

UNDERSTANDING MEN'S HEALTH AND USE OF VIOLENCE: INTERFACE OF RAPE AND HIV IN SOUTH AFRICA

**Rachel Jewkes¹, Yandisa Sikweyiya¹,
Robert Morrell², Kristin Dunkle³**

¹Gender and Health Research Unit, Medical Research Council,
Private Bag X385, Pretoria 0001. Tel : 012 339 8526, Fax: 012 339
8582, email: rjewkes@mrc.ac.za;

²School of Education Studies, Faculty of Education,
University of KwaZulu Natal (Edgewood Campus)

³Behavioral Sciences and Health Education,
Emory University, Atlanta, USA



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EXECUTIVE SUMMARY

Introduction

South Africa has one of the highest rates of rape reported to the police in the world and the largest number of people living with HIV. There is considerable concern about the links between these two problems. Obviously, HIV can be transmitted during rape and this potential compounds the human rights violation of the rape. Research has established that men who rape and are more often physically violent towards partners are more likely to engage in sexual risk taking than other men – this has raised a concern that they are more likely to be infected with HIV. The aim of this research was to understand the prevalence of rape perpetration in a random sample community-based adult men, to understand factors associated with rape perpetration, and to describe intersections between rape, physical intimate partner violence, and HIV.

Methods

The study was conducted in three districts in the Eastern Cape and KwaZulu Natal Provinces – spanning geographical areas: rural, urban and city. It was cross-sectional survey with a two stage random sample. First, a self-weighting sample of 222 census enumeration areas (ea) was drawn by Statistics South Africa. Next, we approached 20 randomly selected households per ea for an interview. One man aged 18-49 years interviewed per household. Interviews used a structured questionnaire and were administered via Audio-enhanced Personal Digital Assistants (APDAs). A finger prick specimen of blood was requested for HIV testing and collected as a dried blood spot. Blood was tested for HIV in the laboratory of the National Institute for Communicable Diseases in Johannesburg using ELISA. Ethics approval was given by the Medical Research Council's ethics committee. We completed interviews in 215 of 220 eligible eas (97.7%) and we completed interviews in 1,738 of 2,298 (75.6%) of enumerated and eligible households.

Results

The sample included men of all racial groups and of a range of different socio-economic backgrounds. Half of the men were under 25 years of age and 70% were under 30. The population was therefore somewhat younger than men in the general population.

Rape prevalence

Overall, 27.6% of the men interviewed reporting ever having raped a woman or girl, and 4.6% of all men had raped in the past year. Because most men who raped reported multiple rapes, non-partner rape was overall more common than partner rape. In all, only 4.6% of men report that they had raped a partner and not raped a woman who was not a partner (i.e. an acquaintance or stranger). 11.7% of men had raped an acquaintance or stranger (but not a partner) and 9.7% had raped both. In total, 8.9% of men said they had raped with one or more other perpetrators when a woman didn't consent to sex, was forced, or when she was too drunk to stop them. Rape of men and boys was also reported by 2.9% respondents. Attempted rape was reported by 16.8% of men and 5.3% of men said they had attempted rape in the previous 12 months.

Patterns of rape

Nearly half of the men who raped (46.3%) said they had raped more than one woman or girl. In all, 23.2% of men said they had raped 2-3 women, 8.4% had raped 4-5 women, 7.1% said they had raped 6-10 and 7.7% said they had raped more than 10 women or girls.

Asked about their age at the first time they had forced a woman or girl into sex, 9.8% said they were under 10 years old, 16.4% were 10-14 years old, 46.5% were 15-19 years old, 18.6% were 20-24 years old, 6.9% were 25-29 years and 1.9% were 30 or older.

Factors associated with raping

Age was significantly associated with the likelihood of having raped, with men aged 20 and under less likely to report a lifetime history of rape. Education was also associated, with men who had raped being significantly better educated than men who had not. Men who had raped were significantly more likely to have earnings of over R500 per month. Men who raped were more likely to have occasional work and less likely to have never worked at all. There were significant racial differences in the prevalence of rape with Coloured men (45.7%) significantly more likely than African men (27.1%) to disclose having raped (OR 2.27 95%CI 1.43, 3.83 $p=0.002$).

Parental absence was significantly associated with raping, as was the quality of affective relationships with parents was related to raping. Men who raped perceived both their fathers and mothers to be significantly less kind ($p<0.0001$). Rape was also associated with significantly greater degrees of exposure to trauma in childhood.

Teasing and harassment or bullying, were reported by many of the men in their childhood. Over half of the men had experienced teasing, harassment or bullying themselves (54%) while slightly fewer (40%) had teased and harassed others. Both experience of bullying and being bullied was much more common among men who raped. Delinquent and criminal behaviour were more common among men who raped. Men who raped were much more likely to have been involved in theft and, with the exception of legal gun ownership, they were very much more likely to have been involved with weapons, gangs, and to have been arrested and imprisoned. They were also more likely to have also raped a man,

Men who disclosed having raped were significantly more likely to have engaged with a range of other risky sexual behaviours. They were more likely to have ever had more than 20 sexual partners, transactional sex, sex with a prostitute, heavy alcohol consumption, to have been physically violent towards a partner and not to have used a condom consistently in the past year.

Associations between rape and HIV

The HIV prevalence among men who had raped was 19.6% and compared to 18.1% among those who had never raped. This difference was not significant ($p=0.53$). The HIV prevalence was slightly lower at 12.7%, among those who had raped in the past year. Men who had raped another man, in contrast, had a higher prevalence of HIV (27.8%).

Examination of the age-specific HIV prevalence shows the very high prevalence of HIV for all men in this sample. The prevalence among all men aged 25-45 was over of 25%, and among those aged 30-39 years, it was over 40%. This may have been partly a result of the geographic areas in which we sampled, which cover regions of the country hardest hit by the HIV epidemic. When examined by rape perpetration status, however, there was no overall difference between the HIV prevalence of men who had raped women and those who had never raped.

Associations between physical intimate partner violence and HIV

In all, 42.4% of men had been physically violent to an intimate partner (current or ex-girlfriend or wife). When asked about physical violence in the past year, 14.0% (95%CI 12.4, 15.7) of men disclosed perpetration. Men who disclosed physical intimate partner violence were very much more likely to have engaged in a range of risky sexual behaviours, as well as to have raped and been raped.

A logistic regression model of factors associated with having HIV showed that men who had been physically violent to a partner on more than one occasion were significantly more likely to have HIV (OR 1.48 95% CI 1.01, 2.17, $p=0.04$). Other factors associated with HIV status were being African rather than of another race group, being 25 or older, and having had a genital ulcer. Men who had completed matric at school or attended tertiary education and those who were circumcised were less likely to be infected.

Discussion

The findings highlight the very high prevalence of rape in South Africa and the high prevalence of HIV in the adult population. The prevalence of rape has similarities to that found in other studies in South Africa. The very high prevalence shows that rape is far too common, and its origins too deeply embedded in ideas about South African manhood, for the problem to be predominantly addressed through strategies of apprehension and prosecution of perpetrators.

A much broader approach to rape prevention is required. Key points for intervention include ideas of masculinity, predicated on marked gender hierarchy and sexual entitlement of men. Efforts to change these dimensions of men's lives require structural interventions, notably education and opportunities for employment and advancement as well as a sea change in dominant ideas about what it means to be a successful man. Our study suggests that the pathway which leads to violent ideals of masculinity and the practices of rape and other forms of violence towards women starts in childhood and that strengthening families, and protecting children from exposure to adversity in childhood are critical for ensuring that men in the population develop pro-social members of society.

While rape perpetration was associated with a range of high risk sexual practices, men who raped were no more likely to have HIV than men who hadn't raped. Yet one of the very important findings is the very high HIV prevalence found in all the men, but particularly those aged 25-45. This provides a salient reminder of how likely it is that a man who rapes has HIV, irrespective of whether his risk is higher than that of other men. Clearly post-exposure prophylaxis for HIV after rape is a very important part of post-rape care for victims who are HIV negative. The fact that so many rapes are gang rapes, or involve multiple acts of sex penetration (30% in cases reported to the police) and the high prevalence of injuries (at least 58% in rapes reported to the police) (Vetten et al 2008) further supports the very considerable risk of exposure to HIV of victims at the time of rape and risk of transmission through rape.

The factors that were shown to be associated with having HIV in the study are in many respects unsurprising. It is well known that the epidemic has disproportionately spread amongst Africans, that the most well educated are relatively more protected, that having genital ulcers increases the likelihood of having HIV and that circumcision is protective. What has previously been suspected, but not shown in research, is that men who are physically violent towards their intimate partners are more likely to have HIV. This finding is completely congruent with the documented association between being violent and sexual risk taking, and indeed the finding that women who experience violence are more likely to have HIV (Dunkle et al 2004). There is no direct biological explanation for this association, rather it seems likely that it is mediated through the association between violence perpetration and risky sex, and that both violence and sexual risk taking jointly arise from an underlying construction of masculinity predicated on male dominance, violence and sexual risk taking. It has been argued that such constructions of hegemonic masculinity are a key driver of the HIV epidemic and our finding supports this. HIV prevention needs to embrace and incorporate promoting more gender equitable models of masculinity. The intervention Stepping Stones, has been shown to have positive impact in this regard, and should be promoted (Jewkes et al 2008).

Recommendations:

1. Rape prevention must focus on changing social norms around masculinity and sexual entitlement, and addressing the structural underpinnings of rape.
2. Post-exposure prophylaxis is a critical dimension of post-rape care, but it is just one dimension and a comprehensive care package needs to be delivered to all victims and should include support for the psychological responses to rape.
3. HIV prevention must embrace and incorporate promoting more gender equitable models of masculinity. Intervention that do this effectively must be promoted as part of HIV prevention.

1. INTRODUCTION

South Africa has a particularly high prevalence of rape. In year 2005-6, 54,926 rapes were reported to the police (SA Police Service October 2008). This amounts to a rate of reported rape of 117 per 100 000 population, which is at least three times higher than the rate in the United States. Whilst the last decade has seen a dramatic decline in most forms of violent crime including a 40% reduction in the rate of murder, rape seems relatively intractable. There has only been a 6% decline in the rate of reported rape. The country also has a particularly high prevalence of intimate partner violence. Whilst physical intimate partner violence is reported by 25% of women in general population (Jewkes, Levin, & Penn-Kekana 2003), it is over 40% in smaller targeted studies, with better methodologies (Dunkle, Jewkes, Brown, Yoshihama, Gray, McIntyre & Harlow 2004; Jewkes, Dunkle, Koss, Levin, Nduna, Jama & Sikweyiya 2006; Abrahams, Jewkes, Hoffman & Laubscher 2004).

South Africa also has the largest number of people with HIV of any the country in the world (UNAIDS 2006) and despite prevention efforts, the HIV prevalence in the population has remained very high (National Department of Health 2006). In recent years women's increased vulnerability to HIV in the context of male sexual and physical violence has been a focus of research and programming, but there is comparatively little research with men on their violent behaviour and links to HIV.

