, Tanzania. American Journal of Public Health 2002; 92 : 1331-1337.

[115] Jewkes RK, Nduna M, Levin JB, Jama PN, Khuzwayo N, Duvvury N, & Koss MP. Rape of women: Risk factors for raping and association with HIV risk behaviours. Int Conf AIDS 2004. July 11-16; 15: abstract no. WePeD6531.

[116] Simbayi LC, Kalichman SC, Jooste S, Mathiti V, Cain D, & Cherry C. HIV/AIDS risks among South African men who report sexually assaulting women. Amer Journ of Health Behav 2006; 30 (2): 158-66.

[117] Auerbach JD. Gender-Based Violence as a Cause of HIV Infection. "In" WOMEN SEXUAL VIOLENCE AND HIV. The Foundation for AIDS Research. An amfAR Symposium Rio de Janeiro, Brazil, July 2005:5.

[118] Anderson H, Marcovici K, & Taylor K. The UNGASS, Gender and Women's Vulnerability to HIV/AIDS in Latin America and the Caribbean. Prepared for The program on Women, Health and Development: Division of Health and Human Development with the program on AIDS and Sexually Transmitted Infections. Pan-American Health Organization; Regional Office of the World Health Organization, Washington DC; December 2002.

[119] Lyman PN. "In" WOMEN SEXUAL VIOLENCE AND HIV. The Foundation for AIDS Research. An amfAR Symposium Rio de Janeiro, Brazil, July 2005:2.

[120] Martin SL, Matza LS, Kupper LL, Thomas JC, Daly M, & Cloutier S. Domestic Violence and Sexually Transmitted Diseases: The Experience of Prenatal Care Patients. Public Health Reports 1999 May/Jun; 114 (3): 262-68.

[121] Gielen AC, McDonnell KA, & O'Campo PJ. Intimate Partner Violence, HIV Status, and Sexual Risk Reduction. AIDS and Behavior 2002 June; 6 (2): 107-116.

[122] Wingood G, & DiClemente R. The effects of an abusive primary partner on condom use and sexual negotiation practices of African-American women. American Journal of Public Health 1997; 87: 1016-1018.

[123] Wingood GM, & DiClemente RJ. Rape among African-American women: Sexual, psychological and social correlates predisposing survivors to risk of STD/HIV. Journal of Women's Health 1998; 7:77-84.

[124] Gilbert L, El-Bassel N, Schilling RF, Wada T, & Bennet B. Partner Violence and Sexual HIV Risk Behaviors Among Women in Methadone Treatment. AIDS and Behavior 2000 Jul; 4 (3):261-9.

[125] Kalichman SC & Simbayi LC. Sexual assault history and risks for sexually transmitted infections among women in an African township in Cape Town, South Africa. AIDS Care 2004 Aug; 16 (6): 681-9.

[126] Cohen M, Deamant C, Barkan S, Richardson J, Young M, Holman S, et al. Domestic Violence and Childhood Sexual Abuse in HIV-Infected Women and Women at risk for HIV. Am J Public Health 2000 April; 90(4): 560-5.

[127] Bensley LS, Van Eenwyk J, Simmons KW. Self-reported childhood sexual and physical abuse and adult HIV-risk behaviors and heavy drinking. Am J Preventive Medicine 2000 Jan; 18(2):151-8.

[128] Olsson A, Ellsberg M, Berglund S, Herrera A, Zelaya E, Pena R, et al. Sexual abuse during childhood and adolescence among Nicaraguan men and women: a population-based anonymous survey. Child Abuse & Neglect 2000; 24 (12): 1579-1589.

[129] Kark SL. Reprints and Reflections: The social Pathology of syphilis in Africans. Int Journ of Epidemiol 2003; 32: 181-186.

[130] Myer L, Morroni C, & Susser ES. Commentary: The social pathology of the HIV epidemic. Int Journ of Epidemiol 2003; 32: 189-192.

[131] Campbell C. Migrancy, Masculine identities and AIDS. Soc Sci Med 1997; 45: 273-281.

[132] Lurie M. Migration and AIDS in South Africa: a review. Southern African Journal of Science 2000; 96 (6): 343-347.

[133] Lurie M. "Population movement and the spread of HIV in Southern Africa" In: Dr Bridget Farham, editor. HIV/AIDS in South Africa. New York: Cambridge University Press; 2005. 1st ed. Pg. 262-284.

[134] Lurie MN, Williams BG, Zuma K, Mkaya-Mwamburi D, Garnett GP, Sweat MD, et al. Who infects whom? HIV-1 concordance and discordance among migrant and non-migrant couples in South Africa. AIDS 2003; 17 (15): 2245-2252.

[135] Augustine CS. The Social Construction of the South African Male Identity. (Dissertation). Johannesburg: Rand Afrikaans University, 2002.

[136] Barker G. Can men change? And how can we measure it? An example from Brazil. BRIDGE Gender and Development INBRIEF, Issue 11; 2002. (Available on http://www.bridge.ids.ac.uk). Accessed 30 April, 2008.

[137] Noar SM & Morokoff PJ. The Relationship Between Masculinity Ideology, Condom Attitudes, and Condom Use Stage of Change: A Structural Equation Modeling Approach. International Journal of Men's Health 2002; 1(1): 43-58.

