

Gender-Based Violence and HIV Infection among Pregnant Women in Soweto

A Technical Report to the Australian Agency for International Development

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Executive Summary

Research findings

Researchers and policy makers have increasingly cited gender-based violence and gender inequality as critically important determinants of women's HIV risk, yet empirical research on possible connections remains limited, especially within sub-Saharan Africa. This research was conducted to explore associations between gender-based violence and HIV infection. It is based on interviews with 1,395 women attending antenatal clinics in Soweto between November 2001 and April 2002 who accepted routine HIV testing.

We found that experience of intimate partner violence was prevalent and included financial (13.7%), emotional (67.5%), physical (50.4%) and sexual (20.1%) abuse. Of study participants, 55.5% reported lifetime history of physical or sexual assault by a male partner. Adult sexual assault by non-partners (7.9%), child sexual assault (8.0%) and forced first intercourse (7.3%) were also common. Child sexual assault and forced first intercourse were associated with increased risk of intimate partner violence and adult sexual assault by non-partners. Intimate partner violence, child sexual assault, forced first intercourse and adult sexual assault by non-partners were generally associated with increased HIV risk behaviours, as were mid or high scores on the Sexual Relationship Power Scale (SRPS) which measured women's power in her relationship.

Overall, 21.1% of participants reported transactional sex, which we defined as sex with a non-primary male partner in exchange for material goods or money. Women who reported intimate partner violence, problematic substance use, urban residence, ever working, or living in substandard housing were more likely to report transactional sex, while women who delayed first coitus, were married, or had a post-secondary education were less likely to do so. Transactional sex was associated with increased risk of HIV (OR=1.54, 95% CI: 1.07, 2.21) while having non-primary partners without transactional sex was not..

After adjustment for demographics and risk behaviour, broad versus limited or no intimate partner violence (OR=1.54; 95% CI: 1.19, 1.99) and high versus low levels of male control in a woman's current or most recent relationship (OR=1.56; 95% CI: 1.15, 2.11) were associated with HIV seropositivity, suggesting that intimate partner violence and women's subjective perception of relationship control are independently important predictors of HIV serostatus. Child sexual assault, forced first intercourse and adult sexual assault by non-partners were not associated with HIV serostatus; child sexual assault and forced first intercourse seem to impact women's HIV risk primarily through increasing the risk of intimate partner violence.

Summary of conclusions & messages

1. Gender-based violence highly prevalent amongst women attending Soweto antenatal clinics.
2. Intimate partner violence and gender-based power inequalities in relationships are associated with an increased risk of HIV infection after adjusting for social and demographic risk factors and for women's risk behaviours.
3. Gender-based power inequalities pose barriers to the adoption of safer sexual practices in relationships.
4. Intimate partner is associated with an increased risk of several risk factors for HIV infection including having multiple male sex partners, involvement in transactional sex, and problem drinking.
5. Intimate partner violence seems to be associated with an increased risk that the abusive male partner has HIV.
6. A simple set of four questions on experiences of physical violence can be used to screen for women's experience of violence with a low rate of false negatives.
7. The abused women in this study did not seem to make use of the information which could have enabled them to access services of an NGO, suggesting that non-availability of referral services might not be a barrier to raising issues of violence among women using health services.
8. There remains uncertainty around which interventions will increase women's safety in their relationships. This is an important subject for future research.
9. Discussing experiences of gender-based violence with women who are HIV positive in a post-test counselling or subsequent visit context should be a priority for services.
10. Health care staff require training on gender, screening for gender-based violence, listening to and supporting women if they are to identify women who have experienced intimate partner violence and provide an appropriate and helpful response.

11. Research needs to focus on development of interventions to prevent gender-based violence and providing interventions to ameliorate the impact of abuse on risk behaviours.
12. Intervention efforts in HIV prevention need to target male sexual risk taking, condom refusal, and violent behaviour, as well as working towards transformation of broader social structures which support female subordination and hinder women's socio-economic empowerment.

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Gender-Based Violence and HIV Infection among Pregnant Women in Soweto

1. Introduction

Connections between gender-based violence and HIV infection have received much attention in recent years in South Africa. There has been extensive media coverage of several cases of rape and child sexual abuse, highlighting the possibility that survivors of these crimes might have acquired HIV. Consequently, considerable public debate has focused on prevention of HIV transmission after rape through administration of anti-retroviral drugs. However, direct transmission of HIV during rape is only one of several ways in which gender-based violence may increase risk of HIV infection. Numerous researchers have highlighted the impact of sexual abuse in childhood and intimate partner violence in adulthood on sexual risk taking, and as well as the possible role of partner violence in inhibiting women from adopting self-protective practices such as condom use (Rao Gupta 2000). A further link to the HIV epidemic comes in the form of intimate partner violence experienced by women after they disclose that they have had an HIV test or disclose their HIV-positive status to their partner. Health services providing voluntary counselling and testing for HIV (VCT) need to be acutely aware that this is a possibility and to develop appropriate ways of identifying and responding to women who are potentially at risk for post-testing violence.

Given that intimate partner violence is considerably more common than rape, the possibility that it could contribute to risk of HIV infection is an important, but largely unexplored, area for research. To date, there has been no research on the relationship between different types of gender-based violence (child sexual assault, rape, partner violence, etc.) and HIV infection in a population of women who were unaware of their HIV serostatus, not has there been adequate research on the impact of partner violence on women's safety post-HIV testing. This research project was conducted 1) to understand the relationship between different forms of gender-based violence and HIV infection amongst women receiving VCT in South African antenatal services and 2) to develop an appropriate way of identifying and responding to women at risk of further violence.

2. Background to the study

2.1 HIV in South Africa

South Africa has one of the worst HIV epidemics in the world. There are an estimated 4.7 million HIV infected individuals, comprising approximately 1-in-9 individuals in the general population (Department of Health 2001). Much of the available data on prevalence and incidence of HIV in South Africa comes from anonymous surveillance in antenatal clinics by the Department of Health. These surveys, begun in 1990, have shown increases in national prevalence of HIV among pregnant women from 0.7% in 1990 to 16.0% in 1997 and 24.5% in 2000, with provincial prevalences in 2000 ranging from 8.7% (Western Cape) to 36.2% (KwaZulu-Natal). In Gauteng Province, where Soweto is located, HIV prevalence among pregnant women rose from 23.9% in 1999 to 29.3% in 2000 (Department of Health 2001). Although preliminary results from 2001 surveillance data are similar enough to 2000 data to prompt government claims that prevalence is stabilizing (Cauvin 2002), HIV/AIDS remains a public health crisis in South Africa, with one in three women of reproductive age infected in certain provinces (Department of Health 2001). Women seem to be infected approximately five years younger than their male peers (MacPhail, Williams et al. 2002). This is hypothesized to result from age differences in sexual partnerships (MacPhail, Williams et al. 2002), partly related to the wide-spread prevalence of transactional relationships in which young women rely on older men for financial and material support (Wood and Jewkes 2000) and possibly also to male belief that younger women are less likely to be infected (UNAIDS 1999).

AIDS awareness in South Africa is generally high, yet existing public health preventative and educational efforts have had limited success in curtailing the epidemic. In the 1998 South African Demographic and Health Survey (SADHS), 97% of women age 15-49 reported that they had heard of HIV/AIDS and 87% were aware that condoms reduce HIV risk. However, only 16% of those whose most recent sexual encounter was with a boyfriend or casual male acquaintance had used a condom in that encounter, and only 6% of those whose last sex was with a husband or cohabiting male partner had done so (Department of Health 1999). Such lack of condom use between long-term partners is problematic in a country where having multiple female partners is often considered a defining feature of successful masculinity (Varga 1997; Wood 2002).

Recently in South Africa, much attention has focused on the prevention of perinatal HIV transmission, with widespread controversy and a Constitutional Court case regarding national policy on perinatal use of drugs such as zidovudine and nevirapine for preventing pediatric HIV. Less attention has focused on the critical issue of women's HIV risk in and of itself, although protecting child-bearing women from HIV infection provides clear and unquestionably effective up-stream prevention of pediatric cases, in addition to offering the opportunity to interrupt cycles of heterosexual transmission. Furthermore, evidence suggests that women are more vulnerable than men to becoming infected through heterosexual encounters (UNAIDS 1999). It is therefore critical to develop a clearer understanding of the circumstances of South African women's lives which place them at risk for HIV infection and impact their ability to implement self-protective strategies such as condom use, mutual monogamy and abstinence. This information is necessary both to identify possible strategies for targeted new and novel intervention efforts, and to inform appropriate policy development within the health sector and within government.

2.2 Gender-Based Violence in South Africa

It is impossible to fully understand the life circumstances of South African women without considering the impact of gender-based violence. We use the term "gender-based violence" here in preference to "violence against women" to more clearly distinguish acts which are perpetrated and (to some extent) socially tolerated because the targets are female from other acts which may affect women but are unrelated to gender (for example, assault during robbery). While gender-based violence has been defined in a multitude of ways by various activists and scholars, the definition proposed by Lori Heise is perhaps one of the most straight-forward:

Any act of verbal or physical force, coercion, or life-threatening deprivation, directed at an individual woman or girl, that causes physical or psychological harm, humiliation or arbitrary deprivation of liberty and that perpetuates female subordination. (Heise, Pitanguy et al. 1994)

Gender-based violence includes, but is not limited to: acts of physical, sexual, and psychological violence by intimate partners, dating partners or family members; sexual assault and rape (including stranger rape, acquaintance/date rape and marital rape); childhood sexual assault of girls; sexual harassment; and forced prostitution.

Good estimates of the incidence and prevalence of gender-based violence within a population are difficult to obtain. The most reliable data generally derive from surveys specifically designed to address the question of gender-violence. A provincially representative population-based survey of gender-based violence in three South African provinces found the prevalence of physical abuse by an intimate partner in the past 12 months was 10.9% (Eastern Cape), 11.9% (Mpumalanga) and 4.5% (Northern Province), while lifetime prevalence was 26.8% (EC), 28.4% (M) and 19.1% (NP), and history of violence during a pregnancy 9.1% (EC), 6.7% (M) and 4.7% (NP) (Jewkes, Penn-Kekana et al. 1999). A prevalence of completed rape during the previous 12 months of 1,300 per 100,000 women, with a prevalence of rape plus attempted rape of 2,070 per 100,000 women (~2.1%) (Jewkes, Penn-Kekana et al. 1999).

2.3 Connections Between Violence and STD/HIV Infection

Gender-based violence and HIV are clearly interrelated, and a small but growing body of literature has begun to explore these connections. A recent review of some of the existing studies suggests that gender-based violence makes women vulnerable to HIV through three main mechanisms (Maman, Campbell et al. 2000). First, and most obviously, there is the possibility of direct transmission through forced or coerced sexual acts. Secondly, the trauma associated with violent experiences can impact later sexual behaviour. Third, violence or the threat of violence may limit women's ability to adopt safer sex practices within on-going relationships.