Research with women, has shown that pregnant women who have experienced more than one episode of physical and/or sexual intimate partner violence are 54% more likely to have HIV (Dunkle et al 2004). Conceptually, there are several possible pathways that could explain these findings. One is biologically direct pathway, in which women can be exposed to HIV in the course of rape by infected men, with any genital trauma occurring during rape increasing the likelihood of HIV transmission. There are also indirect pathways. Research from North America has shown that women who have experienced child sexual abuse and IPV are more likely to engage in risky sex (Zierler, Witbeck & Mayer 1996; Choi, Binson, Adelson & Catania 1998; Wingood & DiClemente 1997; Kalichman, Williams, Cherry & Nachimson 1998; Gilbert, El-Bassel, Schilling, Wada & Bennet 2000; Gillen, McDonnell & O'Campo 2002; El-Bassel, Gilbert, Krishnan, Schilling, Gaeta, Purpura 1998; El-Bassel, Gilbert, Schilling & Wada 2000; He, McCoy, Stevens & Stark 1998; Johnson, Cunningham-Williams & Cottler 2003; Martin, Mata, Kupper, Thomas, Daly & Cloutier 1999; Wingood & DiClemente 2000, 1998; Zierler, Feingold, Laufer, Velentgas, Kantrowitz-Gordon & Mayer 1991). Recent research in South Africa has yielded similar findings (Dunkle et al 2004; Kalichman & Simbayi 2004).

The experience of violence, furthermore, reinforces gendered power inequalities that impact on women's HIV risk. Dunkle et al (2004) demonstrated the women who had less power in their sexual relationship (measured on the Sexual Relationship Power Scale, adapted from Pulerwitz, Gortmaker & DeJong 2000) were at elevated risk of having HIV. Pettifor, Measham, Rees & Padian (2004) found that South African women with less power had a lower likelihood of condom use. These findings confirm the conclusions of other authors (Garcia-Moreno & Watts 2000; Zierler & Krieger 1997, Rao Gupta 2000; Piot 1999) who have argued that condom negotiation and refusal of unwanted sex are critically influenced by relationship power.

Another possible explanation for higher rates of HIV among women who have experienced violence could be that men who perpetrate violence are more likely to be HIV infected. Evidence from diverse global settings such as US colleges and inner cities, rural India, and rural and metropolitan South Africa, indicates that men who rape engage in high levels of HIV risk behaviours (e.g. Abrahams et al 2004; Martin et al 1999; El Bassel et al 1998; Jewkes et al 2006; Abbey, Parkhill, BeShears, Clinton-Sherrod & Zawacki 2006; Simbayi, Kalichman, Jooste, Mathiti, Cain & Cherry 2006; Dunkle, Jewkes, Nduna, Levin, Jama, Khuzwayo, Koss & Duvvury 2006). They are also physically violent to partners, and have more sexual partners (Dunkle et al 2006; Abrahams et al 2004; Malamuth, Linz, Heavey, Barnes, & Acker 1995; Malamuth, Sockloskie, Koss & Tanaka 1991) as well as more frequent intercourse (DeMarais 1997; Dunkle et al 2006). This suggests that men who rape may more likely to be infected with HIV and other STDs (particularly HSV-2) and to spread these to their partners.

These findings point to an interface between risk of HIV infection and risk of sexual and physical violence that needs to be explored and elucidated through further research with men. It has been argued that violent acts and sexual risk taking among men are connected through ideas of masculinity which are inherently violent and valorise sexually predatory and risk taking behaviours, and that these ideas may be very much more important in the spread of HIV than has previously been imagined.

However no study to date has explored whether rape perpetration is associated with HIV positivity, nor the nature of the interface between HIV risk behaviours and rape. While such information is crucial for developing post-rape care services for women, better understanding risks of HIV transmission in the course of rape and providing appropriate services and counselling, it is also potentially critical for preventing rape and slowing the spread of HIV infection in South Africa

1.2 DEFINING AND CONCEPTUALISING RAPE

The World Report on Violence and Health defines sexual violence against women as (Jewkes, Sen & Garcia-Moreno 2002):

“any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed against, women’s sexuality, using coercion (i.e. psychological intimidation, physical force, or threats of harm), by any person regardless of relationship to the victim, in any setting, including but not limited to home and work”.

This research concerns itself with one part of this definition. We use the term “rape” to refer to the use of coercion to obtain sex against a person’s will or when they are unable freely to give (or withhold) consent. While men may of course be coerced into sex, coercion of women is most common. Other researchers (e.g. Malamuth et al 1995; Knight & Sims-Knight 2003) have used sexual aggression, defined more broadly than rape, as the focus of their work. This has some advantages for data analysis in a setting where the prevalence of self-reported rape is relatively low. In South Africa, where the prevalence of self-reported rape perpetration is high, and where there are potentially consequences for HIV transmission through vaginal and anal penetration, we focus the study on rape.

1.3 THE EXTENT OF RAPE IN SOUTH AFRICA

Most research on the extent of sexual coercion has come from studies of women with questions about victimisation. For example, forced first intercourse has been reported in studies from different parts of South Africa, with prevalences between 12-28% (Dunkle et al 2004; Jewkes, Vundule, Maforah, & Jordaan 2001; Buga, Amoko & Ncayiyana 1996; Richter 1996) and 7.9% of women in Soweto antenatal clinics disclosed having been raped by a non-partner as an adult, and 20.1% had been sexually abused by their husband or a boyfriend (Dunkle et al 2004).

Men have been asked about their sexually coercive practices in three South African studies, all of which used different approaches to measurement of rape. Abrahams et al (2004) interviewed a random sample of 1368 male employees in Cape Town municipalities. In all, 15.3% reported sexually coercing a female intimate partner of the previous 10 years. In the Stepping Stones Study, 1360 young male volunteers (aged 15-26) enrolled in the trial were asked about sexual violence perpetration against intimate partners and other women. A total of 21.3% disclosed rape of either a woman partner (8.6%) or non-partner (16.2%). A total of 13.9% had gang raped a woman who was not a partner. A further 7.6% disclosed attempted rape. In the 12 month period between the baseline and first follow up interviews, 5.5% of men who had not disclosed sexually coercive practices at baseline reported coercing sex (Jewkes et al 2006). A logistic regression model was built of factors associated with baseline reports of raping of a woman who was not an intimate partner. These included HIV risk behaviours such as having more lifetime consensual sexual partners and having ever had a transactional sexual encounter. A history of rape was also associated with having ever perpetrated physical violence, drug use, gang membership, susceptibility to peer pressure to have sex, having poorer communication skills, and having a more educated mother. (Jewkes et al 2006). Simbayi et al (2006) interviewed n=412 men in Cape Town. They found that 23% reported perpetration of sexual assault and that this was associated with having more partners, exchange of money for sex and a history of genital ulcers.

These studies show that rape is highly prevalent, even when reported by self-disclosure in face to face interviewing. However none of these existing studies have been conducted in random samples of men in the general population, and so the generalisability of their findings is uncertain. They show overlap between risk factors for raping and those for HIV, which points to a potential need for these two sets of behaviours to be investigated in tandem and addressed through joint programming.

1.4 PREVALENCE OF AND RISK FACTORS FOR HIV POSITIVITY IN SOUTH AFRICA

HIV/AIDS is highly prevalent in South Africa. The 2004 national antenatal sero-prevalence survey (Department of Health 2006) found that 29.5% of pregnant women attending public hospitals were HIV infected. There is no routine surveillance of HIV in men, but a national study conducted in 2005 (Shisana, Rehle, Simbayi, et al 2005) found that overall 10.8% of South Africans (age 2 and over) have HIV, including 8.2% of all men. The peak prevalence in men was 23.3% in 30-39 year olds. Also particularly worrying was the finding that 4.4% (95%CI 3.0 to 6.6) of children aged 5-9 years and 1.7% (95%CI 1.0-2.8) of 10-14 year olds were infected with HIV. These cannot solely be explained by mother-to-child transmission, particularly in the 10-14 year age group, and the study authors suggest that they are most likely due to sexual assault and possibly hospital-acquired infection. This seems more likely than the competing explanation that they are caused by rapes by men who are infected with HIV and are seeking a ‘cure’ through sex with

a virgin (Pitcher & Bowley 2002). The role of this myth in child rape has been hotly debated and has probably been greatly overstated (Jewkes 2004; Jewkes, Penn-Kekana, Rose-Junius 2005), but this can only be established through further research.

There have been many studies of factors associated with HIV sero-positivity in Africa. Risk factors described have included sexual behaviour (multiple partners, concurrent partners, failure to use condoms, etc), lack of male circumcision, and sexually transmitted infections (e.g. Jewkes et al 2006; Pettifor, Rees, Kleinschmidt, Steffenson, MacPhail, Hlongwa-Madikizela, Vermaak, & Padian 2005; Auvert, Ballard, & Cambell et al 2001; Buve, Carael, & Hayes et al 2001; Bassett, McFarland, & Ray et al 1996). Having sex with a man has also been associated with having HIV in young men and men in Soweto (Jewkes et al 2006; Lane et al 2009).

1.5 RISK FACTORS FOR RAPE PERPETRATION

Over the last thirty years research, primarily conducted in North America, has identified a number of risk factors for rape perpetration. Several cognitive factors are associated with rape perpetration. In particular, men who rape show a greater acceptance of interpersonal violence (AIV) and adversarial sexual beliefs (ASB) (Abbey & McAuslan 2004, Rapaport & Burkhart 1984; Malamuth et al 1991, Malamuth et al 1995), usually measured on Burt's scales of dimensions of sex roles (Burt 1980). Rape myth acceptance and sex role stereotyping have also been investigated, but have either often not been found to be related to rape, or not to have different distributions in convicted rapists from other men (Overholser & Beck 1986; Malamuth 1991; Rapaport & Burkhart 1984; Burt 1980; Muelenhard & Falcon 1990).

Sexually violent men have been shown to be more likely to be hostile towards women (Malamuth et al 1991; Malamuth et al 1985; Malamuth et al 1991; Abbey & McAuslan 2004). They are also more likely to perceive women as hostile to them and to mistrust women's affective expression, and thus more likely to interpret assertiveness in women's interactions with them as hostile (Malamuth & Brown 1994; Murphy 1986). Such hostile cognitions may be more likely to develop in the context of delinquent youth peer relationships; men who are sexually violent are more likely to have been delinquent (Malamuth et al 1991, 1995). Malamuth and colleagues used structural equation modelling to show an association between delinquency and experience of trauma in childhood, particularly sexual abuse and witnessing IPV. They suggested that experience of childhood trauma may lead to later developmental processes affecting aggression towards women, including the development of cynical, adversarial and hostile ideas of male-female and intimate relationships. They may also include feelings of shame (especially about sex) and inadequacy, which may be masked by anger, and an exaggerated need to control women (Malamuth et al 1991). Sexually violent men, especially men who coerce sex more than once, are more likely to lack empathy for their victims, lack remorse and consider victims to be responsible for rape (Abbey & McAuslan 2004, Dean & Malamuth 1997). Abbey et al (2006) found that empathy had important buffering effects on the relationship between sexual dominance and frequency of rape perpetration.

