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The prevalence and determinants of emotional, physical and sexual violence from a partner among HIV-positive individuals attending HIV care in greater Gugulethu area of Cape Town, South Africa.

A mini-dissertation submitted to the School of Public Health and Family Medicine, University of Cape Town.

In partial fulfillment of the requirements for the award of a Master of Public Health (specialization in Epidemiology)

By

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DEDICATION

DEDICATED TO MY PARENTS MR CHRISTOPHER NGLAZI AND RENEE
NGLAZI, MY SIBLINGS WENDY, MOONGA AND MY LATE BROTHER RYAN
(M.H.S.R.I.P.).

University of Cape Town

DECLARATION

I Mweete Debra Nglazi Student No. NGLMWE001 declare that the work that I have submitted is my own and where the work of others has been used (whether quoted verbatim, paraphrased or referred to) it has been attributed and acknowledged.

Signature:

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| Signed by candidate |
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Date: 17/11/2008

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SUMMARY

Problem statement

South Africa has high levels of both HIV/AIDS and intimate partner violence (IPV)^a among women. Research on the links between HIV/AIDS and IPV shows that women who experience IPV are nearly two times more likely to be HIV-positive compared to women who do not. However, there is limited research on IPV among HIV-positive women. While there is increasing evidence on HIV-positive status disclosure-related IPV, studies are unclear on whether IPV is higher among HIV-positive women. Very few studies have compared IPV, both before and after an HIV-positive diagnosis. Hence, it is unclear whether previously existing patterns of violence persist, perhaps with different triggers (HIV-related for example) in these intimate relationships or whether an HIV-positive diagnosis leads to the onset of IPV for the first time. There is also little information on the reasons for IPV among HIV-positive women; and scant information on the experience of IPV among heterosexual HIV-positive men.

Rationale and justification for research

There is need to gain better understanding of IPV among HIV-positive women and men. The information gained will help inform this aspect of health service delivery for the

^a The World Health Organization defines intimate partner violence (IPV) as "...any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship." (Heise and Garcia-Moreno, 2002). It includes physical violence (e.g. slapping, hitting, kicking and beating); sexual violence (e.g. forced intercourse and other forms of sexual coercion); psychological violence (e.g., intimidation, constant belittling, and humiliating); and various controlling behaviours (e.g. isolating a person from their family and friends, monitoring their movements, and restricting their access to information or assistance (Heise and Garcia-Moreno, 2002). Where abuse is used in this dissertation it is interchangeable with intimate partner violence or abuse.

growing numbers of people living with HIV/AIDS (PLWHA) nationally and in other countries.

Research question/Hypothesis

This study examines whether IPV is higher among HIV-positive women than among the general population of adult women who are uninfected with HIV or of unknown HIV status; and whether it is specifically related to matters pertaining to the individuals' HIV-positive status or whether this occurs for unrelated reasons. In addition, it seeks to identify potential risk factors for IPV among HIV-positive women and men attending HIV care in a community with high levels of HIV prevalence.

Aim and objectives

This main aim of the study is to determine the prevalence and examine the determinants of emotional, physical or sexual violence from an intimate partner among HIV-positive women and men attending HIV care in the greater Gugulethu area of Cape Town.

Methods

This study is a sub-study of a broader cross-sectional study that assessed the fertility intentions, contraceptive service needs and reproductive decision-making among a random sample of HIV-infected women and men attending public sector HIV care in this same community. As part of this broader study, a quantitative questionnaire was used to collect information on women and men's reported experiences of IPV (both before and after HIV diagnosis); and reasons for the violence, including whether it was HIV-related.

The data from this study was entered into a computer database programme and the variables probing intimate partner violence analysed. The data was cleaned and analysed using STATA Intercooled version 8 and Casecont.

Results

The following results reported are disaggregated by sex:

Women

Of the two-hundred and eighty-five HIV-positive women used in this study, 26% of them reported experiencing IPV (for 5% it occurred both before and after the diagnosis, for 3% it occurred only after the diagnosis and for 18% it occurred only before the diagnosis), while 74% of them did not report experiencing IPV.

The results showed that where there was a pre-existing pattern of violence before an HIV-positive diagnosis this was approximately 8 times more likely to continue after diagnosis (OR 7.87, 95% CI 2.74–22.59).

Reasons for IPV after HIV-diagnosis were analysed, and most women cited reasons that were related to other issues rather than HIV (68% vs 32%).

Bivariate associations between the variables and reasons for violence showed that women who knew they were HIV-positive for more than 12 months were statistically

significantly more likely to report experiencing IPV related to other issues compared to those who knew they were HIV-positive for 12 months or less. These analyses also showed women who had a pre-HIV history of IPV were statistically significantly more likely to report experiencing IPV related to other issues compared to those without a pre-HIV history of IPV.

In addition, to having a history of violence prior to diagnosis, a longer time having elapsed since HIV-diagnosis was also a statistically significant risk factor for experiencing violence after diagnosis among women. In particular, women who knew they were HIV-positive for more than 12 months before the interview were 5 times more likely to report experiencing IPV after an HIV diagnosis, compared to those who knew they were HIV-positive for 12 months or less before the interview (OR 5.30, 95% CI 1.34—20.99). Other risk factors examined included condom use and CD4 count. However, these were not statistically significant. In multivariate analysis confined only to those with main intimate partners, the directions of the associations and statistical significance remained the same.

Men

Of the hundred and seventy-four HIV-positive men in this study, only 4% reported experiencing IPV (an identical 2% reported experiencing this violence either only before or only after an HIV-positive diagnosis), while 96% of them did not report experiencing IPV.

Reasons for the violence were analysed, and identical proportions (50%) cited reasons for IPV related to issues related to HIV and those unrelated to HIV.

Discussion and Conclusion

The prevalence of IPV among HIV-positive women (26%) is similar to that among the general population of women in three South African provinces (25%) (Jewkes et al., 2002). Factors related to HIV may trigger IPV among HIV-positive women, but do not increase its overall prevalence. The fact that women with a pre-HIV history of IPV were 8 times more likely to report experiencing IPV after diagnosis compared to those with no history (OR 7.87, 95% CI 2.74—22.59), suggests that a previously existing pattern of IPV is likely to continue after diagnosis. Women who knew that they were HIV-positive for more than 12 months were 5 times more likely to report experiencing IPV after diagnosis compared to those with a more recent diagnosis (OR 5.30, 95% CI 1.34—20.99). Duration of time since diagnosis may act as a proxy for other factors.

Alternatively the wide confidence interval and the lower end being close to 1 may mean that this is a chance finding. However, women who were healthier, as measured by CD4 cell count, seemed more likely to report IPV after HIV diagnosis compared to those with the lowest CD4 count — even though the study is not definitive due to the wide CI, indicating that factors other than the strain of a person getting sicker is likely to trigger IPV. Women who have never practiced safe sex appeared more likely to report IPV after HIV diagnosis compared to those who have practiced safer sex — even though the study is not definitive due to the wide CI, suggesting that women in abusive relationships may be less likely to practice safer sex, although this is inconclusive. Therefore, the study

findings confirm reports from other studies that a longer time having elapsed since diagnosis and in addition having a pre-HIV history of IPV were factors associated with an increased risk of IPV among HIV-positive women (Gielen et al., 2000). They also illuminate the factors influencing IPV in this context.

The data on IPV among heterosexual men is an innovative feature of this study. The identical proportion (2%) of heterosexual HIV-positive men reporting IPV either before only or after an HIV-positive diagnosis is lower than that reported in the USA (7.5%) (Zierler et al., 2000). However, this may be under-reported (Lucas, 2006).