Violence may impact women's HIV risk through long-term impact on her emotional well being and her subsequent HIV risk behaviour. Violence has been linked to subsequent development of depression (Browne and Finkelhor 1986; Burnam, Stein et al. 1988; Winfield, George et al. 1990), post-traumatic stress disorder, and other anxiety disorders (Winfield, George et al. 1990; Breslau, Davis et al. 1991) which may in turn be associated with sexual risk taking behaviour (Miller 1999). Early experience of sexual violence in particular has been associated with traumatic sexualisation and difficulties in adult intimate relationships (Herman 1981; Finkelhor and Browne 1985; Browne and Finkelhor 1986) which can include engaging in behaviours associated with excess HIV risk. Evidence from developed countries suggests that violent experiences, particularly those occurring in

childhood or at first intercourse, can impact sexual behaviour years later. Reports from within the USA have found significant association between childhood sexual assault and early initiation of sexual activity (James and Meyerding 1977; Lodico and DiClemente 1994), number of sexual events in the past 30 days (Jinich, Paul et al. 1998), number of sexual partners (Cunningham, Stiffman et al. 1994; Zierler, Witbeck et al. 1996; Jinich, Paul et al. 1998) (He, McCoy et al. 1998; Mullings, Marquart et al. 2000), number of encounters with non-primary partners (Zierler, Feingold et al. 1991; Jinich, Paul et al. 1998), sex with a known risky partner (Cunningham, Stiffman et al. 1994; Mullings, Marquart et al. 2000), sex while intoxicated (Jinich, Paul et al. 1998), receptive anal sex (Wingood and DiClemente 1997; Mullings, Marquart et al. 2000), low condom use (Lodico and DiClemente 1994), abuse by a partner as an adult (Wingood and DiClemente 1997), STD history (Wingood and DiClemente 1997), trading sex for drugs or money (Mullings, Marquart et al. 2000), and engaging in sex work (James and Meyerding 1977; Cunningham, Stiffman et al. 1994) (Zierler, Feingold et al. 1991; Mullings, Marquart et al. 2000). The limited information available to date from developing countries shows a similar pattern. A study in Barbados found that childhood abuse was the single most important determinant of high risk sexual activity as in adolescents (Handwerker 1993), and a South African study found that forced first intercourse increased the risk of teenage pregnancy fourteen-fold after adjustment for socio-economic and other factors (Jewkes, Vundule et al. 2001).

Similarly, emerging evidence suggests a significant association between adult experience of gender-based violence and high risk sexual behaviour, although the findings are not totally consistent. Studies from developed countries have found associations between experience of gender-based violence as an adult and having multiple sex partners (Choi, Binson et al. 1998; He, McCoy et al. 1998), having multiple sexual encounters (Wingood and DiClemente 1998), taking casual sex partners (Kalichman, Williams et al. 1998), low condom use (Kalichman, Williams et al. 1998; Molina and Basinait-Smith 1998; Wingood and DiClemente 1998), having a partner with other partners (Molina and Basinait-Smith 1998), contracting an STD (Molina and Basinait-Smith 1998) and trading sex for money or drugs (Kalichman, Williams et al. 1998).

Finally, violence and the threat of violence may impact women's ability to implement HIV protective behaviours. Several studies have found that women, particularly women with a

history of violence, fear violent retaliation for requesting condom use (Kalichman, Williams et al. 1998; Weiss and Rao Gupta 1998), and that attempts by disadvantaged women to use condoms or access STD services are likely to lead to abuse (Worth 1989). A study among heterosexual African-American women in San Francisco found that women with abusive partners were more likely than other women to report being verbally abused, threatened with physical abuse or threatened with abandonment as a result of negotiating condom use (Wingood and DiClemente 1997; Wingood and DiClemente 1997). Women in Zimbabwe report physical violence and forced sex as retaliation for attempts to refuse sex with their partners (Watts, Ndlovu et al. 1997). More recent evidence, however, suggests that the relationship between partner violence and non-condom use may not be more complex than previously suggested. For example, the women interviewed in the South African Three Province Study who had experienced physical violence were actually more likely to have suggested condom use to their current partner than those who had not (Jewkes, Levin et al. 2003).

Intersections between violence and economic vulnerability may also increase women's HIV risk. Economically vulnerable women often depend on men's financial contributions and are less likely to successfully negotiate safer sex and less likely to leave relationships perceived as risky (Mane, Rao Gupta et al. 1994; Heise and Elias 1995). Economic vulnerability also increases the likelihood that women will exchange sex for money or favours (Weiss and Rao Gupta 1998). In Southern Africa, heterosexual sex is often culturally regarded as a commodity for exchange (Caldwell, Caldwell et al. 1989; Jewkes 2001; Wood 2002). However, women's economic vulnerability limits their ability to enter this exchange on equal footing and increases the probability that they will engage in transactional sexⁱ.

ⁱ The concept of "transactional sex" is evolving. We use the term here to include the middle ground of a continuum between sex enacted purely for reasons of fun or affection and frank sex work involving pre-negotiated exchange of money for sex. While "transactional sex" as we define it includes sex work, it also denotes a much broader range of situations (including those in on-going relationships) where sex is exchanged for something material or otherwise important (ex.. work, grades) and where there is an understanding that if the goods are not forthcoming, the sex will stop.

2.4 Limitations of Prior Work

While the body of literature exploring the connections between gender-based violence and HIV has expanded substantially within the last few years, much of it has been limited in methodology and scope. Many studies have focused on factors associated with HIV risk behaviours or drawn samples from highly specialised service locations such as HIV clinics, domestic violence shelters (Eby, Campbell et al. 1995; Fisher, Hbvell et al. 1995; Molina and Basinait-Smith 1998; Wingood, DiClemente et al. 2000), or emergency rooms (Jenny, Hooton et al. 1990; Glaser, Schachter et al. 1991). Surprisingly, despite the fact the sub-Saharan Africa is worst hit by the HIV epidemic, and despite the fact that HIV transmission in this region is predominately heterosexual, little quantitative research addressing the role of gender-based violence in HIV risk has been undertaken in the region. Two reports from Rwanda indicated that HIV positive women were more likely to report that their partner coerced that to have sex, and also more likely to report a history of physical violence. However, these data were gathered two years into an on-going intervention trial, and most women had been aware of their positive status since baseline, introducing the likelihood of reporting and recall bias. It is also impossible in these reports to distinguish whether partners who learned of the women's status became violent as a result (van der Straten, King et al. 1995; van der Straten, King et al. 1998). More recently, a study of 245 women attending a voluntary HIV counselling and testing centre in urban Tanzania found that among women under 30 years, HIV positive women were more likely to report a least one event of physical or sexual violence from their current partner than HIV negative women, while among women over 30, HIV status was not associated with violence (Maman, Mbwambo et al. 2002). These studies provide valuable evidence of a connection between intimate partner violence and women's HIV risk, but both assessed for violence after women were aware of their own serostatus and were somewhat limited in the breadth of violent and controlling experiences considered. Neither study controlled for effects of women's risk behaviour, although these behaviours may be associated with violence.

3.0 Objectives

In order to complement and build on existing research the following objectives were developed for the study:

Objective 1: To measure the prevalence of various forms of gender violence, including childhood sexual assault, forced first intercourse, physical abuse, rape and sexual assault among women attending antenatal clinic services in Soweto.

Objective 2: To describe the association between gender violence and HIV infection among the antenatal clinic population in Soweto and to explore the intersections between violence, risk behaviour, economic vulnerability and HIV serostatus.

Objective 3: To create a set of culturally validated screening questions and clinical practice guidelines regarding gender violence for use in antenatal care and VCT. These tools will help clinicians and counsellors identify women who have experienced violence or are currently in abusive relationships and support them appropriately.

4.0 Methods

4.1 Study Design

Cross-sectional survey, with interview data linked to HIV test results.

Setting

Participants were recruited from women attending antenatal clinics at four sites in Soweto: Chris Hani Baragwanath Hospital, Chiawelo Community Health Centre, Zola Community Health Centre and Lillian Ngoyi Community Health Centre .

Recruitment of Study Participants and Eligibility

All women presenting for antenatal care in these clinics were offered voluntary counselling and testing for HIV (VCT). The VCT process allowed women to choose from four testing

options: 1) no HIV test, 2) delay HIV test until a later visit, 3) have HIV test and get results same day, 4) have HIV test and gets results at a later visit. Women 16 years and older who elected options 3 or 4 were potentially eligible for our study. A team of six female fieldworkers approached women waiting in the clinics who had received pre-test counselling and invited them to consider participation in the study. Between them the field workers spoke all South African languages except xiTsonga. They were assigned to work in the clinics in pairs, and while the two working in a particular clinic on a given day did not always speak all languages, they were generally paired to cover both Nguni and Sotho group languages. Whenever possible, we invited all eligible women in a clinic on a given day to participate. When time constraints prevented this, and because no *a priori* lists of patients were available, we used the prolonged queues common in these clinics to systematically select potential participants. Fieldworkers approached women in the order they were waiting on the benches until they found an eligible and willing participant. After completing each interview they repeated the process with whoever was remaining in the queue.

To ensure that all participants would be unaware of their HIV status at the time of the interview, women were excluded from participation if they had previously received an HIV+ test result. They were also excluded from participation if they did not have a language in common with any of the interviewers, or if they had previously received antenatal care at another research site.

Fieldworkers

The field workers were selected after a rigorous process which tested their attitudes towards gender issues, open mindedness on sexuality issues and their ability to record responses on a questionnaire accurately. They were trained for two weeks including practice interviews. Training covered gender issues, sexuality and HIV as well as interview skills and the questionnaire. Personal experience of gender-based violence was explored. All had worked or trained previously as counsellors or social workers, and were given additional training for this project to assure that they could appropriately support interviewees who became distressed. Fieldworkers were mostly aged 23-30 years but one was in her early 40s.

Interviewing and Ethics

All informed consent procedures and research interviews took place in private rooms. A woman who expressed possible interest in participation would accompany a fieldworker to the interview room, where the fieldworker would read an informed consent document and answer any questions the woman had. Informed consent documents were printed in English, seSotho and isiZulu, and fieldworkers were able to translate into additional languages as necessary. If the potential participant agreed to the interview, she would complete it before returning to the queue and before receiving her HIV test results. All participants were all assured that they would not lose their places in the queues. Interviews ranged in length from 15 to 45 minutes. Interviewees were told they could stop the interview at any time they wished and need not answer all questions. All women were given a small slip of paper with the Stop AIDS helpline number on one side and referral information for the People Against Women Abuse (POWA) office at Chris Hani-Baragwanath on the other. POWA was funded for the duration of the study to ensure that women would be seen on a walk-in basis if they wished after the interviews.

All procedures followed the World Health Organization (WHO) Ethical and Safety Recommendations for Research on Domestic Violence Against Women (World Health Organization 2001). Ethical approval for the study was obtained from the Committee for Research on Human Subjects (Medical) at the University of the Witwatersrand and the Health Science Institutional Review Board at the University of Michigan.

4.2 Questionnaire Development

Questionnaires were drafted in English and then translated into isiZulu and seSotho in collaboration with the fieldwork team to ensure group consensus on question meanings and appropriate use of local dialect in translation. The questionnaire contained nine sections: demographics, pregnancy and children, demographics of current (or most recent) male partner, relationship control and duration of sexual relations, violence, sexual behaviour, employment history, substance use and a set of closing questions designed to collect final information about the current (or most recent male partner) and end the interview on a positive note. To the extent possible, the questionnaire employed standard measures which had been previously tested and validated for use in South Africa. Where

this was not possible, we designed and tested instruments and methods ourselves through pre-testing and piloting.

Housing Quality Index: As part of the socio-economic status assessment, we employed a housing quality index developed by Prof. Margaret Westaway for use in Soweto (Westaway and Gumede 1999).