As discussed above, sexually violent men are more likely than other men to have multiple sexual partners (eg. Abrahams, Jewkes et al 2004, Malamuth et al 1991, Malamuth et al 1995, Abbey et al 2006, Simbayi et al 2006). Malamuth et al (1991) suggest that men who develop a relatively high emphasis on sexuality, particularly with sexual conquest, as a source of peer status and self-esteem, may use various means, including coercion to induce girls into sexual acts. A similar dynamic has been described in qualitative research from South Africa by Wood & Jewkes (2001). This research suggests that experience of trauma in childhood reduces the ability of men to form loving and nurturing attachments, and thus results in an orientation to impersonal sexual relationships and short term sex-seeking strategies rather than sex in the context of emotional bonding (Malamuth et al 1991).

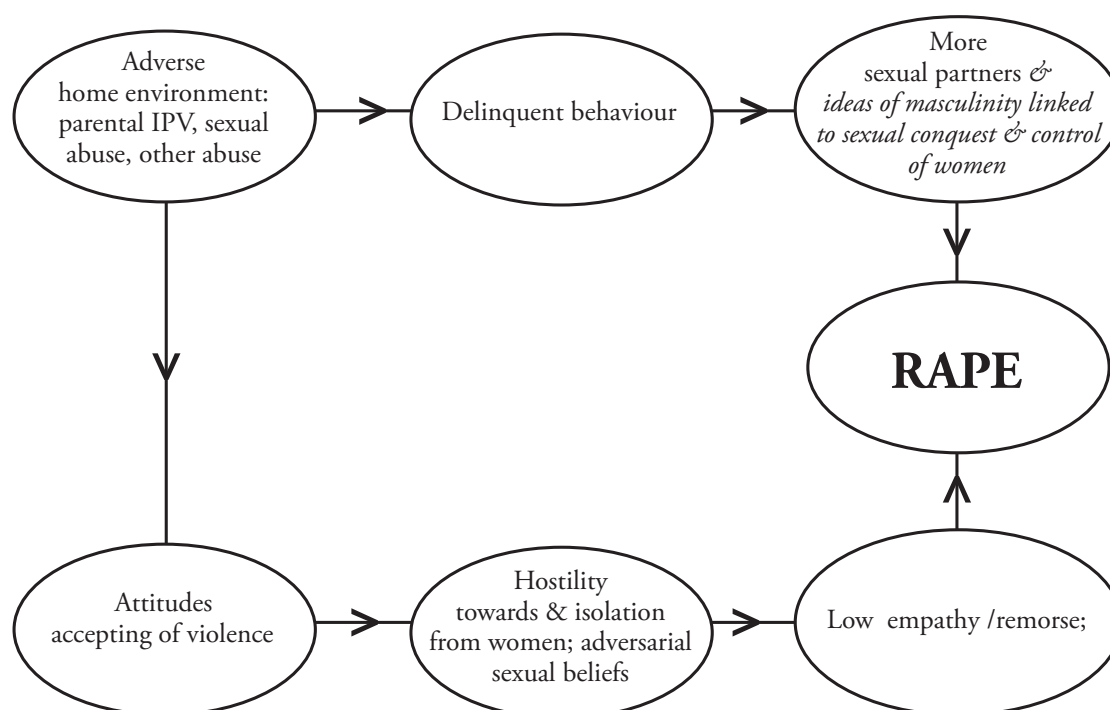
Alcohol plays a role in a high proportion of rapes (Abbey et al 2004). While it has been described as an enabling situational factor (Abbey et al 2004), alcohol may have a more complex role (Abbey et al 2006). Sexual assaults are very frequently associated with alcohol consumption (e.g. Ullman, Karabatsos & Koss 1999; Abbey, McAuslan & Ross 1998). Alcohol has psychopharmacological effects of reducing inhibitions (Araji & Finkelhor 1986) (like some drugs, notably cocaine (Grisso, Schwarz & Hirschinger et al 1999)), clouding judgement and enabling a greater focus on the short term benefits of forced sex (Abbey, Ross & McDuffie; Abbey et al 2006). It may also act as a cultural 'time out' for anti-social behaviour. Thus men are more likely to act violently when drunk because they do not feel they will be held accountable for their behaviour (Abbey et al 2004). Some forms of group sexual violence are associated with alcohol drinking and here drinking alcohol forms part of the group bonding with collectively reduced inhibitions and individual judgement ceded to that of the group. Alcohol use is also known to increase the likelihood of unsafe sex and HIV infection (Dunkle, Jewkes et al 2004).

Peer pressure to have sex may also encourage some men to force sex (Jewkes et al 2006; Koss & Dinero 1988; Abbey et al 2006; Capaldi, Dishion, Stoolmiller & Yoerger 2001). Indeed Abbey et al (2006) found peer pressure to be one of only three variables (others being alcohol problems and attitudes about casual sex) associated with number of sexual assaults on multivariate analyses.

The Confluence Model

The Confluence Model (Malamuth et al 1991, Malamuth et al 1995, Malamuth 2003) presented in Figure One, is a multi-factorial model developed to explain the interconnections among factors associated with sexual coercion. It has been tested using structural equation modelling on several datasets. The model has two paths influencing sexual assault perpetration: hostile attitudes towards women and sexual promiscuity/impersonal sex. Each path has independently predicted perpetration, but they also work synergistically, and with men scoring highly on both paths being more likely to be sexually coercive. According to Malamuth et al (1995) hostile masculinity indicated feelings of insecurity and defensiveness in relationships towards women, with sex being an act of power and dominance rather than love. The sexual promiscuity/impersonal sex path reflected ideas of sex as a game to be won or for physical gratification and not for emotional closeness or intimacy. Since the original development of the confluence model, it has been recognised that the model is improved by acknowledging the attenuating effect of the personality dimensions empathy and being orientated towards others (Dean & Malamuth 1997). Knight & Sims-Knight (2003) have taken the Confluence Model as a starting point and amplified it, particularly by emphasising the impact of psychopathic personality and the role played by childhood trauma in the development of sexual aggressive behaviour. They demonstrate that their model fits the data slightly better than the original confluence model.

Figure 1: Conceptual model of factors associated with sexual coercion in the Confluence Model (adapted from Malamuth 1991, 2003, Knight & Sims-Knight, 2003, with additions in *italics* explored in this study)



Masculinity, poverty and aggression

The intersections between poverty, masculinity and rape need further research. Individuals who rape are often not the most disadvantaged of their peers (Jewkes et al 2006), but gang rape is often described in conditions of general poverty (Bourgois 1996; Wood 2007; Jewkes et al 2006). Several authors have argued that the relationship between poverty and perpetration is mediated through ideas of masculine identity and the question for masculine 'success' (Bourgois 1996, Moore 1994, Wood & Jewkes 2001, Silberschmidt 2001, Omorodion & Olusanya 1998). A powerful analysis of the relationship was given by Bourgois (1996), writing about life in New York slums, who described how young men felt enormously pressurised both by traditional models of masculinity and family structure of their parents' and grandparents' generations, and modern ideals of 'successful' manhood that emphasise consumerism. Trapped in urban slums, with little or no employment, neither model of masculine 'success' was attainable. Instead ideals of masculinity were recrafted emphasising control over women, substance use, participation in crime, and often xenophobia or racism (Bourgois 1996). Gang rape and sexual conquest were normalised, as men lash out against women they could neither control, nor economically support. This work provides fascinating ethnographic evidence that seems to provide some support for the hypotheses of Malamuth et al (1991). Moore has argued that given the prevailing structure of gendered power relations globally, experience of male identity is bound up with experiences of power (1994). Challenges to the exercise of power by men are often perceived as threats to their masculine

identity. An inability to meet with social expectations of 'successful' manhood may trigger a crisis of male identity, and rape and IPV are means of resolving this crisis because they act to reconfirm the nature of powerfulness otherwise denied. In this way, sexual coercion is a form of communication by men to themselves, and to women, about their ultimate (gendered) powerfulness (Jewkes et al 2005). Given the context of poverty, unemployment and low educational attainment, there is clearly a need to explore associations between perceived masculine success (as defined by South African men) within and outside of the sexual domain and sexual coercion, as well as the interface of these factors with poverty.

1.6 METHODOLOGICAL WEAKNESSES AND GAPS IN RESEARCH ON RAPE PERPETRATION

The development of HIV prevention programs that incorporate an awareness of rape is currently hampered by the limited base of scientific knowledge on rape perpetration, especially from developing countries where the HIV epidemic is most severe. There are only two published studies of rape perpetration that have used a random sample of the male population, a small Canadian study (n=195), which had limited power to identify possible risk factors (Senn, Desmarais, Verberg & Wood 2000) and a small US sample (n=163) (Abbey et al 2006). Senn et al (2000) reported a prevalence of rape or attempted rape of 7.7%, which is exactly the same as that found by Koss, Gidycz & Wiseniewski (1987) in male college students. Abbey et al (2006) used a computer-assisted interview and found 24.5% of men reporting an act that would meet legal definitions of rape or attempted rape. These studies are both small, and so we do not know the prevalence of rape perpetration in a sizeable part of the general population of any country, the impact of age on perpetration, the prevalence of repeat perpetration, or which factors are associated with perpetration and re-perpetration in the general population. Interestingly, Abbey et al's (2006) work raises the possibility that levels of disclosure of rape in computer assisted interviews may be much higher than that found with pencil-and-paper or face-to-face interviews. Understanding rape in the general population is crucial for developing interventions, and for generating awareness at a policy level for the need for a given strategy of rape interventions. Understanding the development of sexually aggressive behaviour across developmental stages and the constructs that predict rape perpetration in adult males in South Africa is essential for targeting interventions (e.g. Barbaree, Blanchard & Langton 2003; Seto & Barbaree 1997; Hanson 1997; Jaffe, Wolf, Crooks, Hughes R & Baker 2004).

Most of the published literature on rape etiology consists of analyses for which the outcome has been 'rape and other coercive practices', where the latter predominate. Hampered by small sample size, and a low reported prevalence of legally defined rape (4% completed rape or 7.7% of rape and attempted rape in Koss & Oros 1982 and Koss et al 1987), most studies have lacked the power to distinguish men who raped from those whose sexual aggression fell short of rape. This raises the question as to whether there would be differences in research findings if sample sizes were larger and rape was the outcome of interest in analyses.

Research on risk factors for rape perpetration has largely been undertaken with North American college students and apprehended rapists (exceptions include naval recruits see Merrill, Thomsen, Gold & Milner 2001), who inherently differ from the general population. Although preliminary research in South Africa points to similarities between risk factors found in South African and North American men (Jewkes et al 2006), there are also differences. Many papers on rape perpetration have sought to support or refute a theory related to a single construct (Bachar & Koss 2001), with the empirically-tested Confluence Model of Malamuth et al (2003, 1995, 1991), the model of Knight & Sims-Knight (2003) and the work of Abbey et al (2004, 2006) being notable exceptions. Whilst researchers have recently sought to test models developed in college samples on sex offenders and vice versa (Malamuth 2003; Knight & Sims-Knight 2003), research is clearly needed on random samples of men in the general population. This is especially important in understanding rape and links with HIV in a country like South Africa that has a generalized heterosexual epidemic affecting all segments of the population. Understanding factors associated with raping and the broader social context of rape is clearly crucial for being able to think about rape prevention.