Findings for this study have important implications for health care providers. Currently, counseling and service interventions for sexual and reproductive health care needs are being developed in South Africa. There is a need for appropriate screening, treatment and care, as well as referrals to services for people who experience IPV related to either HIV-positive diagnosis or other reasons to be incorporated into these counseling and service interventions. In addition, screening clients for the identified risk factors may help providers to anticipate and counsel regarding potential IPV among PLWHA and develop appropriate safety plans. Therefore, this study helps inform the health service delivery for the growing numbers of PLWHA nationally and in other developing countries with high levels of both IPV and HIV/AIDS.

LIST OF ABBREVIATIONS

| | |
|-------|---|
| HIV | Human immuno-deficiency virus |
| AIDS | Acquired Immunodeficiency syndrome |
| IPV | Intimate partner violence/abuse, sometime referred to in this context as 'violence' or 'abuse' |
| OR | Odds ratio |
| CI | Confidence Interval |
| PLWHA | People Living with HIV/AIDS |
| pMTCT | Prevention of Mother-to-Child Transmission |
| ARV | Antiretroviral |
| ART | Antiretroviral therapy |
| y | years |
| mo | months |

1 CHAPTER 1: INTRODUCTION

1.1 Problem statement

For many South African women, the experience of intimate partner violence (IPV)^b is a day-to-day reality and so is the growing HIV/AIDS epidemic. South Africa has one of the highest levels of physical and emotional IPV perpetrated by men against women in the world (Jewkes et al., 2001; Jewkes et al., 2002). In addition, the country also has a high rate of HIV, with a national antenatal HIV prevalence rate of 29.1% among women (Department of Health, 2007). Women aged 20-34 years are most severely affected by the HIV epidemic, with the highest prevalence rate of 38.7% in the 25-29 year age group (Department of Health, 2006). Hence, South African women bear a disproportionately heavy burden of both intimate partner violence and HIV/AIDS.

However, little is known about the experience of IPV among women living with HIV/AIDS. Internationally, there is uncertainty as to whether or not IPV is higher among this group of women (van der Straten et al., 1998; Vlahov et al., 1998; Zierler et al., 2000; Gielen et al., 2000; Cohen et al., 2000; Koenig and Moore, 2000; Grinstead et al., 2001; Maman et al., 2002; Gruskin et al., 2002; Koenig et al., 2002).

^b The World Health Organization defines intimate partner violence (IPV) as "...any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship." (Heise and Garcia-Moreno, 2002). It includes physical violence (e.g. slapping, hitting, kicking and beating); sexual violence (e.g. forced intercourse and other forms of sexual coercion); psychological violence (e.g., intimidation, constant belittling, and humiliating); and various controlling behaviours (e.g. isolating a person from their family and friends, monitoring their movements, and restricting their access to information or assistance (Heise and Garcia-Moreno, 2002). Where abuse is used in this dissertation it is interchangeable with intimate partner violence or abuse.

While there is increasing evidence on HIV-positive status disclosure-related IPV in South Africa and elsewhere (Mathews et al., 1999; Finney and Njoko, 2000; Gielen et al., 2000), very few studies have compared IPV before and after an HIV-positive diagnosis (Gielen et al., 2000). Hence, it is unclear whether previously existing patterns of violence persist, perhaps with different triggers (HIV-related, for example), in these intimate relationships or whether an HIV-positive diagnosis leads to the onset of IPV for the first time.

In addition, there is little information, internationally, on the reasons for IPV among HIV-positive women as well as on the experience of IPV among heterosexual HIV-positive men.

Understanding the experience of IPV among South African people with HIV is crucial for the planning and implementation of appropriate health services. Therefore, this research investigates specifically, to what extent IPV occurs among people living with HIV as well as whether this violence is related to their HIV-positive status or not. Also, the factors associated with IPV are investigated.

1.2 Rationale and Justification

This research determines the magnitude of the problem of IPV since being diagnosed among HIV-positive among men and women receiving HIV care in the greater Gugulethu area of Cape Town. It identifies the self-perceived reasons for IPV among HIV-positive

women and men receiving HIV care in this area. It expands knowledge of the risk factors associated with IPV in this HIV-positive population as a basis for better health service delivery in primary health care clinics to assist men and women who experience IPV after diagnosis of HIV. This research will inform this aspect of health service delivery for the increasing numbers of HIV-positive men and women in Cape Town and across the country. It will contribute to new HIV/AIDS care policies that take into account IPV. Finally, it will create public awareness of IPV among HIV-positive people.

1.2.1 Hypotheses

1. The prevalence of IPV is higher among HIV-positive women than what is known of the general population of women who are either HIV-negative or of unknown HIV status.
2. HIV infection is an important self-perceived reason for IPV among women and men living with HIV/AIDS.
3. Disclosure of HIV- positive test results to partners may be a particularly important risk factor for IPV after diagnosis with HIV, among women and men receiving HIV care.

1.3 Aims and Objectives

1.3.1 Aim

This study aims to determine the prevalence and examine the determinants of emotional, physical or sexual violence from an intimate partner among HIV-positive women and men attending HIV care in the greater Gugulethu area of Cape Town.

1.3.2 Objectives

The main objectives of the study are:

- (i) To determine and compare the proportions of HIV-positive individuals stratified by sex who experienced IPV prior to becoming HIV-positive and after an HIV-positive diagnosis.
- (ii) Among those who experienced IPV after being diagnosed HIV-positive, to determine to what extent abuse was related to other issues and to what extent the abuse was attributable directly to their HIV-positive status.
- (iii) To determine if the likelihood of experiencing HIV-related IPV and/or having experienced IPV for other reasons differs by demographic characteristics, partnership status, clinical characteristics, information about disclosure to partners and previous history of violence.
- (iv) To determine the risk factors for experiencing IPV after an HIV-positive diagnosis.
- (v) To make recommendations to health care providers to aid in routine screening and interventions for IPV in HIV-positive individuals.

1.4 Structure of the dissertation

This dissertation consists of five chapters. Chapter one provides a background to the dissertation topic and the rationale for the dissertation topic. It states the aims and objectives of the study. It also highlights the importance and novelty of the research as well as gives an overview of the dissertation as a whole. Chapter two provides a review of the available literature. It will confine itself to literature that is specifically relevant to the topic under examination. It will also include a review of the methodologies used in the different studies. Chapter three provides a detailed description of the methodology used in this study. Specifically, this chapter will describe the study design, population and sampling, data collection instruments, study variables and data analysis. In addition, ethical procedures will be incorporated in this chapter. Chapter four consists of the presentation of results. Chapter five interprets the results, discusses them in the context of existing literature and highlights the limitations as well as the strengths of the study. Moreover, the discussion chapter will review the hypotheses in light of the results and provide a rationale for support or lack of support of the hypotheses. Finally, a summary of the study's contribution to the literature, its conclusions and recommendations for health policy and services provision, and suggestions for future research will be presented in this final chapter.