Sexual Relationship Power Scale: This scale was used to capture women's subjective experiences of being controlled by a male partner in their relationship. We used an Jewkes *et al's* South African adaptation (Jewkes, Nduna et al. 2002). The SRPS was designed to assess the balance of power in sexual decision making within heterosexual relationships (Pulerwitz, Gortmaker et al. 2000). It is a measure of women's subjective experience of gender inequality in relationships, and thus departs from the rather narrow focus of most violence against women instruments which ask about specific acts by male partners without exploring the meanings that women attach to those acts. It consists of 12 statements about women's relationship with the current male partner (ex. "My partner tells me who I can spend time with", "I feel trapped or stuck in our relationship") which are rated strongly agree, agree, disagree, or strongly disagree.

Measuring Numbers of Sexual Partners

Prior research by the Gender and Health Group has demonstrated the value of asking separately about different types of sexual partners (Jewkes, Nduna et al. 2002), we therefore designed an assessment which asked separately about numbers of main partners, numbers of roll-ons and numbers of once-off partners. A "roll-on" [*nyatsi* (in seSotho) or *makwpheni* (in isiZulu)] is a slang term for a secret partnership held concurrently with a main partnership. "Roll-on" derives from roll-on deodorant which is hidden in the armpit. While "roll-on" is recent slang, this type of relationship is not new. As one fieldworker remarked, "You can talk about *nyatsi* in front of your grandmother." We used the term "once-off" to denote any male partner with whom a woman had sex only once. These included planned "hit and run" or "taste and pass" encounters, as well as men with whom a woman had sex in the hope of forging a main partnership that never materialized. We asked about each type of partner during the past year and during the woman's life.

Because early pilot results showed that pregnant women in a clinical setting were somewhat reticent about discussing partner numbers, we designed a “secret question” reporting method. Women were asked how many partners of each type that they had in the past year, and responded by circling the number representing their answer on a slip of paper. They then placed the paper in an envelope without showing it to the interviewer. The slips had numbers from 0-10+ for main partner in the past year, 0-20+ for other types of partners in the last year, and from 0-30+ for the lifetime questions. In total each woman completed six slips.

Transactional Sex

The concept of “transactional sex” is evolving. It is increasingly recognised in the gender and sexual literature that sex takes place on a continuum ranging from sex enacted purely for reasons of fun or affection on one hand to self-identified sex work involving pre-negotiated exchange of money for sex on the other. The term “transactional sex” thus includes sex work but also denotes situations (including those in on-going casual partnerships) where sex is exchanged for something material or otherwise important and where there is an understanding that if the goods are not forthcoming, there will be no sex or it will stop.

We interviewed local experts and key informants to develop a list of commodities for which sex is commonly exchanged and the types of partners with whom these exchanges occur. We then developed and tested a set of detailed questions regarding history of transactional sex with casual partners. These asked about having sex with once-offs and roll-ons in exchange for cash, food, clothes, cosmetics, transport, space to sleep, school fees and/or items for the woman's family. We did not ask about transactional relationships with main partners as we considered it too difficult to effectively tease out the motivations for sex within main partnerships.

Substance Use

We asked all women whether they had ever used alcohol, *dagga*, mandrax, injectable drugs or other drugs. The prevalence of substance use among South African women is low (Department of Health 1999) and previous research has shown that asking about

experience of problems with drinking is more strongly associated with violence against women than actual consumption. We therefore adapted our own instrument for assessing problematic substance use from one previously used by the MRC Gender & Health Group. Because our primary interest was in the impact of substance use on the woman's life and HIV risk, we asked a series of questions about things which might have happened to her after she had been drinking or using drugs: got into a fight, had an accident or injured yourself in some way, got arrested, had sex with a man you just met, forced by anyone to have sex against your wishes. Women who responded 'yes' to any of these questions were classified as having a history of problematic substance use.

4.3 Assessing the History of Violence

Adapted World Health Organization Violence Against Women Instrument:

Our primary tool for assessing history of intimate partner violence (IPV) was the WHO violence against women instrument (WHO Multi-Country Study Core Team 2000), which we supplemented with additional questions on financial and emotional abuse from prior research in South Africa (Jewkes, Penn-Kekana et al. 1999; Jewkes, Penn-Kekana et al. 2000). This instrument was developed for a multi-country study on women's health and domestic violence, and thus will facilitate comparisons of our data with studies from other countries. Our version covers financial abuse (3 questions), emotional abuse (8 questions), physical abuse (6 questions) and sexual abuse (3 questions). We further adapted the WHO instrument so that each of these items contained data on whether the woman ever experienced the item in question, whether this took place during the past year or prior to the past year, and her perception of the frequency of the abuse in each time period (once, a few times, many times).

Childhood Sexual Assault (CSA)

Following the 1998 South Africa Demographic & Health Survey and the WHO, we defined child sexual assault as assaults occurring before age 15 (Department of Health, 1999; WHO Multi-Country Study Core Team 2000). We asked all participants if they had experienced unwanted sexual contact or rape prior to age 15, and for women who answered affirmatively, we also asked about age at onset, frequency and perpetrator of such events. We also considered women to have experienced child sexual assault if they reported forced first intercourse or sexual assault by an intimate partner before age 15.

Adult Sexual Assault by non-partner (ASA-np)

We asked all women if “anyone else apart from a boyfriend or husband ever made you have sex when you did not want to?” and if “someone tried to make you have sex when you did not want to, but did not succeed in doing this?” Women who responded affirmatively were considered to have experienced adult sexual assault by a non-partner (ASA-np). Again, we asked about age at onset, frequency and perpetrator of such events.

Forced First Intercourse (FFI)

Women were asked to choose the statement which most accurately described their experience of first coitus: “I was willing,” “I was persuaded,” “I was tricked,” “I was forced,” or “I was raped.” Those who endorsed the latter two were considered to have experienced forced first intercourse (FFI). Women were also categorized as experiencing forced first intercourse if they had reported a completed rape by any perpetrator at a younger age than they reported for first intercourse. In these cases, (N=42) age at first rape was considered to represent age at first intercourse.

4.4 Data Analysis

Data were double-entered into EpiInfo 6.04d (Centers for Disease Control and Prevention 2001) and then validated through second entry. All analysis was performed using SAS 8.02 (SAS Institute 1999-2001). We first calculated descriptive statistics for HIV, socio-demographic variables, prevalence of violence, and prevalence of various risk behaviours, including transactional sex. We then explored patterns of overlap between different types of gender-based violence and finally proceeded to more complex modelling procedures to examine associations between violence and other variable of interest.

Factors associated with transactional sex

We first examined bivariate associations between individual demographic variables and transactional sex (ever/never) using logistic regression with dummy variable adjustment for interviewer effects. We next constructed three multiple logistic regression models. We first modelled factors associated with ever engaging in transactional sex among the entire study population. However, since this approach did not clearly separate the odds of having

non-primary partners from those of having transactional sex; we then modelled factors associated with having a non-primary partner among the entire study population, and then factors associated with having transactional sex given that a woman reported ever having sex with a non-primary partner. For each set of regressions, we constructed a base model consisting of socio-demographic variables, and then added violence measures and sexual behaviour variables, using the log-rank test to assess the contribution of each variable to overall fit. To facilitate comparisons, all three final models include all variables significant in any model. Finally, we examined the association between transactional sex and prevalent HIV infection, adjusting for time from first coitus and lifetime number of male partners.

Analysis of association between HIV and gender-based violence

We considered three dimensions of intimate partner violence with respect to HIV status: type (psychological, physical or sexual), patterns of overlap between types, and reported frequency. Frequency of violence was summarized across individual questions: "once" responses on all questions was classified as low frequency, any "few times" responses but no "many times" as mid frequency, and any "many times" response as high frequency. Because multiplicity of types of abuse was related to increasing frequency, and both breadth and frequency were independently predictive of HIV risk, we constructed a summary measure which classified women as having broad experience of IPV (two or more types of abuse or mid to high frequency physical or sexual abuse) versus limited to no experience of IPV (psychological abuse only, or low frequency physical or sexual abuse only). This summary measure was used in all multivariate analyses. SRPS scores were categorized as high, mid and low based on tertiles of the distribution (Pulerwitz, Gortmaker et al. 2000).

We examined child sexual assault, forced first intercourse and adult sexual assault by non-partners first as simple ever/never variables with respect to HIV serostatus. Because all three frequently co-occurred with intimate partner violence, we next constructed three-level variables as follows: limited partner violence or no gender-based violence; child sexual assault alone; or child sexual assault with broad partner violence (and likewise for forced first intercourse and adult sexual assault by non-partners). These derived variables were then used to predict HIV status.

Multiple variable logistic regression models were used to examine whether association between different forms of violence and/or SRPS score and HIV persisted after adjustment for risk behaviours. Because having five or more lifetime male partners, having casual male partners, and engaging in transactional sex were highly correlated, we constructed a summary measure which jointly considered these variables. All socio-demographic variables significantly associated with both HIV and experience of violence were tested as potential confounders of the association between violence and HIV; those found to significantly confound this association were included in the final model.

5.0 Results

5.1 Participation Rates

3,982 women received HIV pre-test counseling on days when we were interviewing. Of these, 1,790 (45.0%) were approached regarding potential participation. Of these, 82.0% (N=1,467) were eligible for the study. Of the 323 ineligible women, 274 were not having an HIV test that day (84.8%), 21 did not have a language in common with the interviewer (6.5%), 11 had prior knowledge of HIV+ status (3.4%), 11 had previously received care at another research site (3.4%), and 6 were underage (1.9%). Of the potentially eligible women, 95.1% (N=1,395) agreed to participate and completed usable interviews. There were no significant differences by interview site in the proportion of women eligible for participation or the proportion of eligible women who agreed to participate.

5.2 Social and Demographic Characteristics

Tables 1 and 2 show the basic demographic, social and economic characteristics of the women interviewed. The age distribution of the participants was consistent with the age distribution of women attending antenatal care, with the highest number of participants in their early twenties. The levels of completed education reported were as expected. The distribution of first languages is representative of the areas of the township where the study clinics were located, as are the housing and employment indicators.

Table 1: Basic Demographics of Participants

	N	%
Age		
16-20	291	20.9
21-25	446	32.0
26-30	352	25.2
31-35	196	14.1
36+	110	7.9
Education		
0 to 5 years	56	4.0
6 to 11 years	764	54.8
12 years	474	34.0
Any post-secondary	101	7.2
Currently studying (any level)	135	9.7
Language spoken at home (N=1394)		
Zulu	666	47.7
South Sotho	264	18.9
Xhosa	197	14.1
Tsonga	87	6.24
Tswana	73	5.24
Venda	41	2.94
North Sotho	36	2.58
Others (includes: Ndebele, Swazi, English, Afrikaans, French, and Portugese)	30	2.15
Primary residence rural, last 5 years	156	11.5

Of potential interest for understanding the economic dynamics of women's lives is that nearly half of all study participants reported living in households where neither they nor their male partner provided the main income. Provision of money for the home by a someone other than the woman or her partner has been previously shown to be protective against experience of violence in the past year by women in South Africa (Jewkes, Levin et al. 2002). Also notable is the large number of women who reported experience of hunger in their households.

Table 2: Economic Status Indicators

Housing Quality	N	%
Home has access to piped water (N=1388)	1281	92.3
Home has access to flush toilet (N=1394)	1142	81.9
Home has electricity (N=1393)	1151	82.6
Home has television (N=1379)	1054	76.4
Earning History		
Woman earned money in past 12 months	417	29.9
Woman has ever earned money	583	41.8
Main Household Income Provided by (N=1389):		
Participant	161	11.6
Male Partner	526	37.9
Both Equally	49	3.5
Other Person	653	47.0
People in home ever go hungry (N=1371)	517	37.7

Table 3 describes basic variables related to sexual and reproductive history of the study participants. While most women had been pregnant at least once before, a substantial proportion of women were in their first pregnancy (38.1%). Just over half the sample, 54.1% (N=754), had living children; among these, only 48.3% (N=364) reported the same father for all children and the current pregnancy. This has potentially important implications for thinking about women’s HIV risk, as women seem less likely to use condoms with men considered as main partners or the father of a child.