1.7 STUDY AIMS

This study sought to advance understanding of rape perpetration in South Africa and the intersections between rape and partner violence and HIV through (1) describing the prevalence of rape perpetration in a random sample of men in the community, (2) understanding factors associated with raping, (3) describing associations between rape, partner violence, and HIV risk, and (4) understanding the complex intersections between rape, and HIV.

2.0 METHODS

2.1 OBJECTIVES

- 1) To describe aspects of the lives of a sample of men from the general population aged 18-49 years in the Eastern Cape & KwaZulu-Natal provinces of South Africa, including their childhoods, families, social circumstances, engagement with anti-social behaviour including bullying, violence and crime, their perceptions of their assess their lives, and sexual behaviours.
- 2) To describe the prevalence of and factors associated with rape perpetration
- 3) To describe any association between HIV serostatus and rape perpetration
- 4) To describe factors associated with having HIV, particularly including associations with rape and physical intimate partner violence perpetration

2.2 STUDY SETTING

The study was undertaken in three districts in the Eastern Cape and KwaZulu Natal provinces of South Africa, namely OR Tambo, Ugu and Ethekewini municipality. For logistical reasons research was only conducted on the southern half of Ethekewini, forming a contiguous study area spanning southern KZN and northern EC. These areas span the spectrum of development in South Africa including deep rural areas where traditional leadership still has considerable influence, commercial farming areas, small towns and villages, and the municipality of Ethekewini, which is the metropole within which the city of Durban is located. The study area included people of all racial groups, a range of ethnic groups (predominantly Black Africans who were Xhosa and Zulu), and a wide range of socio-economic backgrounds.

2.3 SAMPLE

The sample used a two stage proportionate stratified design to identify a representative sample of men aged 18-49 years living in the three districts. Using the 2001 census as the primary sampling frame, census enumeration areas (eas) were selected as the primary sampling unit, stratified by district. Two hundred and twenty two enumeration areas were selected for the study. The sample of eas was drawn by Statistics South Africa. Within each ea a visiting point was generally defined as a household. Households within eas areas were mapped and enumerated by our field team. Twenty visiting points per ea were systematically selected using a random start point. Occasionally a visiting point was found to contain two households, in which case we interviewed in both; if a visiting point contained more than two households, one household was randomly selected. In each household, the number of eligible men were enumerated and one eligible man was randomly selected to take part in the interview.

Inclusion criteria

Men were eligible for the study if they were aged 18-49 years and had slept there the night before. Eligible men were asked to complete a questionnaire and those who agreed, were also asked to provide a blood sample consisting of a few drops of blood on blotting paper for HIV testing. Men were not required to agree to give blood to be eligible to enter the study and respond to the questionnaire.

2.4 QUESTIONNAIRE DEVELOPMENT AND TESTING

The initial questionnaire was developed simultaneously in English and Xhosa. The first stage of testing involved twenty cognitive interviews with men aged 18 and 49 years. They were recruited in the Eastern Cape from Mthatha, two local university colleges, and surrounding villages. They were recruited using a snowball sampling technique where we asked people we knew in the areas to identify a place where we could find men of this age. We then approached prospective participants privately and fully informed them of our research and its purpose. Thereafter we asked for their participation in refining our questionnaire. At this phase, a structured questionnaire was administered by in person by an interviewer (YS). After each section of structured questions, we asked open-ended questions to probe participants' understanding of the items and their feelings about answering the questions. We wanted to establish whether participants had understood the question, whether the questions had caused discomfort, and whether the reported discomfort might have or did lead to dishonesty in answering the questions. We also probed their understanding and interpretation of the questions, and asked what they thought the researchers wanted to know by asking those questions and how we could ask those questions better. We interviewed men in isiXhosa, the language of the study area. The responses to the open-ended questions were audio-recorded, transcribed verbatim and translated into English. The findings of these interviews that related to the questions on non-consensual sex have been presented elsewhere (Sikweyiya, Jewkes & Morrell 2007). The questionnaire was then translated into Zulu and similarly tested in 5 cognitive interviews with men from villages around Harding, KwaZulu Natal. The questionnaire draft was revised after these interviews.

The draft questionnaire was piloted with a convenience sample of 200 men from Mthatha in face to face interviews. This data was entered on a computer and analysed for item non-response and scale validity, and the questionnaire further refined. The Xhosa and Zulu translations were formally back translated into English, and checked by multilingual Xhosa-Zulu-English speakers to verify consistent translations before being finalised.

Questionnaires were administered using APDAs (Audio-enhanced Personal Digital Assistants). The text of each question and the associated answer choices were presented on the PDA screen, while an accompanying voice recording read the question and answers aloud. Participants listened to the questions through headphones, and answered by tapping their answer choice with a stylus. Each PDAs was bilingual and could present questions in either Xhosa/English or Zulu/English. Accompanying audio was also available in these languages. The participants could self-administer their questionnaire and chose the language they preferred for both test and audio. The language choice could be changed at any time, and it was possible to view and/or listen to the same question in different languages before answering. A skip button allowed participants to skip over any question they did not wish to answer. Fieldworkers were at hand during questionnaire completion so they could assist respondents, or help interpret any questions. The APDAs proved highly acceptable and appropriate, and only one man felt unable to use the equipment and asked an interviewer to enter the responses for him.

2.5 QUESTIONNAIRE CONTENT

Socio-demographic characteristics

Social and demographic questions included items on men's age, level of education, race, who they lived with, the main source of income for the family, whether they worked, how often they worked, and their earnings. Five questions assessed household socio-economic status, including home ownership, materials used to build the home, the frequency of going without food and going without meat, and the ability to access a modest sum (R100) for emergency medical needs.

Childhood and schooling

Questions on men's childhoods included items on which parent they were closest to as a child, whether and how often their parents worked and were at home, household decision-making, and parents' level of schooling. Scales measured men's perceptions of the kindness of their mother (3-items, Cronbach's alpha = 0.75) and father (4-items, Cronbach's alpha = 0.87). A typical item was "I had a loving relationship with my mother/father while I was growing up". A four level Lickert response scale was used (strongly agree, agree, disagree, strongly disagree).

Data on adverse experiences in childhood were collected using a modified version of the short form of the Childhood Trauma Questionnaire (Bernstein et al 1994) which was adapted for use in South Africa. We assessed five dimensions of adversity: emotional neglect, emotional abuse, physical neglect/hardship, physical abuse and sexual abuse. Items were scored on a four point response scale

of never, sometimes, often and very often (Cronbach's alpha 0.79). A typical question was "before I reached 18 one or both of my parents were too drunk to take care of me".

An 8-item scale was used to measure experiences with bullying at school with four level response options (never, sometimes, often and very often) (Cronbach's alpha 0.76). These questions were developed for the study. A typical item was "My school friends and I were a group and we would put pressure on a girl to date one of us until she agreed".

Hypothetical responses to HIV

Items on hypothetical responses to HIV infection included "If I had HIV, I would have sex with a virgin to see if I could be cured;" "If I had HIV, I would spread it so I would not die alone;" and "I often think about having sex with boys as I won't get diseases from them". The latter item had emerged as a belief in formative qualitative research. These items had four response options (strongly agree, agree, disagree, strongly disagree).

Sexual experiences and practices in a current relationship

Men reported on their marital status, sexual attraction to women and/or men, and sexual experiences with women and/or men, as well as experiences of being coerced into sex by a man. We asked about characteristics of men's main partner (if any), their relative education, income and perceived intelligence, and quality of the relationship.

For men with current main female partners, we used a 5-item scale to investigate the quality of communication with the partner (Cronbach's alpha 0.84). A typical question was "When was the last time you talked to your girlfriend or your wife about problems you are facing in your life?" and the response options were: within this week, 1-2 weeks, 2-4 weeks ago, >4 weeks and <6 months ago, longer ago or never. A separate 12-item scale assessed relationship control in the same relationship. This was based on Pulwerwitz et al (2000), as adapted for South Africa by Dunkle et al (2004) (Cronbach's alpha 0.78). A typical question was, "When I want sex I expect her to agree".

Men were asked about perpetration of physical intimate partner violence using a version of the WHO violence against women instrument (World Health Organisation 2000), adapted for use with men in the Eastern Cape (Dunkle et al 2006). Specific acts of violence were covered by five questions. A typical item was, "How many times have you pushed or shoved your partner?"

Sexual Behaviour

We asked men about the last time they sex, including who this was with and whether a condom was used. We asked six questions about the number of primary and non-primary partners in the past year and lifetime. Non-primary partners were defined as *khwapheni* (isiZulu and isiXhosa for hidden partners usually concurrent with a main partners) and people with whom an interviewee had sex only once. We also asked about participation in transactional sex. Following Dunkle, Jewkes, Nduna, Jama, Levin, Sikweyiya & Koss (2007), transactional sex was defined as sex with a partner which was primarily motivated by material gain, defined as provision of food, cosmetics, clothes, transportation, items for children or family, school fees, somewhere to sleep, or cash. Men were asked about experiences giving these items for sex with different types of partner.

Rape perpetration

Rape perpetration against women was assessed using seven questions asked of all men (table 1). These developed for the study, but built on those used previously in the Eastern Cape (Jewkes et al 2006). Men were then asked two questions about perpetration of rape of a man or boy. Men who reported any rape perpetration against a woman/girl or man/boy were then asked a series of questions on antecedents and motivations, number of events, the age(s) of the victim(s) and his age(s) at the time. Data were then collected on consequences of the rape for the man. We also asked two questions on attempted rape and asked the reasons why the rape had been interrupted.

Table 1: Rape perpetration against women questions

How many times have you slept with a woman or girl when she didn't consent to sex or after you forced her?	Never 1 Once 2 More than 1 time 3
How many times have you slept with a woman or girl when she was too drunk to say whether she wanted it or not?	Never 1 Once 2 More than 1 time 3
Did you ever force a girlfriend or your wife into having sex with you?	Never 1 Once 2 More than 1 time 3
Was ever there a time when you forced an ex-girlfriend or ex-wife into having sex?	Never 1 Once 2 More than 1 time 3
Did you ever force a woman who was NOT your wife or girlfriend at the time to have sex with you?	Never 1 Once 2 More than 1 time 3
How many times have you and other men had sex with a woman at the same time when she didn't consent to sex or you forced her?	Never 1 Once 2 More than 1 time 3
How many times have you and other men had sex with a woman at the same time when she was too drunk to stop you?	Never 1 Once 2 More than 1 time 3

Participation in crime

We asked 11 items about lifetime experiences of participation in crime. These were modified for the local context from Tremblay, Pagani-Kurtz, Massc, Vitaro & Pihl (1995) who originally developed them as a measure of delinquency in childhood. Eight of the items related to theft (Cronbach's alpha 0.81) and a typical item was, "How often have you stolen an animal from someone?" The response options were never, once, 2-3 times and more often. Men were also asked about gang membership, weapon ownership, and history of arrests and jail.