The framework for the study could be presented in tabular form, as follows:

| Chapter | Description |
|---|--|
| Chapter One Introduction | <ul style="list-style-type: none"> • It presents the dissertation topic. It will cover areas such as research background, rationale, aims and objectives as well as an orientation to dissertation as a whole |
| Chapter Two Literature Review | <ul style="list-style-type: none"> • Reviews the available literature that is relevant to the topic and includes a review of the methodologies used in the different studies. |
| Chapter Three Methods | <ul style="list-style-type: none"> • Detailed description of the methodology used in the study. • Describes areas such as the study design, populations, sampling, data collection instruments, list of study variables, data analysis and ethics |
| Chapter Four Results | <ul style="list-style-type: none"> • Results are presented in the form of tables and then described in the text |
| Chapter Five Discussion | <ul style="list-style-type: none"> • Interprets the results discusses these in the context of existing literature and the limitations and strength of the study. • Reviews hypotheses in the light of results. • Summarizes the study's contribution to the literature • Provides recommendations for policy and service provision and suggestion for future research. |

2 CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this chapter, literature that is relevant to the research topic will be reviewed. Included in the review is the magnitude of intimate partner violence (IPV) against women and its links to HIV/AIDS, reasons for intimate partner violence, factors associated with intimate partner violence against women, what is known about intimate partner violence against men and its links with HIV/AIDS. It also includes a discussion of the methodological and contextual limitations of the reviewed studies.

2.2 Intimate partner violence against women and HIV/AIDS

There has been research on the links between IPV and becoming infected with HIV^c. For example, a study conducted among women attending antenatal clinics in Soweto, South Africa, found that women who had experienced physical IPV were 1.56 times more likely to be HIV-positive and in the case of both physical and sexual abuse 1.66 times more likely to be HIV-positive than women who had not (OR 1.56 95% CI 1.21—2.03; 1.18 — 2.32 respectively) (Dunkle et al., 2004). However, there is ambiguity as to whether or not IPV is more likely to occur among women whose HIV-positive status is known than among HIV-negative women or among those whose HIV status is unknown.

^c Literature of IPV and HIV acquisition was intentionally limited as main focus was on IPV of those already HIV-positive.

Internationally, some studies have suggested an increase in levels of IPV among women already HIV-infected (van der Straten et al., 1998; Zierler et al., 2000; Grinstead et al., 2001; Maman et al., 2002). For example, a study in Rwanda by van Straden et al. (1998) of 921 women in stable relationships who were interviewed 24 months into a continuing intervention trial, showed that men when refused sex by their HIV-positive female partners were much more likely to become angry, than men in a similar situation whose partners were uninfected with HIV (46% vs 29%).

However, other studies suggest that among women with comparable socio-demographic backgrounds, levels of IPV among HIV-positive women are similar to that among HIV-negative women or women with unknown HIV status. These studies suggest that IPV may be attributable to social or behavioural factors rather than to HIV-related factors (Vlahov et al., 1998; Gielen et al., 2000; Cohen et al., 2000; Zierler et al., 2000; Gruskin et al., 2002; Koenig et al., 2002; Koenig and Moore, 2000).

It is important to bear in mind that the prevalence estimates of IPV in the studies reviewed may vary because of differences in the study timeframes, settings or contexts, the study populations, sources of data, definitions of IPV and in the willingness of the participants to talk openly and honestly about their experiences of IPV (Heise and Garcia-Moreno, 2002).

Very few studies have compared IPV in the same study population both before and after an HIV-positive diagnosis. A cross-sectional study by Gielen et al. (2000) conducted

among 310 mostly African-American HIV-positive women who were receiving HIV care in a poor urban area of Baltimore, USA, showed that where there was a pre-existing pattern of violence before an HIV-positive diagnosis this was likely to continue after diagnosis. This study, found that HIV-positive women who had experienced physical or sexual violence before being diagnosed as HIV-positive were significantly more likely (OR 2.37, 95% CI 1.38—4.09) to experience violence after an HIV-positive diagnosis than women who had not previously experienced IPV (Gielen et al., 2000).

More information is needed on whether previously existing patterns of violence persist, perhaps with different triggers (HIV-related, for example) in intimate relationships after an HIV diagnosis or whether an HIV-positive diagnosis leads to the onset of IPV for the first time.

2.3 Reasons for intimate partner violence against women

Some research has been conducted on reasons for IPV among the general female population elsewhere in sub-Saharan Africa. These reasons were related to the expression of male dominance and power over women. For example, a Ugandan study, using focus group discussions among 96 women, found that men tended to react violently when women went for HIV testing, disclosed HIV test results or requested that they use condoms (Karamagi et al., 2006). However, in contrast to this Ugandan study, a quantitative study in Uganda, which interviewed 5109 women of reproductive age, found that the most commonly cited reasons for physical violence by a male partner during the preceding 12 months were: a wife's perceived neglect of household chores (28.8%),

perceived disobeying of a husband or family elders (24%), a woman's refusal to have sex (17%), arguments over money (14%) and a male partner suspecting infidelity by his female partner (13%) (Koenig et al., 2003). This study found that the least cited reasons for physical violence by male partner's during the preceding 12 months were a woman's insistence on using condoms, use of contraception without permission or suspected HIV-positive status (each <1%) (Koenig et al., 2003). So, in this latter study factors possibly related to HIV, were less likely to have triggered violence than other factors.

However, there is little information, from developing and developed countries, on the reasons for intimate partner violence among a specific population of HIV-positive women. For example, a qualitative Zambian study, investigating gender-based violence on women's access and adherence to antiretroviral (ARV) treatment showed that men reacted violently when women discussed HIV testing and treatment; when women disclosed their HIV-positive status; when they discovered women had started ARV treatment, women had gone to the clinic for HIV care or attended support groups without permission (Human Rights Watch, 2007).

2.4 Factors associated with intimate partner violence against women

Research from developed countries has been conducted on factors associated with intimate partner violence among the general population of women as well among HIV-positive women. As with the general population, demographic, socio-economic and behavioural factors were associated with increased intimate partner violence among HIV-positive women (Crandell et al., 2004; Heise and Garcia-Moreno, 2002; Tjaden and

Theonnes, 2000; Vlahov et al., 1998; Zierler et al., 2000; Cohen et al., 2000; Gielen et al., 2000; Gruskin et al., 2002; Galvin et al., 2004). However, disclosure of being HIV-positive, having a higher CD4 count (relative to a lower CD4 count) and longer time having elapsed since HIV diagnosis were additional factors associated with increased risk of IPV unique to the HIV-positive female population (Vlahov et al., 1998; Zierler et al., 2000; Gielen et al., 2000; Gruskin et al., 2002; Galvin et al., 2004).

However, in developing countries, including South Africa, there has been little research on the factors associated with IPV either among general populations of women (Jewkes et al., 2002; Koenig et al., 2003; Karamagi et al., 2006) or among HIV-positive women. Moreover, there is no comparative data available on the factors associated with IPV among HIV-positive women and general populations of women. Hence it is unknown whether an HIV-positive diagnosis in itself promotes greater IPV among HIV-positive women in these settings.

Age

Some studies, from developed countries have suggested that IPV may be greater in younger than older HIV-positive women (Zierler et al., 2000; Gielen et al., 2000).

However, there is scant information in developing countries on the association between age and intimate partner violence among HIV-positive women. One quantitative study conducted among 245 women attending a voluntary counselling and testing centre in Tanzania, found that HIV-positive women less than 30 years were more likely to report physical violence from their current partner than HIV-negative women of the same age

(OR 9.99; 95% CI 2.67—37.37) (Maman et al., 2002). However, this pattern did not seem to persist among older women. Older women, whether HIV-positive or negative were significantly more likely to report physical violence from a current intimate partner than younger HIV-negative women (OR=11.66 and 9.59, respectively). It is possible that as women get older, they are at increased risk of IPV regardless of HIV status; in other words being HIV-positive may no longer be a factor influencing the occurrence of IPV as women grow older.

Drugs and alcohol

Several studies from developed countries have found use of drugs by HIV-positive women to play a role in increasing IPV (Vlahov et al., 1998; Cohen et al., 2000; Gielen et al., 2000; Galvin et al., 2004; Zierler et al., 2000; Gruskin et al., 2002; Koenig et al., 2002). However, fewer studies, have investigated the potential associations between use of alcohol by HIV-positive women and IPV (Galvin et al., 2004; van der Straten et al., 1998).