Table 3: Sexual and Reproductive History

	Number Responding	N	%	Range	Median	IQR
Age at first intercourse ⁱⁱ	1384	---	---	5-29	17	16-18
Previous pregnancy	1393	862	61.9			
Age at first pregnancy	859	---	---	13-32	19	17-21
Previous birth	1393	801	57.50			
Age at first birth	793			13-32	20	18-22
Current gestational age (weeks)						
(1)	1376	---	---	6-41	20	16-28
No. of living children among those who have given birth	792			0-8	1	1-2

Table 4 summarizes the women’s descriptions of their current or most recent male partners. 98.6% of the women reported that they currently had a main male partner; the majority of the remaining 1.4% reported that their partner had died since they became pregnant. Interestingly, fully half of the women reported being in relationships with men to whom they were neither married nor living together and 302 (23.5%) reported that they had been with their current main partner for 12 months or less. The distribution of the men’s education was generally comparable to the women’s, but the men were far more likely to be currently earning money. Women were asked if their current partner has been a migrant worker, in the military, in police cells or a gang member or active in a religion. All of these were potential confounders, albeit operating in different directions, of the relationship between HIV and intimate partner violence.

ⁱⁱ Age at first intercourse in this table includes both forced and consensual sexual experiences at first coitus.

Table 4: Characteristics of Relationship and Current or Most Recent Male Partner

	N	%	Range	Median	IQR
Relationship Status					
Married	312	22.4			
Living together	367	26.3			
Steady boyfriend	697	50.0			
Single or partner deceased	19	1.4			
Length of relationship (months) ⁱⁱⁱ			1 ^{iv} -338	34	29-71
Partner's Socio-demographics					
Male partner's age in years ^v			16-63	30	26-35
Difference between man's and woman's age			-8 to +36	+4	+2 to +7
Education: 0 to 5 years	160	11.8			
6 to 11 years	660	48.5			
12 years	483	35.5			
Any post-secondary	139	10.2			
Participant doesn't know	94	6.9			
Partner earning money	1134	81.5			
Partner drinks alcohol	708	50.8			
Partner smokes dagga	85	6.1			
Partner has been migrant labourer	111	8.0			
Partner has been in military	46	3.3			
Partner has been held overnight in police cell	170	12.2			
Partner has been in gang	29	2.1			
Partner active in church/mosque	435	31.3			

ⁱⁱⁱ Range: 1 month to 28.2 years; median 2 years, 10 months; IQR: 2 years, 5 months – 5 years, 11 months

^{iv} only 1 participant reported a relationships of less than 2 months duration, suggesting that for most the current partner was probably the father of the pregnancy

^v 20 participants (1.4%) didn't know male partner's age

5.3 Prevalence of Violence By Male Intimate Partners

Tables 5 & 6 describe the prevalence of financial, emotional, physical and sexual assault by male intimate partners, while figure 1 describes the overlap between various types of abuse. The past year and lifetime prevalence of physical and sexual assault was high: 30.1% of participants reported being physically or sexually assaulted by a male partner in the last 12 months, with 21.8% of the overall sample reporting more than one incident. Likewise, 55.5% of participants reported being physically or sexually assault by a male partner at least once during their lives, with 42.8% reporting more than one incident. Overall, only 22.1% (N=308) of participants reported no abuse in their lifetimes. Another 22.5% (N=314) reported psychological (emotional and/or financial abuse) only, while 29.8% (N=416) reported experiencing psychological abuse with physical abuse, and 13.4% (N=187) reported experiencing psychological, physical and sexual abuse. Other patterns of overlap were reported by 10.2% (N=142) of participants.

Financial and emotional abuse were more likely to be reported as recurrent experiences than physical or sexual abuse. 81.1% of women who reported lifetime financial abuse and 75.5% of women who reported lifetime emotional abuse reported that it also occurred in the last 12 months. In contrast, only 46.8% of those who reported lifetime physical violence and 54.3% of those who reported lifetime sexual violence reported that it also occurred in the last 12 months. Among women reporting lifetime financial abuse, 94.2% reported more than one incident, as did 95.5% of women reporting emotional abuse. In contrast, 76.8% of those reporting lifetime physical abuse and 77.2% of those reporting lifetime sexual abuse reported more than one incident. Proportions of each type of abuse occurring more than once in the past 12 months were nearly identical.

Women reporting any financial abuse in the past year answered yes to a mean of 1.07 questions; and a mean 1.09 questions for their lifetimes. For emotional abuse, women reported a mean 2.20 yes answers in the past year and a mean 2.65 in their lifetime. Women reporting physical abuse reported a mean 2.10 yes answers in the past year, and 2.37 in their lifetime; equivalent figures for sexual abuse were 1.61 and 1.65.

Table 5: Prevalence of financial and emotional abuse, past 12 months & lifetime

	Past 12 Months							
	Yes		Once		Few		Many	
Financial Abuse, past 12 months								
Failed to provide money for house/children, but had money for other things? (1)	87	6.2%	3	0.2%	43	3.1%	41	2.9%
Taken your earnings or pay packet from you?	9	0.7%	1	0.1%	1	0.1%	7	0.5%
Tried to prevent you working, selling, or making money?	69	4.9%	2	0.1%	13	0.9%	54	3.9%
Any financial abuse	154	11.1%	5	0.4%	55	4.0%	94	6.8%
Emotional Abuse, past 12 months								
Forced you/children to leave the place where you were living?	71	5.1%	10	0.7%	31	2.2%	30	2.2%
Insulted you or made you feel bad about yourself?	255	18.3%	24	1.7%	113	8.1%	118	8.5%
Belittled or humiliated you in front of other people?	134	9.6%	15	1.1%	36	2.6%	83	6.0%
Tried to prevent you from seeing family or friends?	134	9.6%	8	0.6%	43	3.1%	83	6.0%
Tried to prevent you from speaking with other men?	461	33.2%	7	0.5%	117	8.4%	337	24.3%
Boasted about or brought home girlfriends?	81	5.8%	20	1.4%	24	1.7%	37	2.7%
Scare or intimidate you on purpose (yelling, smashing things)?	117	8.4%	12	0.9%	46	3.3%	59	4.2%
Threatened to hurt you?	310	22.3%	52	3.7%	116	8.4%	142	10.2%
Any emotional abuse	709	51.0%	45	3.2%	211	15.2%	453	32.6%
Lifetime								
	Yes		Once		Few		Many	
Financial Abuse, Lifetime								
Failed to provide money for house/children, but had money for other things? (1)	105	7.5%	2	0.1%	50	3.6%	53	3.8%
Taken your earnings or pay packet from you?	20	1.5%	4	0.3%	3	0.2%	12	0.9%
Tried to prevent you working, selling, or making money?	83	6.0%	6	0.4%	10	0.7%	67	4.8%
Any financial abuse	190	13.7%	11	0.8%	59	4.3%	120	8.7%
Emotional Abuse, Lifetime								
Forced you/children to leave the place where you were living?	104	7.5%	18	1.3%	36	2.6%	50	3.6%
Insulted you or made you feel bad about yourself?	447	32.0%	31	2.2%	167	12.0%	250	17.9%
Belittled or humiliated you in front of other people?	253	18.1%	31	2.2%	50	3.6%	168	12.1%
Tried to prevent you from seeing family or friends?	202	14.5%	9	0.6%	55	3.9%	137	9.8%
Tried to prevent you from speaking with other men?	595	42.8%	9	0.6%	113	8.1%	473	34.1%
Boasted about or brought home girlfriends?	176	12.7%	41	2.9%	40	2.9%	94	6.8%
Scare or intimidate you on purpose (yelling, smashing things)?	200	14.3%	24	1.7%	56	4.0%	120	8.6%
Threatened to hurt you?	509	36.6%	42	3.0%	134	9.6%	330	23.8%
Any emotional abuse	939	67.5%	42	3.0%	206	14.8%	691	49.7%

Table 6: Prevalence of physical and sexual abuse, past 12 months & lifetime

	Past 12 Months							
Physical Abuse, past 12 months	Yes		Once		Few		Many	
Pushed you or shoved you?	148	10.6%	25	1.8%	54	3.9%	69	5.0%
Slapped you or threw something at you which could hurt you?	301	21.6%	88	6.3%	116	8.3%	97	7.0%
Hit you with his fist/something else that could hurt you?	109	7.8%	9	0.6%	44	3.2%	56	4.0%
Kicked you, dragged you or beat you up?	85	6.1%	14	1.0%	26	1.9%	45	3.2%
Strangled you or burnt you on purpose?	39	2.8%	12	0.9%	13	0.9%	13	0.9%
Threatened to use/ used gun, knife or other weapon?	60	4.3%	16	1.2%	22	1.6%	22	1.6%
Any physical abuse	352	25.5%	99	7.2%	132	9.6%	121	8.8%
Sexual Abuse, past 12 months								
Physically forced you to have sex when you didn't want to?	97	7.0%	18	1.3%	36	2.6%	43	3.1%
Had sex when you did not want to because you were afraid of what he might do?	102	7.3%	15	1.1%	50	3.6%	37	2.7%
Forced you to do something sexual that you found degrading or humiliating?	19	1.4%	7	0.5%	7	0.5%	5	0.4%
Any sexual abuse	135	9.7%	28	2.0%	59	4.2%	48	3.5%
Any physical or sexual abuse, past 12 months	420	30.1%	116	8.3%	162	11.6%	142	10.2%
	Lifetime							
Physical Abuse, lifetime	Yes		Once		Few		Many	
Pushed you or shoved you?	318	22.9%	43	3.1%	98	7.1%	176	12.7%
Slapped you or threw something at you which could hurt you?	625	44.8%	153	11.0%	203	14.6%	268	19.2%
Hit you with his fist/something else that could hurt you?	264	18.9%	25	1.8%	66	4.7%	173	12.4%
Kicked you, dragged you or beat you up?	217	15.6%	24	1.7%	45	3.2%	148	10.6%
Strangled you or burnt you on purpose?	95	6.8%	16	1.1%	22	1.6%	53	3.8%
Threatened to use/ used gun, knife or other weapon?	128	9.2%	37	2.7%	32	2.3%	59	4.3%
Any physical abuse	695	50.4%	161	11.7%	219	15.9%	315	22.8%
Sexual Abuse, lifetime								
Physically forced you to have sex when you didn't want to?	222	15.9%	58	4.2%	71	5.1%	92	6.6%
Had sex when you did not want to because you were afraid of what he might do?	188	13.5%	31	2.2%	71	5.1%	86	6.2%
Forced you to do something sexual that you found degrading or humiliating?	52	3.7%	17	1.2%	31	2.3%	18	1.3%
Any sexual abuse	280	20.1%	75	5.4%	98	7.0%	107	7.7%
Any physical or sexual abuse, lifetime	773	55.5%	176	12.6%	250	17.9%	347	24.9%