[138]Fichtner RR, Wolitski RJ, Johnson WD, et al. Influence of perceived and assessed risk on STD clinic clients' acceptance of HIV testing, return for test result, and HIV serostatus. Psychology, Health & Medicine 19 96; 1: 83-98.

[139] Peacock D & Levack A. The Men as Partners Program in South Africa: Reaching Men to End Gender-Based Violence and Promote Sexual and Reproductive Health. International Journal of Men's Health 2004 Fall; 3 (3): 173-188.

[140] Makhaye G. "Young men" In: Dr Bridget Farham, editor. HIV/AIDS in South Africa. New York: Cambridge University Press; 2005. 1st ed. pg. 31-36.

[141]Lurie M, Harrison A, Wilkinson D, & Abdool Karim SS. Circular migration and sexual networking in rural KwaZulu Natal, South Africa: Implications for the spread of HIV and other sexually transmitted diseases. Health Transition Review 1997; 7 (3): 103-107.

[142] Kirigia JM, & Muthuri IHK. Predictors of women's decision to ask new partners to use condoms to avoid HIV/AIDS in South Africa. East African Medical Journal 1999; 76 (9): 484-9.

[143] Greig FE & Koopman C. Multilevel Analysis of Women's Empowerment and HIV Prevention: Quantitative Survey Results from a Preliminary Study in Botswana. AIDS and Behaviour 2003 June; 7(2): 195-208.

[144] Ramjee G, Gouws E, Andrews A, Myer L, & Weber AE. The Acceptability of a Vaginal Microbicide Among South African Men. International Family Planning Perspectives 2001; 27(4): 164-170.

[145] Parker W, Nkosi Z, Birdsall K, & Hajiyiannis H. Breaking the barriers: An Analysis of Condom-related Calls to the National AIDS Helpline. Centre for AIDS Development, Research and Evaluation (CADRE) 2004; Communicating AIDS Need Project. Available at: http//www.cadre.org.za

[146] Carter JA, McNair LD, & Corbin WR. Gender Differences Related to Heterosexual Condom Use: The Influence of Negotiation Styles. Journal of Sex & Marital Therapy 1999; 25: 217-225.

[147] Gupta G.R. Gender, Sexuality, and HIV/AIDS: The what, the Why and the How. XII International AIDS conference, Durban, South Africa. Plenary Address, 2000.

[148] Shefer T. Heterosexuality. In: Ratele Kopano & Duncan Norman editors. Identities and Relationships. UCT Press 2003; Lansdowne: South Africa. 1st ed. Pg: 289-302.

[149] Sternburg P & Hubley J. Evaluating men's involvement as a strategy in sexual and reproductive health promotion. Health Promotion International 2004; 19(3): 389-396.

[150] Campbell C & Williams B. Beyond the biomedical and behavioural: towards an integrated approach to HIV prevention in Southern African Mining Industry. Social Science & Medcine 1999; 48: 1625-1639.

[151] Department of Health Annual Report: April 2000-March 2001. Department of Health; Pretoria 2001.

[152] Parker W, Oyosi S, Kelly K, Fox S. On The Move: The Response of Public Transport Commuters to HIV/AIDS in South Africa. Centre for AIDS Development, Research and Evaluation (CADRE) Report 2002. South Africa : Department of Health.

[153] Myer L, Mathews C, Little F, Abdool Karim SS. The fate of free male condoms distributed to the public in South Africa. AIDS 2001; 15: 789-793.

[154] Ndhlovu L, Searle C, van Dam J, Mzaidume Y, Rasego B, Moema S. Reducing the transmission of HIV and sexually transmitted infections in a mining community: Findings from the Carletonville Mothusimpilo Intervention Project: 1998 to 2001. Horizons Final Report 2005. Washington, DC: Population Council.

[155] Ndhlovu L, Searle C, van Dam J. Strenghtening STI treatment and HIV prevention services in Carletonville, South Africa. Horizons Research Summary 2004. Washington, DC: Population Council.

[156] South African Medical Research Council. X111 International AIDS Conference Report. MRC News 2000; 31 (4).

[157] Jewkes R, Nduna M, Levin J, Jama N, Dunkle K, Khuzwayo N, Koss M, Puren A, Wood K, Duvvury N. A cluster randomized -controlled trial to determine the effectiveness of Stepping Stones in preventing HIV infections and promoting safer sexual behaviour amongst youth in the rural Eastern Cape, South Africa: trial design, methods and baseline findings. Tropical medicine and International Health 2006; 2(1): 3-16.

[158] Kruger V. MAP Evaluation report 2003; Johannesburg: EngenderHealth.

[159] Welz T, Hosegood V, Jaffar S, Batzing-Feigenbaum J, Herbst K, & Newell M. Continued very high prevalence of HIV infection in rural KwaZulu-Natal, South Africa: a population - based longitudinal study. AIDS 2007; 21: 1467-1472.

[160] Barker G. The Instituto Promundo Story. In: POLICY INNOVATIONS: A PUBLICATION OF THE CARNEGIE COUNCIL. (Available on http://www.policyinnovations.org) Updated 2 Jan 2007; Accessed 30 April 2008.

[161] Pulerwitz J, Baker G, & Segundo M. 'Promoting Healthy Relationships and HIV/STI Prevention for Young Men: Positive Findings from an Intervention Study In Brazil'. Horizons RESEARCH UPDATE 2004. (Available on http://www.popcouncil.org). Accessed 30 April 2008.