Men's physical and mental health and substance use

We asked about alcohol use and dagga use in the past 12 months, and men's age at first use of dagga. We asked about circumcision, the age it was performed, the method used (medical, religious, or traditional African). For those reporting traditional circumcision we asked about what advice men were given about cleaning and healing after circumcision, including any advice about sexually testing the healing. Separately, we asked about men's experience with genital ulcers, penile discharge, and whether the man had ever had an HIV test and taken the result.

Personality and satisfaction : psychopathic personality, empathy and life satisfaction

Data were collected on two dimensions of psychopathy. Thirteen questions on Machiavellian Egocentricity and Blame Externalisation sub-scales of the Psychopathic Personality Inventory-Revised (PPI-I) were included. The Cronbach's alpha for the scales together was 0.83. A typical item on the Machiavellian Egocentricity sub-scale was "I get mad if I don't receive special favours I deserve" and on the Blame Externalisation sub-scale was "I have often been betrayed by people I trust". Each has a 4 level response option (false, mostly false, mostly true, true). These were adapted and reproduced by special permission of the Publisher Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the Psychopathic Personality Inventory- Revised by Scott O. Lilienfeld, Ph.D., Copyright 2005 by PAR, Inc. Further reproduction is prohibited without permission of PAR, Inc.

We asked four items to measure empathy, adapted from Abbey et al (2006) A typical item was " I am often touched by things that I see happen". These had a five point response scale (doesn't describe me well – describes me well) (Cronbach's alpha 0.80)..

We asked men to describe their perceptions of their own success related to material status and life circumstances comparing their current situation and to their childhood and their current situation and that of their peers from childhood. We asked four items to measure life satisfaction adapted from Diener, Emmons, Larsen & Griffin (1985). A typical item was "the conditions of my life are excellent". These had a five point response scale (ranging from strongly agree to strongly disagree with a 'neither' midpoint) (Cronbach's alpha 0.80). We also asked men to rate their perceived success as a man on a scale from 1-5.

Finally, we asked five items about whether men had accessed support from different sources during emotional difficulties.

2.6 HIV TESTING

For men who agreed to give blood samples, we collected 5 drops of blood on blotting paper, which was then air dried. The specimens were linked by ID numbers to the men's questionnaires.

Laboratory procedures

Dried blood spots were tested with a screen ELISA (Genscreen) and positive results confirmed with a second ELISA (Vironostika). The National Institute for Communicable Diseases participates in a programme supported by the Center for Communicable Diseases Control that has shown these methods can optimally identify HIV-1 from dried blood spots.

2.7 ETHICAL ISSUES

The study received ethics approval from the Medical Research Council's Ethics Committee. Men were asked to participate voluntarily and told that non-participation would not affect them in any way. They were able skip any question they chose and could withdraw from the interview completely at any time. They were asked to sign informed consent for the interview and to sign separately for blood if they agreed to a sample being taken. As an incentive, the men were given R25 for the interview and R25 if they agreed to a blood test.

It was important to be able to assure participants complete anonymity and this meant that we could not offer them access to their HIV results. All men were given a leaflet about the study (in English, Xhosa or Zulu) and were encouraged to go to their nearest clinic for HIV testing.

Anonymity was important because of the sensitive nature of some of the questions. We enumerated households and kept details of the precise addresses in which we were conducting interviews only for the period only until the interviews were completed; we then destroyed the record. All questionnaires and blood specimens were identified by non-consecutive study ID numbers and informants were invited to choose their own number from a set of printed stickers. The signed consent forms were not linked to the study ID numbers. As a result the study had no ability to link identified individuals to their questionnaires.

2.8 COMMUNITY ACCESS

Access to the study sites was gained through through a process of community mobilisation. We first contacted the traditional leader or elected local political representatives (the speaker of the local municipality and then the counsellor) in each area and explained the study to him or her. In rural areas, we obtained permission from traditional leadership before proceeding with fieldwork and we were required to inform the traditional leader when we completed fieldwork in each area. In middle class urban areas it was not seen as necessary to contact the counsellors, but in some areas, we were advised to report to the local police stations, advice them that we would be working in the area for three days, and get a stamped and signed letter to show to community members when introducing ourselves. Field staff wore MRC staff cards, that had a fieldworker's name, ID photo, project name and contact details of the Principal Investigator and Project Manager. In one area in the Eastern Cape the counsellor did not give permission for the study and the research team was physically threatened. As a result we could not conduct any interviews in that area. In two rural areas in the Eastern Cape the field teams encountered faction fighting and rumours of people engaging in nefarious practices with bodies and bodily specimens (essentially body snatching). Although we had permission from the local leadership to work in these areas, we encountered hostility in the field and decided to withdraw the research teams before completion of fieldwork to ensure their safety.

2.9 STATISTICAL ANALYSIS

Data were downloaded from the PDA memory cards and merged into a dataset with the linked HIV test results. The resulting dataset provided a self-weighting representative sample of men in the study area. Data analysis was conducted using Stata version 10, with the “svy” commands used to take into account the stratification and cluster design of the sample. For basic descriptive analyses, the variables summarised as percentages. For two way comparisons, Chi-squared tests or t-tests were computed. The internal consistency of attitude scales was assessed by examining the Cronbach’s alpha. For all scales, the response categories were summed. No efforts were made to replace missing data.

Logistic regression modelling was used to determine factors associated with having HIV. Candidate variables for the model included social and demographic characteristics of the men, aspects of their childhood, their sexual practices (including partner numbers, transactional sex, and condom use), gender attitudes, intimate partner violence, rape perpetration, being raped by a man, substance abuse, having had sex with a man, sexually transmitted infections, and circumcision. To account for clustering of respondents within eas, generalised linear mixed models (xtlogit) were fitted, and the variables were entered into the model in groups. At each stage, backwards elimination was used ($p < 0.15$) to derive an intermediate model. To adjust for study design, a term for stratum was included in the model. Variables for the final model were retained at $p =$ or < 0.05 . We tested for an interaction between physical intimate partner violence and age, but found none.

2.10 RESPONSE RATES

Of the 222 selected enumeration areas (eas), two (0.9%) were found to have no homes on them, and in five (2.3%) we were not able to complete an interview. In one we could not get permission for the study from the local political gatekeepers (described above), in the other four we could not get access and an agreement to interview in any home after multiple visits at different times of day. We therefore collected at least some household eligibility data from all 220 eligible eas and completed interviews in 215 of 220 eligible eas (97.7%).

We sampled a total of 4473 visiting points. Of these, 1353 (37.1%) were found to contain no eligible man, 2298 (51.4%) contained at least 1 eligible man, and 822 (18.4%) could not be rostered for eligibility after a minimum of 3 attempts at contact. We completed interviews in 1,738 of 2,298 (75.6%) of the enumerated and eligible households. We estimated that the presence of eligible men in households which could not be contacted would mirror that of contacted households, and thus that 62.9% (approx 517 out of 822) of these households would have proven to contain an eligible man if contacted. We thus estimated a total eligible population of 2,815 men in our sampling frame. Of this estimated population, 27% could not be contacted (estimated $N=760$), 10.5% ($N=296$) refused to participate, 0.7% ($N=21$) agreed to complete interviews but then either withdrew or failed to provide any usable data, and 61.7% ($N=1,738$) completed the questionnaire.

Of the men interviewed, 70.7% ($N=1,230$) provided a blood sample. Thus 53.5% of enumerated and eligible men gave blood, this was equivalent to 43.7% of known plus estimated eligible men.

Questionnaire completion by racial composition of eas

There were significant differences in response rates depending on the predominant racial composition of the enumeration area. Because the racial composition of sampled households which could not be enumerated by our team was unknown, estimated the racial composition of the sampled households from South African census data for each ea. EAs were classified as Black, White, Colored or Indian if the reported population was more than 75% in any one group. EAs where the population of any one racial group did not reach 75% were classified as mixed race areas. Table 2 shows response rates among the total estimated eligible population (estimating eligibles among non-contacted household based on contacted households) by racial composition of the sampled eas.

Table 2 Response rates among the total estimated eligible population by racial composition of the sampled eas.

Outcome	Black	White	Coloured	Indian	Mixed
Number of eas	159	8	2	16	37
Est. Eligible Men	2,052	62	29	238	424
Number interviews	1,387	11	14	143	183
Interviews	67.6%	17.8%	47.9%	60.2%	43.2%
Partial interviews	0.7%	1.6%	6.8%	0.4%	0.5%
Refusals	7.8%	48.6%	6.8%	15.6%	15.8%
No contact	23.9%	32.0%	38.4%	23.8%	40.5%

HIV testing by race among study participants

Among men who were interviewed, 70.4% (1,039 out of 1,475) of Black African men, 84.5% (60 out of 71) of Coloured men, 73.9% (119 out of 161) of Indian men, 35.7% (10 out of 28) of White men, and 2 of 5 men who did not identify their race provided blood for HIV testing. Testing rates were significantly lower among white men than among other men ($p=0.0001$); there were no significant differences in testing rates among Black, Colored and Indian men ($p=0.12$).

3.0 RESULTS

3.1 COMPARISON BETWEEN THE AGES OF MEN INTERVIEWED AND THE GENERAL POPULATION

The age distribution of the sample is shown in table 3. Whilst the study was of men aged 18-49 years, half of the men interviewed were under 25 years of age and 70% were under 30. When comparing the age structure of the sample with that of all South African households enumerated in the 2003 South Africa Demographic & Health Survey (SADHS), it appears that our survey had fewer men aged 35-49 than the population. This suggests that some caution is needed in generalising prevalences from the findings of the study to men age 18-49 years in the population as a whole as men over 35 are somewhat under-represented.

Table 3: Age distribution of the sample and comparison to the age structure of men in households nationally recorded in the 2003 SADHS

age:	SADHS 2003	Rape Study	
	%	Total N	%
18-24	40.6% (age 15-24)	897	51.5%
25-29	14.8%	333	19.1%
30-34	13.0%	203	11.7%
35-39	12.6%	122	7.0%
40-44	11.1%	99	5.7%
45+	9.4%	86	4.9%

3.2 MEN'S BACKGROUND CHARACTERISTICS

The characteristics of the men interviewed overall are shown in Table 4. About 40% of the sample of men had completed matric or had attended a tertiary institution. Nearly 1 in 20 of the men had a tertiary qualification and the same proportion had never been to school. The men were very much better educated than their parents (see Table 5). Overall 85% of the sample were African, 10% were Indian and the remainder were white and Coloured. The proportion who were Indian was unusually high for South Africa and reflected the choice of study site, which included Ethekwini municipality (Durban) which has a particularly large Indian population.

The majority of men (61%) were single. Just under a quarter were married and about 1 in 8 (12%) were cohabiting. Nearly half of the men (48.6%) said the main providers were their parents. Only 31.4% of men said they provided the main source of income for the home. Nearly half of the men interviewed had no income, and two thirds either had no income or earned less than R500 per month. Less than a third of men had regular work throughout the year. More than half of the sample said they occasionally or regularly went hungry.

3.3 PREVALENCE OF RAPE

1686 out of 1737 respondents (97.1%) completed the rape perpetration questions. Rape of a woman or girl had been perpetrated by 27.6% (n=466) of the men interviewed. In all, 4.6% of men had raped a woman or girl in the past year.