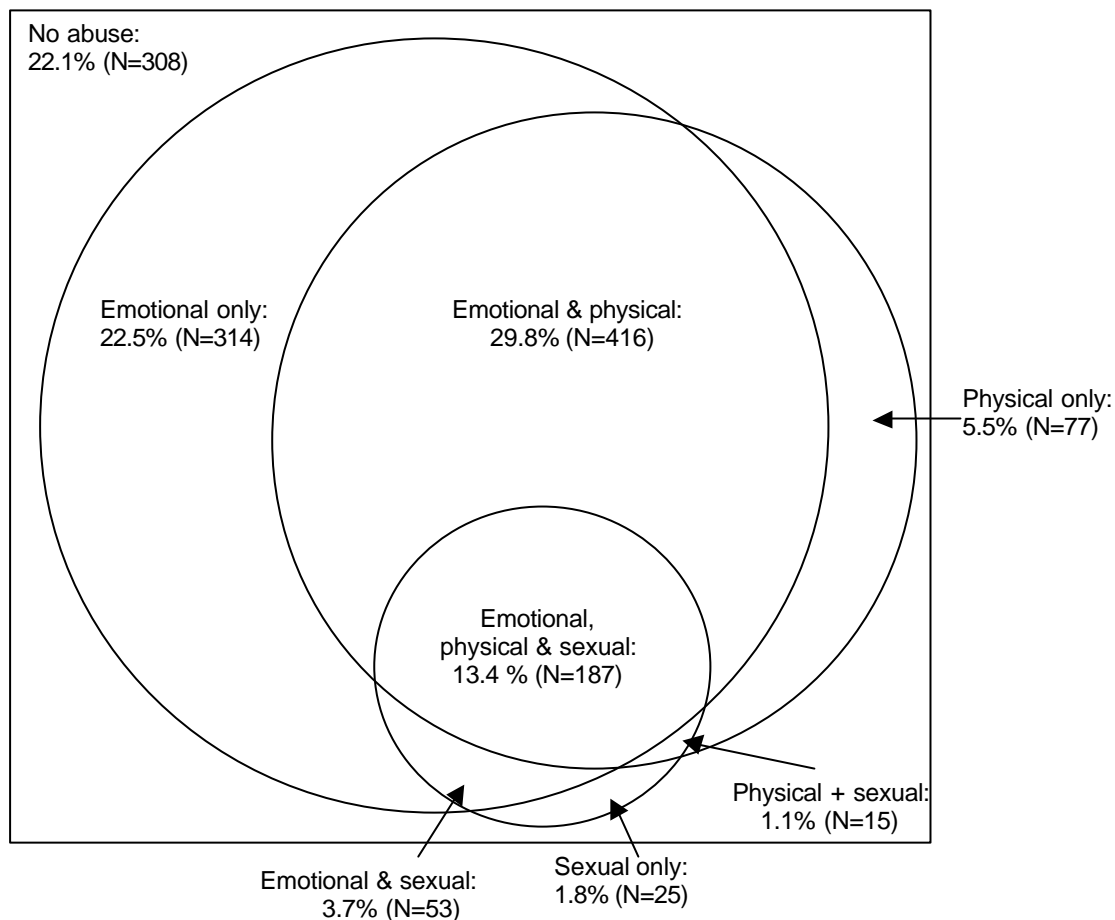


Figure 1: Overlaps between various manifestations of male partner violence among women attending antenatal clinics in Soweto. Financial abuse has been included within emotional abuse for purposes of illustration.

Prior population based studies within South Africa nationally and within several provinces have found lifetime estimates of physical violence from intimate partners ranging from 12.5% to 28.4% (Department of Health 1999; Jewkes, Penn-Kekana et al. 2000). We hypothesize that the higher prevalence found in this study may reflect a higher disclosure facilitated by an interview environment away from the woman's home and more detailed instrument than previously used. It is also possible that women seeking antenatal care are more likely to have a history of violence as violence has been associated with having more pregnancies and particularly unplanned pregnancies. Nevertheless, this is one of the highest prevalence figures ever reported for an obstetric population in any country.

Some readers will doubtless wish we had more explicitly tackled the question of violence during pregnancy; however, we avoided this issue quite deliberately as it was tangential to

our central question of violence and HIV. Previous studies of violence during pregnancy have not adequately considered the question of when pregnancy begins. It is doubtful that pregnancy “counts” as a risk factor for violence from the moment of conception. For violence to function as a social risk, at the very least the woman must know that she is pregnant, and probably her partner must know as well. It is also likely that pregnancies as “risk factors” for violence do not have discrete start dates: the woman suspecting she is pregnant, her partner and other people around her suspecting she is pregnant, her confirming that she is pregnant, and other people knowing that she is pregnant. These might occur in any order, and a woman may have limited knowledge of when her partner first suspected and/or knew about her pregnancy. Nonetheless, the finding that 21.8% of the overall sample experienced multiple assaults by a male partner in the last 12 months strongly indicates that violence during pregnancy is common in this population.

5.4 Prevalence of Other Sexual Violence

Table 7 describes the proportion of women who reported unwanted sexual contact or rape in childhood and adult sexual assault by non-partners (ASA-np), and the women’s report of the frequency with which they experienced various forms of assault. A total of 7.8% of participants reported sexual assault prior to age 15, with 5% reporting rape in childhood and 8% reporting adult sexual assault by a non-partner. These figures are comparable to or in excess of estimates from population based surveys. 1.6% of women in the SADHS reported rape before the age of 15 years (Department of Health 1999), while population based estimates of lifetime rape plus attempted rape range from 6.2% to 11.9% by province (Jewkes, Penn-Kekana et al. 1999). Forced sex in adulthood and in childhood was most likely to be perpetrated by boyfriends or male partners. Consistent with expectations, women who reported being physically forced to have sex by male partners were more likely than women with other perpetrators to report being forced on many separate occasions (41.4% versus 23.3% for male family members, 22.4% for men from neighborhood, 20.0% for a male friend of the family and 13.6% for strangers). Overall, 12.3% (N=171) of women reported that their first coitus involved force or rape.

Table 7: Prevalence of various forms of male sexual violence among women attending antenatal clinics in Soweto. Reported frequencies are given as percentage of women responding "yes" in each category. Total sample size= 1,395.

	Number Responding	N	Once	Few	Many				
Before 15, man ever touch you sexually/force you to touch him sexually when you did not want to?	1391	70	5.0	41	2.9%	19	1.4%	9	0.6%
Before 15, anyone ever persuade or force you to have sex when you did not want to?	1388	69	5.0	46	3.3%	17	1.2%	6	0.4%
Since 15, has someone apart from a boyfriend or husband tried to make you have sex when you did not want to, but did not succeed in doing this?	1391	62	4.5	46	3.3%	9	0.6%	7	0.5%
Since 15, has anyone apart from a boyfriend or husband ever made you have sex when you did not want to?	1392	54	3.9	41	2.9%	9	0.6%	3	0.2%
Made to have sex with two or more men at same time?	1388	14	1.0	13	0.9%	1	0.1%	0	0.0%
Forced at first intercourse (1)		85	6.2						
Raped at first intercourse (2)		86	6.2						
Any sexual assault before age 15 (3)	1388	349	25.1	69	5.0%	26	1.9%	10	0.7%
Any forced sex at any age (4)	1395	341	24.4	206	14.8%	86	6.2%	98	7.0%
Perpetrators (5):									
Male Partner	341 total	222	65.1			106	39	36.8	
Man or boy from neighborhood	cases	58	17.0			total	36	34.0	
Stranger		44	12.9			cases	21	19.8	
Father or male family member		32	8.8				29	27.4	
Male friend of family		20	5.9				17	16.0	
Other man		6	1.8				2	1.9	

(1) Women who selected 'I was forced' from a list of possible descriptors of first sex

(2) Women who selected 'I was raped' or who reported completed rape prior to reported age at first sex.

(3) Includes unwanted sexual touching and unwanted sex before 15, as well as first intercourse before 15 described as tricked, forced or raped

(4) Includes forced sex as above, forced sex by male partners (see Table 2) and first sex described as forced or raped

(5) Numbers sum to over 100% as some women has multiple types of perpetrator.

5.5 Age at onset of violence and revictimisation

The reported age at first occurrence of intimate partner violence ranged from 12 to 39 years and the reported age of first occurrence of sexual assault by a non-partner in adulthood was 15 (by definition) to 30 years. Overall, 82.8% of women who experienced sexual assault by a non-partner in adulthood the first occurrence occurred before they were 20. In contrast the age at which women first experienced intimate partner violence ranged from late teens to late 30s. The time from first intercourse to first intimate partner violence was a median of 5 years with the range from -4 to +27 years.

Women who had experienced abuse in childhood or forced first intercourse were significantly more likely to report intimate partner violence as adults, and when they did, age at onset was generally younger than for non-revictimized women. Amongst those experiencing no early violence, childhood sexual assault and forced first intercourse 52.0% v. 74.8% v. 75.3% respectively reported intimate partner violence and 5.3% v. 15.6% v. 9.3% respectively reported sexual assault by a non-partner in adulthood.

5.6 Prevalence of High Risk Behaviour

We turn next to a consideration of the links between violence and high risk behaviours. Prevalence of various indicators of high risk behaviour are given in table 8. Of particular note is that 38.2% of participants reported ever holding concurrent partnerships (having a roll-on) and 21.2% reported concurrent partnerships in the past 12 months.

Table 8: Prevalence of Substance Use and Risky Sexual Behaviour

Substance Use	N	%
Has drunk alcohol	472	33.9
Has smoked dagga	13	0.9
Negative consequences of use	78	5.5
Sexual Behaviour		
>3 male partners, past year	226	16.2
>10 male partners, lifetime	179	12.8
Roll-on partner, past year	295	21.2
Roll-on partner, lifetime	533	38.2
Once-off partner, past year	174	12.5
Once-off partner, lifetime	385	27.6
Never used condom	593	42.5
Ever engaged in transactional sex	294	21.1

5.7 Basic Connections Between Intimate Partner Violence and Risk Behaviour

Table 9 provides odds ratios (ORs) from multiple logistic regression models for the association between intimate partner violence and each of five risk behaviours; all models are adjusted for significant interviewer effects. To explore the presence of a possible 'dose-response' relationship between violence and risk, we modelled the number of different types of abuse reported against a baseline category of no IPV (counting financial, emotional, physical and sexual). We then summarized partner violence as "broad" experience of IPV (two or more types of abuse or mid to high frequency physical or sexual abuse) versus "limited to no" experience of IPV (psychological abuse only, or low frequency physical or sexual abuse only) to address the observation that both frequency of abuse and number of types were associated with risk behaviours and HIV infection. The models were then repeated for sexual abuse and SRPS score.