While links between alcohol or drug use and IPV has not been studied among HIV-positive women in South Africa, a strong link has been found between use of alcohol and IPV within the general population (Jewkes et al., 2002).

Partner HIV status

In addition to limited evidence in developed and developing countries on the association between alcohol use and intimate partner violence, there is also scant information on whether the HIV status of the intimate partners of HIV-positive women influences the occurrence of IPV. Evidence from one study conducted among 3551 participants from the HIV Voluntary Testing and Counselling Efficacy Trials in Tanzania, Kenya and Trinidad, found that HIV-positive women in sero-discordant couples where the man was HIV-negative were more likely to experience IPV than sero-discordant couples where the man was HIV-positive and the women HIV-negative (13% vs 0%) (Grinstead et al., 2001). However, more research is needed on this subject for more definite conclusions to be reached.

Disclosure

There is increasing evidence that disclosure of an HIV-positive diagnosis may be a risk factor for IPV. For example, a cross-sectional study of 310 HIV-positive women receiving medical care for their HIV in the USA, found that 4% reported that they had experienced physical abuse from an intimate partner following a disclosure event (Gielen et al., 2000). Similarly, a qualitative study conducted among 11 HIV-positive women living in metropolitan Durban in South Africa, found that all the women had experienced either physical (hitting, punching, slapping etc) and/or psychological abuse (stigma, discrimination) from an intimate partner related to disclosure of their HIV-positive status (Finney and Njoko, 2000). Furthermore, a quantitative study conducted among 88 HIV-positive mothers attending an outpatient clinic in Cape Town, found that 13% reported experiencing violence from their intimate partners following disclosure of HIV status, 9%

reported that their partner left them, and 3% said they were forced to move away from their home as a result of disclosure (Matthews et al., 1999). Despite the South African studies having a small sample size, these findings suggest that IPV may be prevalent in the intimate relationships of HIV-positive women following disclosure.

Health status

Although there is increasing evidence on HIV-positive status disclosure-related IPV, the relationship between IPV and health status of HIV-positive women is less clear. While some studies report increased risk of violence (Gielen et al., 2000), others report decreased risk of violence as the disease progresses and women develop AIDS symptoms (Vlahov et al., 1998; Zierler et al., 2000; Gruskin et al., 2002; Galvin et al., 2004).

2.5 Intimate partner violence against men and HIV/AIDS

While there is some information, from developed and developing countries, on the experience of IPV among HIV-positive women from their male partners, there is extremely limited information on the experience of IPV among heterosexual HIV-positive men from their female partners. One nationally representative sample of 2864 HIV-positive individuals in the USA, found that 7.5% of heterosexual men reported experiencing physical violence from their female partners after being diagnosed as HIV-positive (Zierler et al., 2000). This study also found that heterosexual men with lower educational levels (high school education or less) were 3 times more likely than men with higher education (tertiary education) to experience IPV (OR 2.7, 95% CI 0.9-7.8) (Zierler et al., 2000).

2.6 Limitations of studies reviewed

The reviewed studies are ambiguous and limited in informing us as to whether intimate partner violence is greater among HIV-positive women than what is known among the general population of women who are either HIV-negative or of unknown HIV status. They are also unclear on whether patterns of violence developed earlier persist but perhaps with different triggers (HIV-triggered violence, for example) in these relationships or whether the onset of IPV is attributable directly to HIV-related factors. There is furthermore very limited information on the experience of IPV among heterosexual HIV-positive men from their female partners. This study will contribute to expanding the knowledge base on these issues.

The reviewed studies also have methodological and contextual limitations. These studies fail to offer an in-depth study of women's and men's experiences with IPV after being diagnosed with HIV (Zierler et al., 2000). Since these studies have used quantitative methods alone or in combination with qualitative methods to determine these experiences in American populations, their findings cannot necessarily be applied to the substantially different social and cultural contexts of developing countries (including South Africa) (Gielen et al., 2000; Zierler et al., 2000; Galvin et al., 2004). Moreover, these studies have not been designed to comprehensively address whether IPV occurs among HIV-positive women and men or whether this violence is due to HIV-related factors (Zierler et al., 2000; Gielen et al., 2000; Galvin et al., 2004). This research will therefore provide

information on a group of South African women's and men's experiences with IPV after being diagnosed with HIV. Using quantitative methods this enquiry will focus on understanding to what extent IPV occurs and whether this violence is perceived to be due to HIV-related factors.

University of Cape Town

3 CHAPTER 3: METHODS

3.1 Introduction

A detailed description of the methods used will be presented in this chapter. Specifically, this chapter will describe the study design, population and sampling, data collection instruments, study variables and data analysis. In addition, ethical procedures will be incorporated in this chapter.

3.2 Study design

This study is a sub-study of a broader cross-sectional study that assessed the fertility intentions, contraceptive service needs and reproductive decision-making among HIV-infected women and men in the greater Gugulethu area of Cape Town^d (Cooper, 2005).

3.3 Population and sampling

Participants were eligible for the study if they were 18 years or older, HIV infected according to diagnosis at an HIV care of treatment centre, willing to have basic medical information extracted from their medical records and willing to be interviewed. Trained female and male interviewers conducted the survey between May and September 2006. All interviews were conducted face-to-face, using a standardised questionnaire administered by a same sex interviewer in the participants' first language. Study

^d People in this study self-identified as heterosexual. This was not intended to be exclusionary but was important for this study only because the focus was on having or not having biological children.

participants were selected at random^e from among female and male clients attending HIV care at public sector health care facilities in a community with high levels of HIV (Cooper et al., 2007). All eligible participants approached were informed about the study and after that gave consent if they were willing to be interviewed. All of the information obtained from individual participants has been kept private and confidential. Ethical approval to conduct the cross-sectional study was provided by the Research Ethics Committees at the University of Cape Town (REC REF: 261/2003) and the World Health Organisation. The overall response rates for the study were 90% and 88% for male and female participants respectively, and the final sample size^f was 459 HIV-positive individuals. The main reasons for refusal included feeling too ill to be interviewed and having to hurry to work or some other activity (Nglazi et al., 2007).

3.4 Measurement

3.4.1 Instrument

The quantitative instrument (questionnaire) used in the cross-sectional study was based on the results of formative qualitative research. The questionnaire collected information

^e Men and women from ART or non-ART HIV care, VCT and pMTCT services were selected to participate at random by researchers using random number sequences and registers of patients attending each service on the day. In particular, six men and six women were selected at random from HIV care, four women were selected at random from pMTCT and four men were selected at random from VCT. (Cooper, 2005).

^f The sample size calculation was based on the broader study. For the pMTCT (women) and VCT (men) component, it was based on an estimated 2000 women enrolled in each service at the clinic each year, and an hypothesized 50% planning to remain sexually active but not planning future children. For the HIV care component, it was based on the primary comparison of fertility intentions among those receiving ART with those not yet receiving this care. It was hypothesized that there would be at least a doubling in the wish to have children in the future among individuals already receiving ART, compared to those not yet receiving care, and approximately 20% of individuals not receiving any form of HIV care would wish to have children in future (Cooper, 2005).

on socioeconomic, demographic, relationship, behavioural and clinical characteristics of HIV-positive women and men; HIV infection disclosure; the HIV status of their main intimate partner, HIV-positive women and men's fertility intentions and choices, factors influencing these and their experiences of sexual and reproductive health services. Furthermore, information on women and men's reported experiences of intimate partner violence before and after their HIV-positive diagnosis, and the reasons for the violence, including whether it was HIV-related was collected. The data from this study was entered into a computer and the variables probing intimate partner violence was analysed.