3.4 CHARACTERISTICS ASSOCIATED WITH RAPE

Men's social and demographic characteristics

Table 4 also presents background characteristics by whether men had or had not raped. Age was significantly associated with the likelihood of having raped, with men aged 20-40 were more likely to have raped than younger or older men. Education was also associated, with men who had raped being better educated, although not more likely to have a tertiary qualification. There were significant racial differences in the prevalence of rape with Coloured men (45.7%) significantly more likely than African men (27.1%) to disclose having raped (OR 2.27 95%CI 1.43, 3.83 p=0.002).

Civil status was associated with having raped, with men who had raped being less likely to be single and more likely to be cohabiting with a woman. Income was associated with having raped. Men who had raped were significantly more likely to have earnings of over R500 per month. Men who raped were more likely to have occasional work and less likely to have never worked at all. They were more likely to report going hungry.

Table 4: Social and demographic characteristics of the sample

	Total		Rape		No rape		p value
	n	%	n	%	n	%	
Age: 18-20	444	25.5%	92	19.7%	340	27.9%	0.003
Age: 21-24	453	26.0%	140	30.0%	299	24.5%	
Age: 25-29	333	19.1%	103	22.1%	221	18.1%	
Age: 30-34	203	11.7%	58	12.5%	144	11.8%	
Age: 35-39	122	7.0%	38	8.2%	81	6.6%	
Age: 40-44	99	5.7%	18	3.9%	76	6.2%	
Age: 45+	86	4.9%	17	3.7%	60	4.9%	
Education: none	72	4.2%	19	4.1%	50	4.1%	0.04
Education: Primary or less	265	15.3%	61	13.1%	190	15.6%	
Education: Some secondary	692	39.9%	183	39.2%	501	41.2%	
Education: Matric	468	27.0%	131	28.1%	321	26.4%	
Education: Some tertiary	153	8.8%	57	12.2%	90	7.4%	
Education: Tertiary qualification	83	4.8%	16	3.4%	63	5.2%	
Race: Black	1,477	84.9%	388	83.1%	1,048	85.8%	0.002
Race: Coloured	72	4.1%	33	7.1%	38	3.1%	
Race: Indian	162	9.3%	43	9.2%	111	9.1%	
Race: White	28	1.7%	3	0.6%	24	2.0%	
Marital status: married	376	23.4%	91	20.8%	275	23.8%	<0.0001
Marital status: cohabiting with woman	186	11.6%	76	17.4%	108	9.3%	
Marital status: divorced/widowed	58	3.6%	23	5.3%	34	2.9%	
Marital status: Single	986	61.2%	244	55.8%	738	63.8%	
Marital status: cohabiting with man	4	0.3%	3	0.7%	1	0.1%	
Lives with children under 18	1153	66.8%	296	63.9%	824	67.9%	0.10
Earned or worked in past 12 months	945	54.6%	275	59.1%	642	52.8%	0.02
Monthly income: none	785	48.9%	190	43.1%	574	51.1%	0.0005
Monthly income: R1-R500	276	17.2%	67	15.2%	203	18.1%	
Monthly income: R501-R1000	186	11.6%	63	14.3%	115	10.2%	
Monthly income: R1001-R2000	155	9.7%	61	13.8%	92	8.2%	
Monthly income: R2001-R5000	119	7.4%	40	9.1%	76	6.8%	
Monthly income: R5001-R10000	54	3.4%	16	3.6%	36	3.2%	
Monthly income: Over R10000	31	1.9%	4	0.9%	27	2.4%	
Working: throughout year	488	28.9%	133	28.8%	337	28.6%	0.005
Working: seasonally	508	30.1%	144	31.2%	350	29.7%	
Working: occasionally	267	15.8%	92	19.9%	166	14.1%	
Working: never worked	425	25.2%	93	20.1%	325	27.6%	
Frequency of hunger due to lack of money: each month	356	22.7%	112	26.4%	243	21.3%	0.01
Frequency of hunger due to lack of money: occasional	455	28.9%	134	31.6%	321	28.1%	
Frequency of hunger due to lack of money: never	761	48.4%	178	42.0%	578	50.6%	

Men's childhoods: Perceptions of parents and childhood

The men interviewed were asked several questions on their childhood and perceptions of their parents. A notable feature was how many reported parental absence for much of or all of their childhood (Table 5). One third of mothers and two thirds of fathers were never or rarely at home. The men described very similar patterns of education for their mothers and fathers.

The table 5 shows that several aspects of childhood and home circumstances were associated with raping. Parental absence was significantly associated with raping. Interestingly men who raped had significantly more educated mothers, but not fathers. It is not clear what explains the association between rape and maternal education. It was not explained by maternal absence, the men's own education, perceptions of maternal kindness, income or demographic variables.

The quality of affective relationships with parents was related to raping. Men who raped perceived both their fathers and mothers to be significantly less kind ($p < 0.0001$). The difference in kindness scores was greater for paternal than maternal kindness, with men who raped rating their fathers significantly lower (11.2) compared to those who hadn't (12.2) on a paternal kindness scale.

Men who raped had also been exposed to significantly more adversity in childhood – defined as physical abuse, sexual abuse, physical hardship, emotional neglect and abuse. They scored an average of 21.1 on the childhood trauma scale compared to 18.5 for those who had not raped ($p < 0.0001$).

Table 5: Perceptions of parents and childhood

	Total		Rape		No rape		p value
	n	%	n	%	n	%	
Mother often/ always at home	1,017	59.5%	253	54.6%	743	62.0%	0.03
Father often/always at home	545	32.5%	125	27.4%	407	34.8%	0.01
Mother's education: none	355	23.1%	68	16.1%	274	25.4%	0.0001
Any primary or high school	1051	68.3%	296	70.2%	735	68.1%	
Complete high school or tertiary	133	8.6%	58	13.8%	71	6.6%	
Father's education: none	332	24.0%	73	19.6%	251	25.7%	0.21
Any primary or high school	918	66.4%	257	69.2%	639	65.6%	
Complete high school or tertiary	134	9.7%	42	11.3%	85	8.7%	
Was teased and harassed as a child	942	54.6%	315	67.5%	601	49.5%	<0.0001
Teased and harassed others	707	41.2%	275	59.0%	412	34.1%	<0.0001

Rape and bullying

Teasing and harassment, or bullying, were reported by many of the men in their childhood (table 6). Over half of the men had experienced this themselves (54%) and somewhat fewer (40%) had teased and harassed others. Experience of bullying and being bullied was much more common among men who raped.

The questionnaire asked some detailed questions about experiences of bullying and delinquent behaviour at school. The responses are shown in table 6. It is not possible to say that the acts of lunchbox stealing and making life difficult for teachers led to raping because we do not have a chronology of the different events, what can be said with confidence is that men who had raped were very much more likely to have engaged in a range of anti-social behaviour at school, including sexual harassment, and fighting with other gangs. Overall men who reporting raping scored an average of 12.3 versus 9.9 for men who had not ($p < 0.0001$) on the school bullying scale.

Table 6: Bullying and delinquent behaviour at school

	Total			Rape			No rape			P value
	Never %	Sometimes %	Often/ v.often %	Never %	Sometimes %	Often/ v.often %	Never %	Sometimes %	Often/ v.often %	
At school I was punished because I bullied other kids using physical violence.	76.3	18.1	5.6	58.3	33.2	8.5	83.3	12.3	4.4	<0.0001
At school I used to steal or demand other kids lunch boxes	86.2	10.2	3.6	72.3	22.8	5.0	91.7	5.6	2.7	<0.0001
My school friends & I would make life difficult for our teachers by doing what we felt like doing no matter what they said.	69.8	24.4	7.8	47.4	39.4	13.2	75.7	18.9	5.4	<0.0001
When a girl thought she was smart at school we would put her in her place by using her sexually	89.9	7.7	2.5	79.5	14.9	5.6	93.9	4.8	1.3	<0.0001
My school friends and I would arrange to have sex with girls after school	77.8	17.1	5.9	56.0	33.6	10.4	86.3	10.6	3.1	<0.0001
My school friends and I would put pressure on a girl to date one of us until she agreed.	59.9	28.6	11.5	42.6	41.5	15.9	66.6	23.5	9.9	<0.0001
My school friends & I would fight with rival groups at school	62.1	26.6	11.3	46.7	36.1	17.3	68.2	23.0	8.9	<0.0001
My school friends & I would rotate a girl amongst ourselves all having sex with her.	91.1	6.8	2.1	79.5	16.4	4.1	95.6	3.2	1.2	<0.0001
My school friends were not too concerned about school and homework	45.0	41.5	13.6	31.8	49.6	18.6	49.7	38.8	11.5	<0.0001

Rape and participation in crime

The men were asked a series of questions about involvement in different forms of theft and robbery. Only 43% of men said they had never been involved in stealing, and a third had stolen on more than 2 occasions (Table 7). One in four of the men had been in a fight with knives. While only 6% of men currently had a legal gun, one in ten said they had at some stage had an illegal gun, and 20% of the men said that they had another weapon. A high proportion of the men (one in four) had been arrested and about one in 12 had been imprisoned. Men who raped were much more likely to have been involved in theft and, with the exception of legal gun ownership, they were very much more likely to have been involved with weapons, gangs, and to have been arrested and imprisoned.

Table 7: Involvement in crime: theft, weapons, gangs and arrests

	Total		Rape		No rape		p value
	n	%	n	%	n	%	
Stolen or involved in robbery > 2 times	539	33.6%	251	58.1%	285	24.4%	<0.0001
Ever been in a fight with knives	434	26.7%	195	44.4%	238	20.2%	<0.0001
Ever had possession of an illegal gun	178	11.0%	106	26.1%	72	6.1%	<0.0001
Legal gun ownership	97	6.0%	32	7.4%	65	5.6%	0.22
Has any weapon	329	20.3%	138	31.6%	189	16.0%	<0.0001
Ever gang member	182	11.2%	99	22.6%	82	6.9%	<0.0001
Ever arrested	391	24.0%	146	33.3%	245	20.8%	<0.0001
Ever imprisoned	123	7.6%	58	13.2%	65	5.5%	<0.0001

Perceived achievement, empathy, psychopathy and rape

Men were asked about their perceptions of achievement in life through two questions. One asked how they compared themselves financially to when they were, 16 and the other about how they viewed their life circumstances overall now compared to those of peers they grew up with. In all, 57% perceived they were now financially better off than when they were aged 16 years, and 61% perceived that they had done better than their peers (table 8). Men who had raped were significantly less likely to view their currently financial and life circumstances positively in these ways.

Men were asked four questions that measured empathy (for example “I often have tender, concerned feelings for people less fortunate than me”) and men who raped scored significantly lower on empathy. We also asked 13 items from a psychopathy scale. These measured dimensions of blame externalisations and machiavellian egocentricity (for example “I quickly get annoyed with people who do not give me what I want” and “I sometimes lie to see if I can get someone to believe me”). Men who raped scored significantly higher on these dimensions of psychopathy.