Table 9: Odds ratios for associations between forms of gender-based violence and various forms of risky behaviour (n=1395)

	= 5 Male Partners	Non-primary male partner	Transactional Sex	Never Used Condom	Drink/drug problem
Intimate Partner Violence					
No abuse	ref	ref	ref	ref	ref
One type	1.23 (0.88, 1.71)	1.30 (0.94, 1.80)	1.50 (0.93, 2.42)	1.17 (0.85, 1.61)	1.79 (0.46, 6.88)
Two types	2.11 (1.53, 2.91)	2.20 (1.60, 3.03)	2.73 (1.75, 4.27)	0.93 (0.68, 1.28)	7.85 (2.36, 26.0)
All Three	2.92 (1.96, 4.35)	2.88 (1.93, 4.30)	3.38 (2.04, 5.60)	1.18 (0.80, 1.75)	11.0 (3.19, 37.9)
Broad IPV vs Limited or None	1.85 (1.47, 2.33)	1.96 (1.56, 2.47)	2.37 (1.75, 3.20)	0.91 (0.72, 1.15)	4.85 (2.44, 9.66)
Child sexual assault	2.41 (1.60, 3.65)	2.17 (1.42, 3.32)	1.14 (0.71, 1.83)	0.61 (0.40, 0.94)	2.56 (1.37, 4.82)
Forced first intercourse	1.77 (1.15, 2.71)	2.21 (1.41, 3.48)	1.78 (1.11, 2.85)	0.81 (0.52, 1.26)	0.47 (0.14, 1.53)
Adult sexual assault by non-partner	2.54 (1.67, 3.87)	2.35 (1.52, 3.62)	1.53 (0.98, 2.38)	0.62 (0.40, 0.96)	2.00 (1.04, 3.83)
SRPS Low	ref	ref	ref	ref ^{vi}	ref
Mid-range	1.37 (1.00, 1.86)	1.61 (1.18, 2.20)	1.26 (0.87, 1.83)	1.05 (0.80, 1.37)	1.08 (0.56, 2.06)
High	1.30 (0.97, 1.73)	1.58 (1.18, 2.11)	1.65 (1.17, 2.35)	2.02 (1.56, 2.63)	1.70 (0.95, 3.02)

^{vi} Comparison of SRPS versus condom use was performed using the nine question version of the SRPS which excludes three items related to decision making regarding condom use.

Intimate partner violence, child sexual assault, forced first intercourse and adult sexual assault by non-partners were all associated with increased risk behaviours, with the notable exception of never using a condom. Survivors of child and adult sexual assault were, in fact, more likely to have used a condom at least once. Mid or high SRPS scores were also associated with increased odds of reporting all most behaviours, including never having used a condom, but not drinking/drug problems.

5.8 The Case of Transactional Sex

As mentioned above, transactional sex is an evolving concept, and one which has yet to be adequately explored in the epidemiological literature on HIV risk. To the best of our knowledge, this study is the first which has attempted to measure the prevalence of exchange of sex for cash and other material goods in a general clinical sample. Table 8 shows that 21.1% of women reported having ever had sex for material gain. Our main interest was the possible relationship between gender-based violence and HIV infection. To understand this we had to understand the relationship between gender based violence and likely HIV risk factors. Sex work is a well documented risk factor. Although the concept of transactional sex used in this study included what is commonly thought of as sex work, much of it was of a very different nature. Exploring the relationship between transactional sex and gender-based violence was important. As detailed above, we built three multiple logistic regression models, one for factors associated with having transactional sex, one for factors associated with having casual partners and one exploring factors associated with having transactional sex amongst women with casual partners. These are shown in Table 10.

Table 10: Multiple logistic regression models of the demographic and social characteristics associated with transactional sex

Variable	Model 1 (N=1286): Who has Transactional Sex?			Model 2 A (N=1281): Who has Casual Partners?			Model 2 B (N=627): Among women with casual partners, who has transactional sex?		
	OR	95% Wald CI		OR	95% Wald CI		OR	95% Wald CI	
Urban residence	1.85	1.12	3.05	1.65	1.10	2.47			
Living with male partner				0.74	0.58	0.95			
Any post-secondary education				0.64	0.39	1.03			
Currently studying	0.40	0.22	0.73	0.89	0.59	1.36	0.40	0.21	0.75
Ever worked				1.37	1.06	1.77			
Hunger in household	1.38	0.97	1.95	1.39	1.03	1.88			
Problem alcohol/drug use	3.30	1.93	5.64	2.83	1.59	5.04	2.96	1.50	5.87
Alcohol use ever	1.34	0.96	1.88	2.20	1.66	2.91	0.91	0.62	1.32
No substance use	ref	--	--	ref	--	--	ref	--	--
<i>Male partner abuse:</i>									
Financial, emotional, physical & sexual	3.68	1.75	7.71	2.21	1.10	4.43	3.56	1.45	8.71
Any 3	2.34	1.37	4.00	1.93	1.26	2.96	1.66	0.88	3.13
Any 2	2.29	1.41	3.72	1.79	1.26	2.53	1.71	0.98	3.00
Any 1	1.45	0.87	2.44	1.24	0.87	1.77	1.35	0.74	2.47
No male partner abuse	ref	--	--	ref	--	--	ref	--	--
Forced first intercourse				1.95	1.32	2.88	0.54	0.33	0.88
First intercourse age 20+	0.24	0.12	0.49	0.65	0.44	0.97	0.22	0.10	0.46

After adjusting for socio-demographic characteristics, increasing number of types of intimate partner violence was consistently and significantly associated with increasing risk of reporting transactional sex within the overall study population, as well as among women who had non-primary partners. Problematic substance was also associated with transactional sex in all models. First coitus at 21 or older was consistently associated with decreased odds of reporting non-primary partners and transactional sex. Child sexual assault, by contrast, was associated with increased odds of reporting having a non-

primary partners, but with decreased odds transaction among those with non-primary partners. Adult sexual assault by a non-partner and forced first intercourse were associated with increased odds of having a non-primary partner, but not with transactional sex.

Taking these three models side by side is helpful in understanding the total dynamics of who has transactional sex. Some variables, such as violence and substance use, are associated with both having casual partners and having transactional encounters with those partners. Other variables, such as urban residence and hunger in the household, *may* be associated with transactional sex in Model 1 only because of their association with having casual partnerships.

5.9 Basic Connections Between Relationship Power, Violence and HIV Infection

We have shown that different forms of gender-based violence are associated with increased risk behaviour and explored in-depth the associations between violence, transactional sex, and HIV risk. We turn now to a broad consideration of the connections between various types of violence and risk of HIV infection. Table 11 presents crude (unadjusted) odds ratios for prevalent HIV infection associated with various types of intimate partner violence. We first consider individually the different types of intimate partner violence assessed in this study: psychological (financial and emotional), physical and sexual abuse, as well as patterns of overlap between them (see figure 1). Then, we consider frequency of physical and sexual partner violence, and finally present the relationship with HIV of our composite measure of frequency and breadth of IPV. Finally we consider the association between control in the relationship (as measured by the sexual relationship power scale) and HIV infection.

No isolated type of intimate partner violence (psychological, physical, or sexual) was associated with increased odds of HIV. Co-occurrence of two or more types of IPV was associated with increased odds of HIV infection, except in the case of sexual + psychological abuse. Only a small proportion of women reporting sexual violence did not also report physical violence (27.3%, N=75) and these women were less likely to report high frequency sexual violence (15.2% vs 84.8%; $p=0.001$). Reporting more types of

intimate partner violence was generally associated with increased frequency. Increasing frequency of physical and/or sexual violence was associated with increased odds of HIV infection whether or not psychological abuse was also reported; however, within the psychological abuse only category, increasing frequency of abuse had no effect on HIV risk. When we summarized intimate partner violence by number of types reported, a nearly identical effect was seen for two or three types versus none or one. Our summary measure of "broad" versus "limited or no" intimate partner violence thus yielded a point estimate for HIV risk (OR=1.75, 95% CI: 1.38, 2.20) similar to those from isolated consideration of type, frequency or breadth. Women whose current or most recent relationships scored high on the SRPS, indicating substantial male dominance and control in the relationship were also more likely to be HIV infected (OR=1.65, 95% CI: 1.25, 2.18).

Table 11: Crude odds ratios for testing HIV seropositive by experience of intimate partner violence

	N	% ^{vii}	HIV+	% ^{viii}	OR	95% CI
Intimate Partner Violence						
Intimate Partner Violence (IPV) by type:						
No IPV	291	21.4	79	27.2	ref	--
Psychological only	298	22.0	90	30.2	1.16	0.81, 1.66
Physical only	76	5.6	21	27.6	1.03	0.58, 1.80
Sexual only	24	1.8	6	25.0	0.90	0.34, 2.34
Physical + sexual	15	1.1	9	60.0	4.02	1.39, 11.7
Physical + psychological	415	30.7	165	39.8	1.77	1.28, 2.45
Sexual + psychological	51	3.8	14	27.5	1.02	0.52, 1.98
Physical + sexual + psychological	184	13.6	71	38.6	1.69	1.14, 2.50
Frequency of physical or sexual IPV:						
No physical or sexual	601	44.0	172	28.6	ref	--
Low frequency	175	12.8	54	30.9	1.11	0.77, 1.61
Mid frequency	248	18.2	91	36.7	1.45	1.06, 1.98
High frequency	342	25.0	141	41.2	1.75	1.32, 2.31
IPV by breadth (cumulative types):						
None	291	21.4	79	27.15	ref	--
One of: psychological, physical, sexual	402	29.6	117	29.1	1.10	0.79, 1.54
Two of: psychological, physical, sexual	481	35.4	188	39.1	1.72	1.25, 2.36
All three types of IPV	184	13.6	71	38.6	1.69	1.14, 2.50

^{vii} % of women reporting each category of abuse out of all participants

^{viii} % of women testing HIV positive out of the number of women reporting abuse in each category

Table 11, con't	N	% ^{ix}	HIV+	% ^x	OR	95% CI
Summary IPV Measure:						
Limited or no IPV	596	43.9	159	26.7	ref	--
Broad IPV	762	56.1	296	38.9	1.75	1.38, 2.20
Sexual Relationship Power Scale (N=1332)						
Low power difference	458	34.4	132	28.8	ref	--
Mid-range power difference	447	33.6	145	32.4	1.19	0.89, 1.57
High power difference	427	32.1	171	40.1	1.65	1.25, 2.18

Neither child sexual assault, forced first intercourse, nor adult sexual assault by non-partners was associated with increased odds of HIV when they occurred in absence of partner violence (table 12). Women who had experienced both child sexual assault and partner violence or forced first intercourse and partner violence had moderately increased HIV risk, but this effect was only significant for forced first intercourse.

Table 12: Crude odds ratios for testing HIV seropositive by experience of various forms of sexual violence based on 1337 women with non-missing data for all categories except where indicated.

	N	%	HIV+	%	OR	95% CI
<i>Ever/Never Comparisons</i>						
Child sexual assault (N=1361)	109	8.0	38	34.7	1.07	0.71, 1.61
Forced first intercourse (N=1353)	97	7.2	37	38.1	1.25	0.81, 1.91
Adult sexual assault by non-partner (N=1353)	108	7.9	35	32.4	0.94	0.62, 1.43
<i>Multi-level Comparisons</i>						
<i>Child Sexual Assault (CSA)</i>						
Limited IPV or no gender-based violence ^{xi}	522	39.0	137	21.7	Ref	--
CSA alone	27	2.0	8	29.6	1.18	0.51, 2.77
CSA + broad IPV	82	6.1	30	36.6	1.62	0.99, 2.65
<i>Forced First Intercourse (FFI)</i>						
Limited IPV or no gender-based violence	522	39.0	137	21.7	Ref	--
FFI alone	22	1.6	7	31.8	1.31	0.52, 3.29
FFI + broad IPV	74	5.5	29	39.2	1.81	1.09, 3.00
<i>Adult Sexual Assault by non-partner</i>						
Limited IPV or no gender-based violence	522	39.0	137	21.7	Ref	--
ASA-np alone	26	1.9	6	23.1	0.84	0.33, 2.14
ASA-np + broad IPV	80	6.0	28	35.0	1.51	0.92, 2.49

^{ix} % of women reporting each category of abuse out of all participants

^x % of women testing HIV positive out of the number of women reporting abuse in each category

^{xi} Women who reported no IPV, CSA, FFI, ASA-np or limited IPV only

5.10 Relationship between gender-based violence and HIV after adjusting for risk behaviour

Table 13 shows the multiple logistic regression models for the association between women's risk behaviour, relationship control, intimate partner violence and HIV serostatus. After adjustment for age, current relationship status, and risk behaviour, the association between broad intimate partner violence and HIV seropositivity remained significant (OR=1.61; 95% CI: 1.24, 2.07). When SRPS score was added to the model, experience of broad partner violence (OR=1.54; 95% CI: 1.19, 1.99) and high versus low power differential in relationship (OR=1.56; 95% CI: 1.15, 2.11) were both associated with HIV seropositivity. The models demonstrated mild confounding between transactional sex and intimate partner violence, but the effect of risk behaviour, partner violence and relationship control were otherwise statistically independent.