3.4.2 List and definition of variables

The choice of variables for the identification of risk factors in this study was based on those in the ecological model developed by Heise and Garcia-Moreno (2002) and on previous work with HIV-positive women and men (Gielen et al., 2000; Zierler et al., 2000, Maman et al., 2002).

- Outcome variables
 - Reasons for abuse after HIV diagnosis

Three measures were used to construct the independent variable(s).

Firstly, the participant was asked if they had experienced emotional, physical or sexual abuse after HIV-positive diagnosis. Answer options were yes, no or unsure. Secondly, if a participant responded that they had experienced emotional, physical or sexual abuse after HIV-positive diagnosis, they were asked if they thought it was because of their HIV

status. If they answered yes, it was counted as HIV-related violence.

Thirdly, if a participant responded that they had experienced emotional, physical or sexual abuse after HIV-positive diagnosis, they were asked if they thought that it was because of discussing condom use, having children, other reasons or they were unsure. If they answered yes, it was counted as violence for other reasons.

- Abuse after HIV diagnosis

The participant was asked if they had experienced emotional, physical or sexual abuse after an HIV-positive diagnosis. Answer options were yes, no or unsure. Participants who answered yes to these questions were asked the reasons they thought it occurred.

Due to the limited nature of collection of data on IPV in this study, types of violence (physical, emotional and sexual) were not differentiated. As mentioned earlier, the World Health Organisation defines IPV as "...any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship" (Heise and Garcia-Moreno, 2002).

- Determinants

- Demographic and socioeconomic characteristics including: age, gender, home language, employment status, education, type of home and level of income. Age was then categorised as 18-29, 30-39 and 40 years and older.

Sex was dichotomised as male and female. Level of income was categorised as less than R1000 per month, from R1000 to R1999 per month and R2000 and more per month. Education was dichotomised to having less than a secondary school education and having a secondary school education. Home language was dichotomised into speaking Xhosa (“yes”) and not speaking Xhosa (“no”). Type of home was dichotomised into living in either a house or a council flat and living in a shack. Employment status was dichotomised into working (“yes”) and not working (“no”).

- Behavioural characteristics: frequency of condom use during the last 6 months. Participants were asked how frequently they/their partner(s) used condoms during sexual intercourse in the last 6 months. Answer options were categorised as always, most times, some times, rarely, never or not applicable/not sexually active. Respondents were then classified as ever used condoms during sexual intercourse in the last 6 months if they answered always, most times, some times and rarely. They were classified as never having used condoms during sexual intercourse in the last 6 months if they answered never. The remaining category was for those not applicable/sexually active.
- Relationship characteristics including: relationship description, length of the relationship and whether the main partner was a parent of any of the participant’s children. Answer options were categorised as no or yes.

Then this variable was then categorised as no, yes and not in a current sexual relationship.

- Relationship characteristics obtained from the participants included the description of the relationship and length of the relationship. Answer options for the description of the relationship were categorised as married, living together but not being married (“not married, living together”), being either a girlfriend or boyfriend but not living together (boyfriend/girlfriend, not living together”) and not being in a sexual relationship (“not in a sexual relationship”). Length of relationship was then categorised as 0-4 years, 5-11 years, more than 12 years and not in a current sexual relationship^g.
- Clinical characteristics including: length of time since HIV-positive diagnosis, CD4 count and main partner HIV-positive status. Length of time since HIV-positive diagnosis was then dichotomised as 0-12 months and more than 12 months. CD4 count was categorised as less than 200, from 200-500 and more than 500 cells/ μ L. Main partner’s HIV-positive status was coded into a single variable: (main partner status unknown , HIV negative, main partner HIV-positive, or no main partner).
- Disclosure to partners. Participants were asked if they discussed their HIV-infection with any of their partners. Answer options were yes, no or not applicable (has no partner).

^g Because the main focus of the study was on fertility intentions (i.e. desires for children), the categorisation of current relationships by 4 to 6 year intervals was decided on as we were wanting to look at the difference between fertility intentions of participants in shorter relationships that were possibly less stable versus longer more stable relationships.

- Pre-HIV history of intimate partner violence. Participants were asked if they ever suffered emotional, physical or sexual abuse from a partner before their HIV-positive diagnosis. Answer options were yes or no.
- Self-reported health related quality of life.
 - Self-rated physical health status: Participants were asked which answers best described how they move around (mobility). Answer options were “I have no problems walking”, “I have some problems walking about” and “I am confined to bed”. Participants were also asked which answer best described their daily activities. Answer options were “I have no problems performing my usual activities”, “I have some problems with performing my usual activities”, and “I am unable to perform my usual activities”. In addition, participants were asked which answer best described their pain or discomfort. Answer options were “I have no pain or discomfort”, “I have moderate pain” and “I have extreme pain or discomfort”.
 - Self-rated mental health status: Lastly, participants were asked which answer best described their feelings. Answer options were “I am not anxious/depressed”, “I am moderately anxious or depressed”, and “I am extremely anxious or depressed”.

3.5 Analysis

3.5.1 Data Cleaning

Descriptive statistics was used to identify missing data and peculiar observations (i.e. data not fitting with the “norm”, data that looked incorrect etc). Peculiar observations were dealt with by replacing it with the logical alternative or checking against the original questionnaires with the permission of the study principal investigator. The appropriate variables (categorical or continuous) in the questionnaire were selected for the analysis. STATA 8 gen and replace commands were used in grouping the data into variables that would be used in analysis. Data was grouped into a polytomous outcome variable (reasons for abuse after HIV diagnosis), binary outcome variable (abuse after HIV diagnosis), binary independent variables (such as sex, speaks Xhosa, currently working, level of education, housing, time since HIV diagnosis and history of intimate partner violence), polytomous independent variables (such as age, relationship description, current CD4 count (determined by patient knowledge and records), length of relationship, main partner status, condom use in the last 6 months, household income, disclosure to partner and partner parent of participants child) and the variable, abuse in relation to time of HIV diagnosis. Those who did not know their CD4 count, in the variable CD4 count, remained coded as having a CD4 count of 0. The independent variable, sex, coded as 1=female and 2=male was changed into the independent variable, sex, coded as 1=female and 0=male. In the case of the polytomous outcome variable, reasons for abuse after HIV diagnosis, it was assumed those with missing data (n=7) experienced abuse after HIV diagnosis for other reasons. The “discussing condom use” (n=4) category was collapsed with the “other” (n=6) category in the reasons for abuse after HIV diagnosis variable to

form the IPV for other reasons category because of the small cell sizes. In the case of the binary independent variable, level of education, those entered with a level of education of grade 15 were assumed to have a level of education of grade 12. In the case of the polytomous independent variable, relationship description, it was established that those with missing data (n=114) were not currently in a sexual relationship. Among polytomous independent variables, length of relationship and partner parent of any of participant's children, it was found that those with missing data (n=114) were not currently in a sexual relationship. The rationale in doing this to the relationship characteristics (relationship description, length of relationship and partner parent of participants child) were because some individuals may have experienced IPV with ex-partners or from partners with whom they are not currently sexual active and leaving out individuals with missing data would compromise the analyses. In the case of the polytomous independent variable, main partner status, it was established that those with missing data (n=173) had no main partner. Leaving out these individuals with missing data in the main partner status variable would compromise the analyses. The "most times" (n=29), "some times" (n=54), "rarely" (n= 31) categories in the condom use in the last six months variable were collapsed with "always (n=199) to form the "ever" category because of their small cell sizes.