Table 8: Perceived achievement, empathy, psychopathy and rape

	Total		Rape		No rape		p value
	n	%	n	%	n	%	
Finances now v. at age 16: much better or better	893	57.0%	223	52.5%	670	58.8%	0.03
The same	275	17.6%	86	20.2%	186	16.3%	
Less or much less good	398	25.5%	116	27.3%	282	24.8%	
Life circumstances now compared to peers: better or much better	961	61.2%	240	56.4%	721	63.2%	<0.0001
The same	298	19.0%	67	15.7%	228	20.0%	
Much less or less good	311	19.8%	119	27.9%	192	16.8%	
Empathy mean (max. score=20)		13.99		13.37		14.22	0.01
Machiavellian egocentricity & blame externalisation (mean)		29.72		33.65		28.27	<0.0001

3.5 PREVALENCE AND PATTERNS OF RAPE

Patterns of rape: relationship between victim and perpetrator

Overall, 27.6% of the men had raped any woman, while 14.3% had raped a current or ex-girlfriend or wife. Because most men who raped reported multiple rapes, non-partner rape was overall more common than partner rape. In all, only 4.6% of men report that they had raped a partner and not raped a woman who was not a partner (i.e. an acquaintance or stranger). 11.7% of men had raped an acquaintance or stranger (but not a partner) and 9.7% had raped both. In 30 cases, men disclosed participating in gang rape but did not indicate whether or not the woman (or women) had been a partner. Rape of men and boys was reported by 2.9% of respondents. We do not know how commonly these were partners.

Attempted rape

Attempted rape was reported by 16.8% of men, and 5.3% of men said they had attempted rape in previous 12 months. Where rape was attempted but not completed, the most commonly cited reason for not completing the act was that the men had decided it was wrong (75.1%), while a further 6.3% of men said they had changed their minds. Men could give more than one reason for not completing the rape, and reasons endorsed included failure to sustain an erection (35.6%), having been stopped by a third party (24.0%), being interrupted (28.7%), and being prevented because the woman fought back (22.8%).

Gang rape

In total, 8.9% of men said they had raped with one or more other perpetrators when a woman didn't consent to sex, was forced, or when she was too drunk to stop them. Sometimes men are in this situation but do not actually have sex with the woman. We asked men if they had ever been in a situation with other men where they forced a woman into sex but he didn't actually have sex with her, 14.0% of all men said that they had. Among these were 3.5% of the sample who indicated that they had been in more than one gang rape, and had been in both one (or more) where they had had sex and one (or more) where they had not. So in addition to the 8.9% of men who said they had sex during streamlining or gang rape, 10.5% said they had been in a streamlining without participating sexually. Thus the total proportion of the sample who had either gang raped a woman or been present during a gang rape and not forced intercourse was 19.5%.

The men who reported having done a gang rape were asked to select from a list of statements describing the circumstances when last they did it. More than one statement could be selected. Alcohol featured prominently, with 61.4% of men saying that they had been drinking before the rape, either with the woman victim (50%) or as a group of men (11.4%). In half of the gang rapes (50.7%) the woman agreed to have sex with one of the men and the others came and raped her. In 29.4% of cases her boyfriend was said to have organised it, and in a third of cases (32.5%) the gang rape was said to have occurred after two of them realised they were both her boyfriend (known as a clash). In all, 44.1% of men said it was a 'game'.

Patterns of rape

Nearly half of the men who raped (46.3%) said they had raped more than one woman or girl. In all, 23.2% of men said they had raped 2-3 women, 8.4% had raped 4-5 women, 7.1% said they had raped 6-10 and 7.7% said they had raped more than 10 women or girls.

Asked about their age at the first time they had forced a woman or girl into sex, 9.8% said they were under 10 years old, 16.4% were 10-14 years old, 46.5% were 15-19 years old, 18.6% were 20-24 years old, 6.9% were 25-29 years and 1.9% were 30 or older.

3.6 RAPE, HIV AND MYTHS OF VIRGIN SEX HIV CURE

The men were asked questions to assess hypothetical responses to learning that they were infected with HIV. One question asked whether they would try to have sex with a virgin to get cured and another asked about deliberately spreading HIV to others. Overall 10% of the sample endorsed a response category of 'agree or strongly agree' for each item (Table 9). Whilst both seeking cures and deliberate infection have been linked to rape by the media, men who had raped were not more likely to endorse them. Men with HIV (who may or may not have known their status) were slightly more likely to express intentions of deliberate spread to others. Looking at a subgroup of men who were HIV infected and had tested in the past year and taken their result, which we assume to be positive,

we see that 2 (4.3%) said they would have sex with a virgin to seek a cure, compared to 9.9% of other men. This suggests that men may be less likely to express this intentionality after discovering that they have HIV, although this requires confirmation. With regard to intentions of deliberate spread, 10.4% (5) of men who probably knew they were infected with HIV endorsed it, compared to 9.6% of those who didn't know they had HIV, suggesting this intention may not be impacted by knowing one's status. This is a potentially disturbingly large proportion although the actual numbers of men in the sub-group endorsing it was very small and requires both cautious interpretation and confirmation in other studies.

Table 9: Hypothetical responses to HIV: seeking virgin sex cure and deliberate spread

	Total	By rape perpetration status			By HIV status		
		Rape	No Rape		HIV	No HIV	
	%	%	%	p value	%	%	p value
If I had HIV I would have sex with a virgin to see if I could be cured	9.9%	11.2%	9.5%	0.50	14.3%	9.9%	0.29
If I had HIV I would spread it so I do not die alone	9.7%	12.1%	8.7%	0.31	14.2%	9.5%	0.002

3.7 ASSOCIATIONS BETWEEN RAPE AND OTHER VIOLENT AND RISKY SEXUAL BEHAVIOURS

Associations between other violent and sexually risky behaviours and rape perpetration are shown in table 10. Men who disclosed having raped were significantly more likely to have ever had more than 20 sexual partners, transactional sex, sex with a prostitute, heavy alcohol consumption, to have been physically violent towards a partner, raped a man, been forced to have sex with another man, and not to have used a condom consistently in the past year.

Table 10: The prevalence of violent and risky sexual behaviours and HIV infections in men who have raped and those who have not

	Rape	No rape	p value
	%	%	
20+ partners ever	52.8%	25.3%	<0.0001
Any transactional sex	78.4%	58.8%	<0.0001
Sex with a prostitute	34.3%	13.9%	<0.0001
High levels of alcohol in past year	35.4%	20.7%	<0.0001
> 1 episode of physical IPV	52.0%	20.3%	<0.0001
Rape of a man	9.4%	0.5%	<0.0001
Persuaded or forced to have sex with a man	17.2%	6.3%	<0.0001
Consistent condom use in past year	32.6%	39.9%	0.008

3.8 ASSOCIATIONS BETWEEN RAPE AND HIV

The HIV prevalence among men who had raped was 19.6% and 18.1% among those who had never raped. This difference was not significant ($p=0.53$). The HIV prevalence was lower, 12.7%, among those who had raped in the past year. Men who had raped another man, in contrast, had a higher prevalence of HIV (27.8%).

Figure 2: Age-specific prevalence of HIV by whether men had raped a woman, a man, raped in the past year or never raped

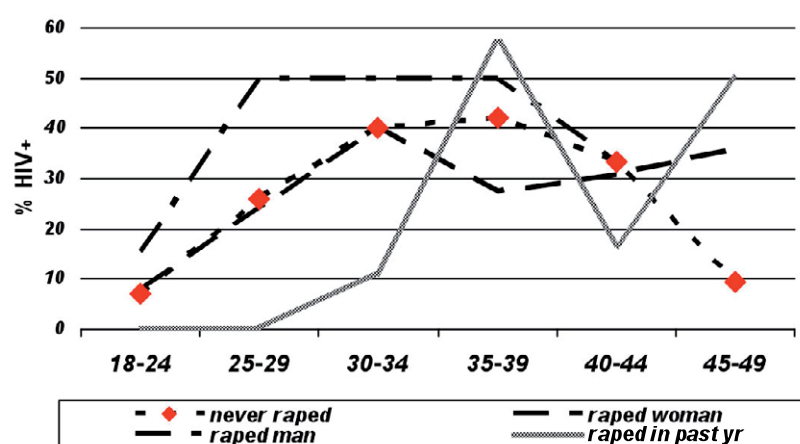


Figure 2 shows the age-specific prevalence of HIV among men who had and had not raped, and had done so in the previous year. The most striking feature of the graph of age-specific HIV prevalence is the very high prevalence of HIV for all men in this sample. The prevalence among all men aged 25-45 was in excess of 25%, and among those aged 30-39 years, over 40%. When examined by rape perpetration status, however, there was no overall difference between the HIV prevalence of men who had raped women and those who had never raped. This is a salient reminder that even without higher HIV prevalence among rape perpetrators, men who have raped have a very high likelihood of having HIV. The number of men reporting rape of men was much lower than that of women, but they had a higher HIV prevalence at all ages.

Table 11 shows the adjusted odds ratios of the association between different types of rape and HIV (adjusted for age and race). This table confirms that none of the types of rape of women and girls were associated with an elevated risk of HIV. In contrast, rape of a man was associated with an increased odds of HIV seropositivity.

Table 11: Association between rape perpetration and HIV prevalence: age & race adjusted odds ratios

	Adjusted Odds ratio	95% Confidence Interval	P value
Any rape of a woman	1.01	0.70, 1.46	0.97
Gang rape	1.38	0.79, 2.38	0.26
Rape of an intimate partner	0.86	0.54, 1.36	0.52
Rape of woman in past year	0.61	0.26, 1.43	0.25
Rape of a man or boy	2.55	1.06, 6.14	0.04

3.9 PREVALENCE OF INTIMATE PARTNER VIOLENCE AND ASSOCIATIONS WITH HIV

In all, 42.4% of men had been physically violent to an intimate partner (current or ex-girlfriend or wife). Asked about physical violence in the past year, 14.0% (95% CI 12.4, 15.7) of men disclosed perpetration.

3.10 INTIMATE PARTNER VIOLENCE AND ASSOCIATIONS WITH HIV RISK BEHAVIOURS AND HIV SERO-STATUS

Associations between violent and risky sexual behaviours and HIV infection among men who have perpetrated and have not perpetrated more than one episode of physical violence towards a partner are shown in Table 12. Men who disclosed multiple episodes of violence were significantly more likely to have had more than 20 lifetime partners, transactional sex, sex with a prostitute, heavy alcohol consumption, to have raped a woman, or raped a man and not to have used a condom consistently in the past year. They were also more likely to be infected with HIV.

Table 12: The prevalence of violent and risky sexual behaviours and of HIV in men who have perpetrated physical intimate partner violence more than once and those who have not

	>1 physical IPV %	1 episode of or no IPV %	p value
20 or more sexual partners in lifetime	51.5%	26.0%	<0.0001
Any transactional sex	81.0%	59.7%	<0.0001
Sex with a prostitute	31.6%	14.6%	<0.0001
High levels of alcohol in past year	39.3%	19.2%	<0.0001
Rape of woman	49.6%	18.8%	<0.0001
Rape of a man	6.6%	1.1%	<0.0001
Consistent condom use in past year	30.7%	41.0%	<0.0002
HIV	23.9%	16.5%	0.004

3.11 FACTORS ASSOCIATED WITH HAVING HIV

Table 13 presents a logistic regression model of all factors associated with having HIV. Men who had been physically violent to a partner on more than one occasion were significantly more likely to have HIV. Other associated factors were being African, rather than of another race group, being 25 or older, and having had a genital ulcer. Those who had completed matric at school or attended tertiary education and those who were circumcised were less likely to be infected. Having been violent towards a partner is clearly an indicator of a range of other sexually risk practices.