Table 13: Multiple variable logistic regression models, showing association between risk behaviour, intimate partner violence, SRPS score and HIV serostatus^{xii}.

	Base Model ^{xiii} :		Model 1 ^{xiv} :		Model 2:	
	OR	95% CI	OR	95% CI	OR	95% CI
<i>Lifetime partners & transactional sex</i>						
<5 partners, no transactional sex	ref	--	ref	--	ref	--
5+ partners, no transactional sex	1.59	1.19, 2.12	1.53	1.14, 2.03	1.52	1.13, 2.03
<5 partners, ever transactional sex	2.14	1.16, 3.94	1.91	1.03, 3.54	1.93	1.04, 3.57
5+ partners, ever transactional sex	1.83	1.32, 2.55	1.60	1.14, 2.23	1.57	1.12, 2.21
<i>Drink/drug problem</i>	2.17	1.31, 3.59	1.97	1.19, 3.27	1.96	1.18, 3.27
<i>Intimate Partner Violence</i>						
Broad IPV vs Limited or None			1.61	1.24, 2.07	1.54	1.19, 1.99
<i>Sexual Relationship Power Scale</i>						
Low					ref	--
Medium					1.21	0.90, 1.63
High					1.56	1.15, 2.11

^{xii} Models are adjusted for respondents' age, current relationship status and include an interaction term for age by relationship status. The following variables were also tested as possible confounders of the relationship between IPV and HIV and found to be non-significant: language spoken at home, education, professional employment, residence in substandard housing, hunger in household, duration of current relationship, and current partner's education.

^{xiii} To facilitate comparison between models the base model contains only cases where SRPS score was not missing (N=1324)

^{xiv} To facilitate comparison between models model 1 contains only cases where SRPS score was not missing (N=1324)

This shows that experience of violence and controlling behaviour from male partners is associated with increased risk of HIV infection for women. Intimate partner violence was associated with increased likelihood of HIV risk behaviour, including having multiple partners, having non-primary partners, engaging in transactional sex and having problems with substance use. However, while all of these behaviours were associated with increase HIV infection among our study participants, they did not account for the relationship between partner violence and HIV. These results very strongly suggest that while experience of violence may lead to risk behaviour (or vice versa), and risk behaviour to HIV infection, there is also a significant and important risk that a woman will be directly infected with HIV by an abusive partner. The fact that controlling behaviour by a woman's current or most recent partner is also associated with HIV infection after controlling for lifetime experience of partner violence further supports the hypothesis that women involved with abusive or controlling men are at risk of acquiring HIV infection directly from their partners.

While women currently in relationships with high levels of male control were more likely to report partner violence, the lack of confounding or statistical interaction between partner violence and SRPS score in our multivariate analysis of HIV risk suggests that these measures tap into different, and equally important, underlying constructs. The fact that the SRPS is associated with never using condoms, while partner violence has been associated with increased attempts at condom use, suggests that the SRPS captures an important additional dimension of gender-inequality which is not covered by abuse questions focused on discrete behaviours and that it may serve as a marker for risk of HIV transmission through unprotected sex between a woman and her current partner.

Nonetheless, unprotected sex with a partner cannot result in HIV infection unless that partner is HIV positive. We therefore propose that perpetration of intimate partner violence, as captured in this study, serves at least partially as a proxy indicator of HIV risk in men. The scant evidence to date on sexual risk among abusive men supports this hypothesis. Research among working men in Cape Town (Abrahams 2002), married men in India (Martin, Kilgallen et al. 1999) and men in methadone maintenance in New York (El-Bassel, Fontdevila et al. 2001) found that men who reported perpetrating partner violence were more likely to have concurrent sexual partnerships.

Overall, this study suggests that violent and controlling men place their female partners at increased risk of HIV infection. We hypothesize that abusive men are both more likely to be HIV positive and more likely to impose risky sexual practices on female intimate partners. These findings affirm the urgent need for research on connections between social constructions of masculinity, intimate partner violence, male dominance in relationships, and male HIV risk behaviours, as well as the need to develop effective interventions for men.

5.11 Dissemination of Results

The findings of this study have been shared with peers working in the field in South Africa and internationally at a variety of meetings and conferences. In total 11 presentations have been made at conferences and meetings from this study. These include the presentations at the First and Second South African Gender-based Violence and Health Initiative Conferences, at the XIVth International AIDS Conference in Barcelona in 2002, at the Reproductive Priorities Conference in 2002 and a key note address at the South African Congress of Obstetrics & Gynaecology in 2003. Many of these conference presentations received considerable media coverage in South Africa with articles appearing in newspapers and contributions to radio programs. In addition to this three articles have been written for peer reviewed journals and the research has been used for the PhD thesis of Kristin Dunkle at the University of Michigan.

6.0 Screening for intimate partner violence: Developing a culturally sensitive tool for identifying abused women

An ideal screening tool would be able to detect with a high degree of accuracy those cases which have a health problem, and differentiate them from those which do not. In the real world very few screening tools are ideal. Most tools are plagued by the problems of false negatives – i.e. the classification of some true ‘cases’ of the problem as unaffected – and false positive i.e. the classification of some people who are truly unaffected as positive. Since screening invariably leads to further investigation of cases to differentiate ‘true’ from ‘false’ cases, having many false negatives is the most serious problem with a screening

instrument as it leads to many true cases being denied the chance for further investigation and case identification. Having many false positives is costly in resources and can be stressful for the individuals.

In an area such as screening for domestic violence, it is most important to minimise the number of false negatives, and this is how the screening tool which was suggested from this study performs. This study used six questions to identify women as experiencing physical intimate partner violence and three to measure sexual violence. The very high levels of violence reported suggest that these were culturally sensitive questions. They have been used in several different settings (including amongst youth in Winterveldt north of Pretoria and in the Eastern Cape) and have been found to be acceptable and appropriate. This study showed that it was not necessary to ask all questions to identify most cases of abuse. We therefore recommend the use of four screening questions in health services to identify women who have experienced intimate partner violence:

Screening questions:

- 1. Has your current partner or any other partner ever threatened to hurt you?**
- 2. Has he or any other partner ever pushed you or shoved you?**
- 3. Has he or any other partner ever slapped you or thrown something at you which could hurt you?**
- 4. Has he or any other partner ever physically forced you to have sex when you did not want to?**

Table 14 shows the sensitivity (probability of avoiding a false negative) and specificity (probability of avoiding a false positive) of these screening questions in predicting recent physical and sexual abuse or a woman having ever experienced physical or sexual abuse. These are well within the range of commonly used screening tools such as the Pap smear. The fourth column of the table shows the predictive value of a negative response. In all cases this is very high, implying that as long as the questions are asked in a confidential setting by a non-judgemental and empathic care provider, women who respond “no” to all screening items are unlikely to have experienced past or recent physical or sexual intimate partner violence. Those who respond “yes” can then explore the impact of violence in

discussion with the person screening. The high predictive value which was achieved in this research setting was with the questions used by very highly trained interviewers who had been well grounded in gender issues and were well supported. Such ideal conditions can rarely be replicated in clinical settings and so further evaluation of their performance in a real world context would be necessary.

Table 14: Sensitivity and specificity of screening questions for intimate partner violence

Outcome	Sensitivity	Specificity	Predictive Value Negative
Physical abuse, past 12 months	98.0	53.9	98.8
Physical abuse, ever	97.3	78.0	96.6
Sexual abuse, past 12 months	91.9	44.0	98.1
Sexual abuse, ever	92.9	48.9	96.5
Physical or sexual abuse, past 12 months	96.0	56.3	97.0
Physical or sexual abuse, ever	95.3	85.2	93.6

7.0 An appropriate health sector response to gender-based violence

Background to Antenatal Care & HIV Testing

The HIV testing for this study was undertaken by lay counsellors employed in the antenatal clinics of Soweto. After women had seen a midwife or doctor they were referred to a counsellor who would undertake pre-test counselling. Women could choose to receive their test results on the same day at the end of their clinic visit, or collect them on a subsequent visit. Most women elect to receive their results on the same day, and close their clinic visit with receipt of test results and post-test counselling.

The process of pre- and post- test VCT counselling helps people understand HIV screening and interpret their results. It also provides personalised education about HIV risk practices and how they can be modified. For people who test positive, VCT provides space to explore the meaning of the test result in that person's life, discuss disclosure and locating support, and begin preparations for future health and social care. If counsellors are not sensitive to gender issues and equipped with an understanding of the role of gender violence in HIV risk, they will not be able to effectively discuss experiences of violence with clients. Without frank and supportive discussion, women may continue to be, or feel, powerless to adopt safer sexual practices. Furthermore, it is potentially dangerous to encourage an abused woman to disclose her HIV status without assessing the risk of future violence she might face from such disclosure. The risks of disclosure-related violence in South Africa are not known, although some international research has suggested that this may be an important problem. A recent US study found that 20.5% of HIV positive women reported physical harm since diagnosis (compared to 11.5% of gay men) (Zierler, Cunningham et al. 2000). In Tanzania, however, rates of physical violence were much lower with 4.3% of HIV positive women experienced physical violence after disclosure (0.75% of HIV negative women) and a further 12.7% of HIV positive women experienced other adverse disclosure related outcomes, loss of economic support and eviction (Maman, Mwambo et al unpublished).

Feedback to service providers on the study findings

After the research was completed the preliminary findings were presented to the staff of the four Soweto antenatal clinics in four different meetings attended by over 60 staff. The VCT counsellors were dismayed by the information about the proportion of their clients experiencing intimate partner violence, but not terribly surprised. They mentioned that the question of intimate partner violence was commonly raised by women themselves in counselling sessions. Although there was variation between the counsellors most reported that the subject was raised at least once a week. Our research findings indicate that this is a small proportion of the number of number of women seen each week who experience such violence. The counsellors could all understand the importance of the issue but they were concerned about the idea of routine screening because of its impact on their time and because of uncertainty about where to refer women. They all expressed the need for

training on gender-based violence before they would be willing to consider any form of routine screening.

Experiences of referral

In conducting this study, we contracted with a local non-governmental organization, People Opposing Women Abuse (POWA), to provide support for study participants with concerns about violence. POWA had an office located at Chris Hani-Baragwanath hospital and this office was readily accessible by public transport from all other study sites, and on foot from two of the four sites. Walk-in counseling services were available every week day, and a telephonic service operated 24 hours a day, 7 days a week. We provided referral information for POWA to over 1,400 women with whom we had contact with, over 20% of whom we knew to have experienced recent and repeated violence. While POWA's record keeping did not allow us to draw any certain conclusions, they did routinely track sources of client referrals. Subsequent to the study informed us that no client clearly related to our project had sought services in the period during or shortly after fieldwork. There was no increase overall in their case load over the study months. In essence there was no evidence that any of the several hundred women experiencing on-going violence sought their help. This strongly suggests that referrals to NGO services are not necessarily what abused women in this population are looking for.