3.5.2 Statistical methods

Main analyses

The data set was analysed using STATA Intercooled Version 8 and Casecont. The 5% significance level was used for interpretation of all p-values. For exploratory data

analysis, descriptive statistics were used for characterising the sample. Crude-bivariate analysis was used to describe the experience of intimate partner violence by participant sex. In addition, it was used to describe the reasons for intimate partner violence after HIV-positive diagnosis by participant sex. Crude-bivariate analysis (using Chi-square tests and Fisher's exact tests to compare proportions) was used to identify basic associations between potential predictors and each outcome variable (reasons for abuse after HIV-positive diagnosis and abuse after HIV diagnosis). Then the crude-bivariate associations with reasons for abuse after HIV diagnosis were compared and contrasted.

Multiple logistic regression was used to identify risk factors for intimate partner violence after an HIV-positive diagnosis among all participants. The outcome variable for the regression was any emotional, physical or sexual abuse from a partner after an HIV-positive diagnosis. The independent variables tested included demographic characteristics, socio-economic characteristics, clinical characteristics, information on partnership status, sexual activity, and history of intimate partner violence before HIV-positive diagnosis. For multivariate analysis, multiple logistic regression using maximum likelihood estimation was employed. For model building, nested models were used and compared using likelihood ratio tests. In addition, Akaike Information Criteria (AICs) were used in model building. No statistical interactions were investigated because it was not stated a priori. For model diagnostics, residual analysis was used to identify outliers and influential observations. Wald confidence limits were used in the multiple logistic regression model.

In addition, multiple logistic regression was used to identify risk factors for intimate partner violence after an HIV-positive diagnosis among HIV-positive women only and men only. However, the multiple logistic regression model for men is not reported because men had too low a prevalence of reported intimate partner violence to render these analyses meaningful. In addition, the model was not informative and had too many missing observations

Adjustment for confounders

Regression analysis was used to assess whether health related factors or disclosure were confounders in the association between time since diagnosis and IPV. Confounders were identified empirically, i.e., by calculating the change in the log-odds of the time since diagnosis variable when comparing the adjusted model containing time since diagnosis and the covariate of interest with that in the crude model where time since diagnosis was the sole variable. A confounder was considered as any variable that produced a 10% change in the log-odds of the time since diagnosis variable. Multiple logistic regression models were computed by adding the independent variables (including disclosure) in the main analyses followed by the health related quality of life variables. Purposeful selection was employed. Nested models were compared using log likelihood tests and non-nested models were compared using Akaike's Information Criterion (AIC).

In a subanalysis for women including only those where the status of the main intimate partner was known (HIV-positive or negative), bivariate frequencies were used to describe the prevalence of IPV and each HIV status. In addition, the crude-bivariate OR,

95% CI and p values were determined for the association between known partner status and IPV. Multiple logistic regression was used to determine the adjusted OR at a 95% confidence level. In order to avoid messy data, it was decided to exclude those in relationships where the status of the main intimate partner was unknown from the sub-analysis because in these relationships some men will be assuming their status from that disclosed by their partner, while others may choose not to test for HIV.

A subanalysis for women confined only to those who had or had not disclosed their status to their main intimate partner employed bivariate frequencies to describe the prevalence of IPV and each disclosure status. Also, the crude-bivariate OR, 95% CI and p values were determined for the association between disclosure and IPV. Lastly, multiple logistic regression was used to determine the adjusted OR at a 95% confidence level.

In a separate analysis confined only to women who had disclosed their status to their partner, the prevalences of IPV before and after diagnosis was determined.

Multivariate analysis was confined only to those who had a main intimate partner, as it was the experience of IPV from a main intimate partner that was being specifically investigated. It was used to identify risk factors for IPV after diagnosis for women only and all participants. Adjusted ORs and 95% CIs are reported. However, the multiple logistic regression model for men is not reported because men had too low a prevalence of reported intimate partner violence to render these analyses meaningful. In addition, the number of men in the model was too small.

The study results derived from the methods described above will be presented in the following chapter.

4 CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents the study results. It will first look at the sample characteristics. It then goes on to look at violence before and after a diagnosis. This is followed by reasons for intimate partner violence after HIV diagnosis. It then looks at the bivariate associations with reasons of violence. It looks at the multivariate analysis. Finally, this chapter looks at various subanalyses. In order to get a much clearer picture of the experiences of IPV among different sexes, all the results are disaggregated by sex where possible.

4.2 Sample

The characteristics of the sample are shown in Table I. Sixty-two percent of the sample were women (N=285), while 38% were men (N=174).

4.2.1 Women

Demographic

More than half of the women were aged 18-29 years (52%), and most of them spoke Xhosa (98%). At the time of the interview, the median age was 29 years (range=18-55, inter-quartile range 25 to 34).

Socioeconomic Characteristics

Seventy-nine percent of women were not working, 89% had received at least a secondary school education, more than half (52%) lived in a house or council flat and 37% had a monthly household income of R1000 to R1999; 34% less than R 1000 per month and 29% more than R 2000 per month.

Partnership Characteristics

Thirty-six percent of the women reported being either married or living together, while 44% reported that they were not living together with their boyfriend. The remaining 20% reported that they were not currently in a sexual relationship. Among women currently in a sexual relationship (N=229, 80%), most (60%) reported that they had been in this relationship for 4 years or less (median= 3 years, range=0-31 years, inter-quartile range= 2-6years) and 65% reported that this partner was not a parent of any of their children (not shown).

Sexual activity

Thirty-nine percent of the women reported that they or their partner always used a condom during sexual intercourse in the last 6 months (not shown).

Clinical Characteristics

Fifty-six percent of the women reported that their main partner's HIV status was unknown, while 44% knew their main partners' HIV-status. Nearly a third (32%) of

women's male partners were known to be HIV-positive, while 12% of them were known to be HIV-negative. Slightly over half (51%) of the women reported knowing they were HIV-positive for 12 months or less (median=12 months, range=0-108, inter-quartile range=3 to 48 months). Forty-seven percent of the women reported to have a CD4 count of 200 to 500 cells/ μ L (median=260, range=0-1500, inter-quartile range=145-411).

Twelve women had missing data for CD4 count (4%).

History of intimate partner violence

Twenty-three percent of the women had experienced intimate partner violence prior to HIV-positive diagnosis.

Disclosure to partners

A majority of women (88%) had disclosed their HIV-positive status to their main intimate partner. The remaining 12% had not disclosed their HIV-positive status to their main partner.

4.2.2 Men

Demographic

Most of the men spoke Xhosa (98%) and 35% were aged 40-68 years. The median age was 36 years (range=20 to 68, inter-quartile range 32 to 43).

Socioeconomic Characteristics

Most of the men were not currently working (82%), with a secondary school education (68%) and had a monthly household income of less than R1000 (61%). Over half (52%) of them lived in shacks.

Partnership Characteristics

Most men reported that they were currently in a sexual relationship (67%). Forty-one percent of the men reported that they were either married or living together and 26% reported that were not living with their girl-friend. Thirty-three percent reported that they were not currently in a sexual relationship. Among men currently in a sexual relationship, nearly half (47%) reported that they had been in this relationship for 4 years or less (median= 5 years, range=0-37 years, inter-quartile range= 2-10years) and most of them (60%) reported that this partner was not a parent of any of their children (not shown).

Sexual activity

Slightly over half (51%) of the men reported that they or their partner always used a condom during sexual intercourse in the last 6 months (not shown).