*Table 13: Logistic regression model of factors associated with having HIV**

	OR	95% Confidence Intervals		P value
>1 episode of physical IPV	1.48	1.01	2.17	0.04
Age 25 years and over	7.13	4.71	10.79	0.000
Race: African	6.0	2.77	12.98	0.000
Education: Up to primary school	1.00			
Education: Secondary schooling	0.79	0.49	1.76	0.32
Education: Matric or tertiary education	0.48	0.29	0.79	0.004
Ever had a genital ulcer	1.78	1.23	2.59	0.002
Circumcised	0.51	0.33	0.79	0.003

* adjusted for stratum

4.0 DISCUSSION

4.1 PREVALENCE OF RAPE

The main finding of the study was the very high prevalence of rape perpetration disclosed by this community-based sample of men. Whilst the prevalence is the highest previously recorded, it is not much higher than that found in the Stepping Stones study with a sample of younger men and our findings suggest that men who are somewhat older than the Stepping Stones group do report more rape. It is also not very dissimilar to the lifetime prevalence of experiencing sexual violence prevalence reported by women in Soweto (Dunkle et al 2004). The prevalence of rape of intimate partners was the same as that found by Abrahams et al (2004) among men in Cape Town in a study which did not ask about non-partner rape. The fact it was possible to have such a high level of rape disclosed to interviewers is likely also to be a testament to the success of the strategy of using the APDAs for data collection as these enabled rape to be disclosed privately. Through not having a face to face interview, they greatly reduced the performative aspect of interviews and so give us more confidence that there would not have been a problem of over-reporting. Under-reporting, either deliberately, or through re-construing acts of force as those of persuasion, is a recognised problem in research on rape. It is impossible to estimate the magnitude of under-reporting in this study.

4.2 PATTERNS OF RAPE OF WOMEN AND GIRLS

A substantial proportion of men in the study indicated that their first acts of rape perpetration occurred at a young age and that they had raped on more than one occasion. The problem of pre-teenage rape perpetration is well recognised, and was shown in the recent study of rape dockets in Gauteng province (Vetten, Jewkes, Sigsworth, Christofides, Loots & Dunseith 2008). Whilst the criminal justice system very infrequently convicts men of rape on more than one occasion (Vetten et al 2008), this reflects the huge difficulties in getting convictions in rape cases and the under-reporting of rape to the police, rather than the fact that rape is an act that is infrequently perpetrated more than once. Our findings, confirming research internationally (White & Smith 2004) show that rape is usually perpetrated for the first time by young men and boys and is very often perpetrated more than once.

The very high prevalence of rape, young age at first perpetration, and commonness with which rape is perpetrated on multiple occasions all highlight the importance of interventions to prevent rape that address the underlying ideas of gender hierarchy and male sexual entitlement. Rape is far too common, and its origins too deeply embedded in ideas about South African manhood, for the problem to be predominantly addressed through strategies of apprehending and prosecuting of perpetrators. This is not to say that prosecution of men who rape isn't needed, but rather that this will only make at best a small contribution to rape prevention and much more is required.

4.3 RAPE OF MEN

One of the surprising findings of the study was the high proportion of men who disclosed having been forced into sex by other men and also forcing other men to have sex. Nearly one in ten men said they had been forced into sex by a man, and this was very much more common among men who rape. The Stepping Stones study highlighted the importance of experience of rape among men and boys as a risk factor for youth HIV infection (Jewkes et al 2006) and the findings of this study confirm that male-male rape associated with much higher HIV prevalence. These findings point to the importance of raising awareness of male rape in communities so that men and boys who are raped come forward to rape services and receive post-exposure prophylaxis for HIV. They also highlight the importance of these services providing psychological support to male (and female) victims so that the well-recognised, cycle of victimisation leading to a greater risk of perpetration can be broken.

4.4 FACTORS ASSOCIATED WITH RAPE

The findings of this study confirm the importance of men's childhoods in the trajectory towards rape perpetration (and resilience to perpetration). The overall pattern of childhood described by the men interviewed reflected the destruction of normal family life that followed in the wake of the migrant labour system and policies of apartheid. Few of the men grew up with their fathers at home and many of the men experienced the absence of their mothers also. Whilst these patterns of child rearing have become normative over the last century, the study shows the harm these cause children. In particular men whose father was absent were much more likely to grow up to rape, although certainly not all men with absent fathers did so.

The study has also shown the impact of exposure to trauma in childhood on likelihood of raping. It confirms the finding of the Stepping Stones study, that experience of physical, emotional and sexual abuse in childhood influences trajectories of child development such that anti-social behaviour is more common, including rape. Another form of exposure to adversity in childhood that was associated with rape was experience of being bullied at school and in the community. We see that men who experienced bullying or being bullied were more likely to rape. This provides further evidence to support international research which shows that being bullied can have an important impact on psychological development and prevention of bullying should be taken seriously.

The experience of being bullied has been linked to subsequently using bullying behaviour. In this study bullying and disruptive behaviour at school was associated with raping, as were practices of fighting other groups of boys and sexually harassing girls. Whilst these practices are often seen as undesirable but otherwise 'normal' aspects of boys teenage years, both the association with rape and the impact of on victims of bullying highlight the importance of efforts to address it in schools.

This study has highlighted how incredibly common it is for men to participate in different forms of violence and crime. This highlights a problem in communities which clearly needs to be recognised and addressed as part of social crime prevention in the country. It also shows the overlap between different forms of crime and violence, and how common it is for men to be involved in multiple types of crime. A third of the men who had raped had been arrested, but these arrests were not usually for rape. The finding that men who rape are more likely to have been involved in theft and the use of weapons is unsurprising, and is confirmed by analysis of previous convictions of men who are arrested for rape (Vetten et al 2008).

4.5 RAPE, VIRGIN CURE MYTHS AND DELIBERATE SPREAD OF HIV

Our study findings show that there is no association between rape and ideas that having sex with a virgin can cure a man of HIV. This finding is not surprising and is supported by the observations of service providers and other research (Jewkes et al 2005). We did show that a greater proportion of men with HIV hypothetically endorsed a view that if they had HIV they would deliberately spread it. It is clearly an anti-social idea. It appears that it is not a product of learning that one has HIV as in fact the very small sub-group that probably knew they did have HIV who endorsed this was not larger than the group that didn't know that they were infected. The fact that the idea of deliberately infecting other and the virgin cure myth were endorsed by one in ten men is worrying as it provides another perspective on the frequency with which anti-social attitudes are held by men in communities.

These anti-social ideas and attitudes are also reflected in the findings on empathy and psychopathy and their association with rape perpetration. It is unsurprising that men who have raped should be less empathetic and more prone to psychopathic ideas and behaviours. There are many dimensions of psychopathy, but blame externalisation and Machiavellian egocentricity, which essentially is a measure of manipulateness and entitlement, are two critical dimensions. The study findings confirm previous research which suggests that men who rape were more likely to feel that they had done less well in life than their peers and less satisfied with their achievements. This is a perception and does not necessarily reflect reality.

4.6 RAPE, PHYSICAL INTIMATE PARTNER VIOLENCE AND HIV RISK BEHAVIOURS

This study confirmed the conclusions of previous research that men who perpetrate rape and physical intimate partner violence engage in a range of sexually risky behaviours including having more sexual partners, transactional sex, sex with prostitutes, and less condom use. They also drank more alcohol. Men who raped were more likely to be violent towards women in other ways and also to have raped other men.

4.7 RAPE AND HIV

A somewhat surprising finding of our study was that men who raped were no more likely to have HIV than men who hadn't raped. Indeed, the sub-group of men who disclosed rape perpetration in the past year were overall less likely to have HIV. We did not have any information on the temporal sequence of rape, sexual risk taking, and HIV infection so it is impossible to know the sequence of events. One of the very important findings is the very high HIV prevalence found in all the men, but particularly those aged 25-45. This provides a salient reminder of how likely it is that a man who rapes has HIV, irrespective of whether rapists have a higher risk of being HIV infected than non-rapists. Clearly post-exposure prophylaxis for HIV after rape is a very important part of post-rape care for victims who are HIV negative. The fact that so many rapes are gang rapes, or involve multiple acts of sex penetration (30% in cases reported to the police) and the high prevalence of injuries (at least 58% in rapes reported to the police) (Vetten et al 2008) further supports the very considerable risk of exposure to HIV of victims at the time of rape and risk of transmission through rape.

4.8 FACTORS ASSOCIATED WITH HIV

The factors that were shown to be associated with having HIV in the study are in many respects unsurprising. It is well known that the epidemic has disproportionately spread amongst Africans, that the most well educated are relatively more protected, that having genital ulcers increases the likelihood of having HIV and that circumcision is protective. What has previously been suspected, but not shown in research, is that men who are physically violent towards their intimate partners are more likely to have HIV. This finding is completely congruent with the documented association between being violent and sexual risk taking, and indeed the finding that women who experience violence are more likely to have HIV (Dunkle et al 2004). There is no biological explanation for this association, rather it seems likely that it is mediated through the association between violence perpetration and risky sex, and that both violence and sexual risk taking jointly arise from an underlying construction of masculinity predicated on male dominance, violence and sexual risk taking. It has been argued that such constructions of hegemonic masculinity are a key driver of the HIV epidemic and our finding supports this. HIV prevention needs to embrace and incorporate promoting more gender equitable models of masculinity. The intervention Stepping Stones, has been shown to have positive impact in this regard, and should be promoted (Jewkes, Nduna, Levin, Jama, Dunkle, Puren & Duvvury 2008).

5.0 RECOMMENDATIONS:

1. Rape prevention must focus on changing social norms around masculinity and sexual entitlement, and addressing the structural underpinnings of rape.
2. Post-exposure prophylaxis is a critical dimension of post-rape care, but it is just one dimension and a comprehensive care package needs to be delivered to all victims and should include support for the psychological responses to rape.
3. HIV prevention must embrace and incorporate promoting more gender equitable models of masculinity. Intervention that do this effectively must be promoted as part of HIV prevention

CONTRIBUTORS

Rachel Jewkes conceptualised and designed the study, drafted the proposal and accessed the funds, developed the first draft of the questionnaire and led on the questionnaire design, trained staff, took responsibility for blood samples, data analysis and led on report writing and did a little fieldwork.

Yandisa Sikweyiya managed the project overall, including community mobilisation, staff training and managing the field work and staff in the two sites. He led on the local validation and development of the questionnaire and contributed to the report writing.

Robert Morrell contributed to the conceptualisation of the study and the design of the questionnaire, planning of data analysis and the report writing. He also undertook a little of the fieldwork.

Kristin Dunkle contributed to the questionnaire design, planning of data analysis and report writing. She led on the development of the APDAs and technology for the study. She trained and supported field staff.

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