What do abused women want from services?

One of the key pieces of information which is missing from the screening debates is exactly how women feel about this issue and what abused women want from health services. Research which is available indicates that women do not mind being asked by health workers about whether they have experienced abuse (Jacobs, Steenkamp & Marais 1998). There has only been one study in South Africa which explored what women actually wanted from the health sector. It was a very small piece of qualitative research with interviews conducted with 20 women attending clinics in Limpopo province who were screened for the first time. Preliminary findings suggest that what women really wanted was for service providers to listen to them, respond empathically and maintain absolute confidentiality (Webster & Ramalepe 2003). They did not particularly want referral or any

action to follow. These findings are similar to those discussed elsewhere (Garcia Moreno 2002) and raise the possibility that what abused women want from the health sector after the initial process of screening or their initial identification is much less than health care workers fear they want and is well within the capacity of an understanding and trained health worker to provide even in resource poor settings.

So do abused women just want an ear and sympathy?

We should not assume from our findings or from the Limpopo Province province study that health workers can fulfil their obligations by merely offering once-off sympathy. Study of help seeking practices of abused women shows that the process of taking action about abuse is a very long one. Research in South Africa and internationally has found that women identified in a research setting have often never discussed violence with anyone else (Ellsberg & Heise 2002). It is inevitable that many women disclosing abuse in services will be in the same position. The process of taking action is thus very likely started by that initial contact, a chance to talk, a message that women do not need to tolerate such behaviours, and should be expected to evolve along a slow, spiraling and convoluted pathway from there.

Experience with NGOs that help abused women shows that many clients when the first make contact want to test the water, talk about problems and get reassurance about themselves and only later try forms of interventions such as leaving. Even then they often go back to their partner multiple times, and perhaps try getting a protection order or engaging with other legal and social interventions. With hindsight it seems logical that women identified in the health sector who have never discussed intimate partner violence before would be unlikely to want to visit an NGO. Rather they would need time to process their very first 'intervention' – which has been to disclose to a researcher or health worker. They would then need to think about what would feel appropriate for them in terms of where to go from there which could include accessing an NGO but might involve talking to others, for example friends or family.

What about the value of identifying abuse women in a VCT setting?

Women who test HIV positive deserve special attention. Women may experience gender-based violence, both physical and emotional abuse, as a response to disclosure of HIV status to their partner. Planning for life with HIV may also require frank discussion of gender-based violence. For example, a woman may find it hard to plan for her children without a realistic assessment of their father. It is thus important that counselling provided with an HIV initial diagnosis is sensitive to a woman's history of violence, and helps her assess the full implications of both violence and HIV for her future. Inclusion of gender violence screening and appropriate interventions in VCT settings may also have the potential to improve HIV prognosis through reducing stress.

We suggest that discussion of gender-based violence as part of post-test counselling for women with HIV or counselling on a subsequent occasion is both feasible in the health sector and – given the magnitude of the problem – essential, but it will require a determination on the part of service management that violence counselling is important. Importantly, it will also require a commitment to organising services in such a way that it is possible for staff to carry out these added duties. This means that health services must be prepared to reorganise administrative processes and transform institutional cultures so that there is the time for work related to gender-based violence and this work is valued.

Staff need special training on gender issues and sensitisation to gender-based violence before such counselling can be done safely and effectively. Working with survivors of gender-based violence can be quite a challenge for biomedically-trained professional staff as it requires them to learn to value activities which do not result in problem solving or a 'fix'. The focus of training needs to be on enabling staff to empathise and not to stigmatise abused women and to understand that they are not in a position to 'fix' the problem (or require the woman to do this).

Is screening for intimate partner violence in antenatal and VCT services effective?

We have demonstrated that we have a reasonably good way of detecting women who are experiencing abuse in health services. In a traditional public health approach to screening,

what is then be required would be an effective intervention. We have shown that NGOs do not necessarily hold the key to this. We have suggested that what women want may be more a chance to talk and sympathy. However before we can really understand the meaning of the idea of an effective intervention we must determine what we mean when we say "effective": Making women feel better? Making women's lives safer? Ending the violence in their relationship? Getting them to leave the relationship? If the findings were Limpopo Province are generalisable then we may feel confident that given sufficient resources for training health sector staff on gender-based violence, deployment in screening and listening to experiences we would be able to have an intervention which was effective in making women feel better. A key question would none the less remain: does this make women's lives safer or contribute towards ending violence?

Research so far has been limited in this regard and has not shown that screening women in the health sector enhances their safety, reduces their exposure to violence in the long term or enhances their health (Garcia Moreno 2002). This is a critical question to answer before the introduction of a screening programme in antenatal clinics as until then identifying abused women is of uncertain value and would come at a considerable expense to the health sector. We therefore suggest that screening should be established in VCT services and this process evaluated, in terms of process and the benefit to women, before attempting wider implementation of violence screening in the health sector.

We conclude that future research on violence against women needs to think more broadly and creatively about the kinds of support offered both to research participants or women receiving routine clinical services and to staff who are being asked to implement screening and intervention programs. It will be important implement on-going evaluation of any supportive interventions provided in the context either of research or of clinical care.

8.0 Final notes on prevention of gender-based violence as part of prevention of HIV

This study has identified clear connections between childhood experiences of sexual abuse, intimate partner violence in adulthood, inequality in relationships and HIV risk. Key points for intervention are with children who have been sexually abused to reduce the risk of revictimisation in adult relationships and with women who experience intimate partner violence to reduce the risk of adopting behaviour which increases the risk of subsequent of HIV such as transactional sexual relationships. The development of effective interventions with these groups and operational research on their delivery need to be priorities on international research agendas.

Far more importantly, however, our research suggests that intimate partner violence and male controlling in relationships play a very important role in women's risk of HIV infection. We hypothesise that the problem we observe stems from prevalent ideas about masculinity and what constitutes 'real' and acceptable male behaviour: control of women, including control by violence, and sexual risk taking, including having many sexual partners and not using condoms. Such ideas have been described in ethnographic research by several authors (see contributions in Morrell 2001, Wood & Jewkes 2001). Our findings that intimate partner violence and male control in relationships increase women's risk of HIV infection raises key questions about current approaches to HIV prevention. It suggests that focusing considerable efforts on men and challenging prevailing ideas about masculinity are essential to effective prevention of HIV, and may explain why so many attempts to promote condom use without explicitly engaging with gender dynamics in relationships are found to be ineffective. It also highlights key weaknesses in approaches which attempt to address women's HIV risk solely through targeting women. It furthermore suggests that efforts to prevent HIV should not be seen as separate from and running in parallel with efforts to prevent intimate partner violence but that these two issues should be addressed together. Considerable further research is needed to understand how ideas about masculinity and the use of violence can become a locus of intervention and shaped in ways which reduce HIV risk. It is vitally important that we understand more about interventions such as *Stepping Stones* (Jewkes, Nduna & Jama

2002) which seek to address both violence and HIV risk and the lessons which can be learned from their evaluation.

Our research suggests that abusive men may be more likely to be infected with HIV (else they could not place their partners at higher risk). This suggests that interventions with men need to address a cluster of male behaviours and explore ideas around the constitution of manhood rather than focusing on isolated individual practices such as condom use. We do not suggest that condom use is unimportant. However, our findings suggest that male controlling behaviours reduce the likelihood of condom use by the couple. We therefore suggest that these controlling behaviours need to be addressed through programmes which explore ideas of masculinity and gender equity.

9.0 Conclusion

This study examined gender-based violence as a possible risk factor for HIV infection among women attending antenatal clinics in Soweto. Well over half of the 1,395 women interviewed reported physical or sexual assault from intimate partners at some point during their lives, and nearly one third had experienced such violence in the past 12 months. One of the key questions of the study was whether any association observed between violence and HIV serostatus might be attributable to connections between violence and risk behavior. In addressing this question, we regarded it as important to consider women's sexual behavior within the local cultural and socio-economic context, and so devised a measure for transactional sex with casual partners: over 21% of study participants reported exchange of sex for money or material gain with someone other than a primary partner. Transactional sex was more likely to be reported by women who also reported past experience of violence by male intimate partners, problematic substance use, living in substandard housing, urban residence, or ever working; increasing breadth of intimate partner violence was associated with increasing likelihood of reporting transactional sex. After controlling for lifetime number of male sex partners and the length of time a woman had been sexually active, transactional sex was associated with being HIV positive, while having sex with non-primary partners without transactional sex was not.

Broad lifetime experience of intimate partner violence and high male dominance in a woman's current or most recent relationship (as measured by the Sexual Relationship Power Scale) were both associated with significantly increased odds of HIV seropositivity, even after adjustment for risk behaviours shown to be associated with these types of violence. Women who reported child sexual assault, forced first intercourse or adult sexual assault by non-partners also reported higher levels of risk behavior than those who did not, but were not at increased risk of being HIV seropositive. Taken together, these results strongly suggest that increased risk behavior subsequent to experience of violence is not the key mechanism by which violence increases risk of HIV. We conclude that women in abusive or controlling relationships are likely to be directly infected by their male partners, and that child sexual assault and forced first intercourse increase HIV risk primarily through increasing the risk of partner violence.

Identifying women who experience violence, providing support and considering the implications of these experiences for their health is very important for the health service. The experiences of this study have enabled us to propose a culturally appropriate screening instrument which performs well in comparison to screening tools used for other conditions and should have high negative predictive value when properly administered in a confidential setting by a skilled and sensitive provider. The findings of this study indicate that the training of staff and use of violence screening in VCT services is very important. We recommend that screening be introduced into routine VCT in South Africa and that further research be undertaken to monitor its introduction and assess the benefits for women's lives.

Most importantly, our findings point to the need for intervention efforts in HIV prevention need to target male sexual risk taking, condom refusal, and violent behaviour, as well as working towards transformation of broader social structures which support female subordination and hinder women's socio-economic empowerment.

10.0 Key findings & messages

Summary of conclusions & messages

1. Gender-based violence highly prevalent amongst women attending Soweto antenatal clinics.
2. Intimate partner violence and gender-based power inequalities in relationships are associated with an increased risk of HIV infection after adjusting for social and demographic risk factors and for women's risk behaviours.
3. Gender-based power inequalities pose barriers to the adoption of safer sexual practices in relationships.
4. Intimate partner is associated with an increased risk of several risk factors for HIV infection including having multiple male sex partners, involvement in transactional sex, and problem drinking.
5. Intimate partner violence seems to be associated with an increased risk that the abusive male partner has HIV.
6. A simple set of four questions on experiences of physical violence can be used to screen for women's experience of violence with a low rate of false negatives.
7. The abused women in this study did not seem to make use of the information which could have enabled them to access services of an NGO, suggesting that non-availability of referral services might not be a barrier to raising issues of violence among women using health services.
8. There remains uncertainty around which interventions will increase women's safety in their relationships. This is an important subject for future research.
9. Discussing experiences of gender-based violence with women who are HIV positive in a post-test counselling or subsequent visit context should be a priority for services.
10. Health care staff require training on gender, screening for gender-based violence, listening to and supporting women if they are to identify women who have experienced intimate partner violence and provide an appropriate and helpful response.

11. Research needs to focus on development of interventions to prevent gender-based violence and providing interventions to ameliorate the impact of abuse on risk behaviours
12. Intervention efforts in HIV prevention need to target male sexual risk taking, condom refusal, and violent behaviour, as well as working towards transformation of broader social structures which support female subordination and hinder women's socio-economic empowerment.

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