Clinical Characteristics

Thirty percent of the men reported that their main partner's HIV status was unknown, while 70% knew their main partner's HIV status. Forty-nine percent of men's female partners were known to be HIV-positive, while 22% of them were known to be HIV-

negative. Over half (57%) of the men reported knowing they were HIV-positive for 12 months or less (median=12 months, range=0-168, inter-quartile range=5 to 36 months). Thirty-nine percent of the men reported to have a CD4 count of less than 200 cells/ μ L (median=127, range=0-941, inter-quartile range=47-242). Seventy-three men had missing data for CD4 count (42%).

History of intimate partner violence

Two percent of the men had experienced intimate partner violence prior to HIV-positive diagnosis.

Disclosure to partners

A large proportion of men (87%) had disclosed their HIV-positive status to their main partner. Thirteen percent of men had not disclosed the HIV-positive status to their main partner.

Table I. Sample Characteristics

(a) Sample Characteristics for women

| Variable | Women | |
|----------------------|------------|----------------|
| | Number (N) | Percentage (%) |
| Demographic | | |
| Age | | |
| 18-29 | 147 | 51.6 |
| 30-39 | 108 | 38.0 |
| 40+ | 30 | 10.5 |
| Sex | | |
| Female | — | — |
| Male | — | — |
| Speaks Xhosa | | |
| No | 6 | 2.1 |
| Yes | 279 | 97.9 |
| Socioeconomic | | |
| Currently working | | |
| No | 225 | 79.0 |
| Yes | 60 | 21.0 |

| Variable | Women | |
|---|------------|----------------|
| | Number (N) | Percentage (%) |
| Level of education | | |
| Less than secondary | 27 | 9.5 |
| Secondary school | 254 | 89.1 |
| Missing | 4 | 1.4 |
| Housing | | |
| Lives in house/council flat | 149 | 52.3 |
| Lives in shack | 136 | 47.7 |
| Income-household | | |
| <R1000/month | 97 | 34.0 |
| R1000-R1999 month | 106 | 37.2 |
| R2000+/month | 82 | 28.8 |
| Partnership status | | |
| Relationship description | | |
| Not in a current sexual relationship | 56 | 19.7 |
| Married/cohabiting | 103 | 36.1 |
| Dating | 126 | 44.2 |
| Length of relationship, y | | |
| 0-4 | 138 | 48.4 |
| 5-11 | 68 | 23.9 |
| 12+ | 16 | 5.6 |
| Not in a current sexual relationship | 56 | 19.7 |
| missing | 7 | 2.5 |
| Partner is parent of participant's child | | |
| No | 147 | 51.6 |
| Yes | 82 | 28.8 |
| Not in a current sexual relationship | 56 | 19.7 |
| Sexual activity | | |
| Condom use in the last 6 months | | |
| Never | 35 | 12.3 |
| Ever (Always/ Most times/ Some times/ Rarely) | 196 | 68.8 |
| Not applicable/not sexually active | 43 | 15.1 |
| Missing | 11 | 3.9 |
| Clinical | | |
| Main partner status | | |
| HIV+ | 60 | 31.8 |
| HIV unknown | 106 | 56.1 |
| HIV- | 23 | 12.2 |
| time since HIV+ diagnosis, mo | | |
| 0-12 months | 146 | 51.2 |
| >12 months | 139 | 48.8 |
| CD4 count, cells/μL | | |
| <200 | 99 | 34.7 |
| 200-500 | 134 | 47.0 |
| >500 | 40 | 14.0 |
| Missing | 12 | 4.2 |
| Pre-HIV history of intimate partner violence | | |
| No | 220 | 77.2 |
| Yes | 64 | 22.5 |
| Missing | 1 | 0.4 |
| Disclosure to partners | | |
| No | 16 | 12.1 |
| Yes | 116 | 87.9 |

Note. Percentages do not always add up to 100% due to rounding.

(b) Sample Characteristics for men

| Variable | Men | |
|---|------------|----------------|
| | Number (N) | Percentage (%) |
| Demographic | | |
| Age | | |
| 18-29 | 23 | 13.2 |
| 30-39 | 91 | 13.2 |
| 40+ | 60 | 34.5 |
| Sex | | |
| Female | — | — |
| Male | — | — |
| Speaks Xhosa | | |
| No | 4 | 2.3 |
| Yes | 170 | 97.7 |
| Socioeconomic | | |
| Currently working | | |
| No | 142 | 81.6 |
| Yes | 32 | 18.4 |
| Level of education | | |
| Less than secondary | 55 | 31.6 |
| Secondary school | 118 | 67.8 |
| Missing | 1 | 0.6 |
| Housing | | |
| Lives in house/council flat | 84 | 48.3 |
| Lives in shack | 90 | 51.7 |
| Income-household | | |
| <R1000/month | 106 | 60.9 |
| R1000-R1999 month | 51 | 29.3 |
| R2000+/month | 17 | 9.8 |
| Partnership status | | |
| Relationship description | | |
| Not in a current sexual relationship | 58 | 33.3 |
| Married/cohabiting | 71 | 40.8 |
| Dating | 45 | 25.9 |
| Length of relationship, y | | |
| 0-4 | 54 | 31.0 |
| 5-11 | 41 | 23.6 |
| 12+ | 20 | 11.5 |
| Not in a current sexual relationship | 58 | 33.3 |
| missing | 1 | 0.6 |
| Partner is parent of participant's child | | |
| No | 46 | 26.0 |
| Yes | 70 | 40.2 |
| Not in a current sexual relationship | 58 | 33.3 |
| Sexual activity | | |
| Condom use in the last 6 months | | |
| Never | 34 | 19.5 |
| Ever (Always/ Most times/ Some times/ Rarely) | 117 | 67.2 |
| Not applicable/not sexually active | 20 | 11.5 |
| Missing | 3 | 1.7 |
| Clinical | | |
| Main partner status | | |
| HIV+ | 47 | 48.5 |
| HIV unknown | 29 | 29.9 |
| HIV- | 21 | 21.7 |
| time since HIV+ diagnosis, mo | | |
| 0-12 months | 99 | 56.9 |
| >12 months | 75 | 43.1 |
| CD4 count, cells/ μ L | | |
| <200 | 68 | 39.1 |
| 200-500 | 28 | 16.1 |

| Variable | Men | |
|---|------------|----------------|
| | Number (N) | Percentage (%) |
| >500 | 5 | 2.9 |
| Missing | 73 | 42.0 |
| Pre-HIV history of intimate partner violence | | |
| No | 170 | 97.7 |
| Yes | 3 | 1.7 |
| Missing | 1 | 0.6 |
| Disclosure to partners | | |
| No | 17 | 13.3 |
| Yes | 111 | 86.7 |

Note. Percentages do not always add up to 100% due to rounding.

Table II. Frequency of intimate partner violence by participant sex and time of HIV diagnosis

| Participant Sex | Violence in relation to time of HIV diagnosis | | | | | Total |
|-----------------|---|------------------|------------|-------------|---------|-------------|
| | None | Before and after | After only | Before only | Missing | |
| Female | 211 (74.0) | 13 (4.6) | 9 (3.2) | 51 (17.9) | 1 (0.4) | 285 (100.0) |
| Male | 166 (95.4) | 0 (0.0) | 4 (2.3) | 3 (1.7) | 1 (0.6) | 174 (100.0) |
| Total | 377 (82.1) | 13 (2.8) | 13 (2.8) | 54 (11.8) | 2 (0.4) | 459 (100.0) |

Table III. Reasons for intimate partner violence after HIV diagnosis by participant sex

| Reason for intimate partner violence after HIV diagnosis | Sex | | Total |
|--|--|--|------------|
| | Female reporting intimate partner violence N (%) | Male reporting intimate partner violence N (%) | |
| HIV-related | 7 (31.8) | 2 (50.0) | 9 (34.6) |
| Other | 15 (68.2) | 2 (50.0) | 17 (65.4) |
| Total | 22 (100.0) | 4 (100.0) | 26 (100.0) |

4.3 Violence before and after HIV Diagnosis

Among women, 26% had a current life-time experience of reported emotional, physical or sexual violence from a partner. Five percent of women had experienced this violence both before and after their HIV-positive diagnosis, 18% experienced this violence only before their HIV-positive diagnosis and 3% experienced this violence only after their HIV-positive diagnosis (Table II).

Among men, 4% had a current life-time experience of reported emotional, physical or sexual violence from a partner. None of the men had experienced this violence both before and after their HIV-positive diagnosis, 2% had experienced this violence only before their HIV-positive diagnosis and 2% had experienced this violence only after their HIV-positive diagnosis (Table II).

4.4 Reasons for intimate partner violence after HIV Diagnosis

Six percent of the total sample had experienced emotional, physical or sexual violence from a partner after their HIV-positive diagnosis. Among those who experienced this violence after being diagnosed HIV-positive, 65% reported that this violence was related to issues other than HIV and 35% reported that this violence was related to being HIV-positive (Table III).

4.5 Bivariate associations with reasons for violence

Table IV. Bivariate association predicting a participant's likelihood of experiencing HIV-related violence or violence for other reasons.

| Variable* | Women‡ | |
|---|-----------------------|----------------------------|
| | HIV-related violence | Violence for other reasons |
| | Bivariate OR (95% CI) | Bivariate OR (95% CI) |
| Demographic | | |
| Age | | |
| 18-29 | 0.55 (0.04-30.10) | 0.32 (0.08-1.63) |
| 30-39 | 0.74 (0.06-40.52) | 0.25 (0.04-1.45) |
| 40+ | 1.00 | 1.00 |
| Sex | | |
| Female | - | - |
| Male | - | - |
| Socioeconomic | | |
| Currently working | | |
| No | 1.00 | 1.00 |
| Yes | 2.96 (0.42-17.97) | 1.43 (0.32-5.00) |
| Housing | | |
| Lives in house/council flat | 1.00 | 1.00 |
| Lives in shack | 0.43 (0.04-2.66) | 0.71 (0.22-2.25)† |
| Income-household | | |
| <R1000/month | 1.00 | 1.00 |
| R1000-R1999/month | 0.60 (0.05-5.37) | 0.90 (0.20-4.05) |
| R2000+/month | 0.81 (0.07-7.20) | 1.20 (0.27-5.44) |
| Partnership status | | |
| Relationship description | | |
| Not in a current sexual relationship | 1.80 (0.23-13.91) | 0.23 (0.01-1.78) |
| Married/cohabiting | 1.00 | 1.00 |
| Dating | 0.26 (0.005-3.29) | 0.58 (0.17-1.92)† |
| Partner is parent of participant's child | | |
| No | 1.00 | 1.00 |
| Yes | 1.78 (0.13-24.89) | 0.71 (0.16-2.57) |
| Not in a current sexual relationship | 3.97 (0.44-48.41) | 0.27 (0.01-1.96) |
| CD4 count, cells/ μ L | | |
| <200 | 1.00 | 1.00 |
| 200- 500 | 3.09 (0.30-153.72) | 1.80 (0.40-11.06) |
| >500 | 2.71 (0.03-215.25) | 3.62 (0.57-25.67) |
| Pre-HIV history of intimate partner violence | | |
| No | 1.00 | 1.00 |
| Yes | 0.69 (0.02-5.89) | 16.55 (4.20-93.41) |

‡Men were included in the original analysis but excluded in the final table as the sample size was too small for the results to be meaningful. In addition, all participants (women and men) were included in the original analysis but excluded in the final table as the data overlaps overwhelmingly with the data for women only (ORs are very similar) and are most likely to represent the women in the sample.

*Variables (such as speaks Xhosa, level of education, length of relationship, condom use in the last 6 months, main partner status, time since HIV+ diagnosis and disclosure to partner) with ORs that could not be calculated due to small cell numbers were excluded from the table.

† 95% CIs (approximate), however the rest of the 95% CIs are Fisher's exact CIs.

Note. It was preferred to omit p-values from the table and to present odds ratio estimates and 95% CI estimates

Overall, no variables were found to be statistically significantly associated only with experiencing HIV-related intimate partner violence after HIV diagnosis among all participants. However, several variables were found to be statistically significantly associated with experiencing intimate partner for other reasons among all participants. Being female (relative to male), knowing their HIV-positive status for more than 12 months (relative to 12 months or less) and having a history of intimate partner violence before the HIV diagnosis were all significantly associated with having a higher likelihood of experiencing intimate partner violence for other reasons after HIV diagnosis. Those who were female relative to male were 5 times more likely to report experiencing intimate partner violence for other reasons compared to no intimate partner violence after HIV diagnosis (OR 4.87, 95% CI 1.05—31.21). Those who knew their HIV-positive status for more than 12 months relative to 12 months or less, were approximately 6 times more likely to report experiencing intimate partner violence for other reasons compared to no intimate partner violence after HIV diagnosis (OR 5.94, 95% CI 1.57—26.42). Those having a history of intimate partner violence before HIV diagnosis relative to those who had not, were 17 times more likely to report experiencing intimate partner violence for other reasons compared to no intimate partner violence after HIV diagnosis (OR 16.76, 95% CI 5.18—62.43).

Among women, no variables were found to be statistically significantly associated only with experiencing HIV-related intimate partner violence after HIV diagnosis. Women knowing their HIV-positive status for more than 12 months (relative to 12 months or less) and having a history of intimate partner violence before the HIV diagnosis were all

significantly associated with having a higher likelihood of experiencing intimate partner violence for other reasons after HIV diagnosis. Women who knew their HIV-positive status for more than 12 months relative to 12 months or less, were approximately 5 times more likely to report experiencing intimate partner violence for other reasons compared to no intimate partner violence after HIV diagnosis (OR 4.81, 95% CI 1.22—22.00).

Women having a history of intimate partner violence before HIV diagnosis relative to those who had not, were approximately 17 times more likely to report experiencing intimate partner violence for other reasons compared to no intimate partner violence after HIV diagnosis (OR 16.55, 95% CI 4.20—93.41) (Table IV).

Among men, most questions could not be bivariately analysed because cell sizes of zero were present in the contingency tables. The results of the questions that could be analysed had odds ratios with very wide confidence intervals (Table IV).

4.6 Multivariate Analyses

In the logistic regression model of intimate partner violence after an HIV-positive diagnosis among all participants, it was found that only time since HIV-positive diagnosis and a history of violence prior to HIV diagnosis were significant direct effects. No statistical interaction was considered in multivariate analysis because it was not specified a priori in the proposal of this sub-study. Those who knew they were HIV-positive for more than 12 months before the interview were 5 times more likely to report experiencing IPV after the HIV diagnosis, compared to those who

knew that they were HIV-positive for 12 months or less before the interview (OR 5.04 , 95% CI 1.32—19.25). Those who experienced IPV prior to HIV diagnosis were 9 times more likely to report experiencing IPV after the HIV diagnosis, compared to those who had not previously experienced IPV (OR 9.01, 95% CI 3.27—24.85).

Table V. Multiple Logistic Regression: Risk factors for Intimate Partner Violence After the time of HIV-Positive diagnosis among women† (N=263*)

| Variable | Odds ratio | 95% CI |
|--|------------|------------|
| time since HIV+ diagnosis, mo | | |
| >12 months vs. 0-12 months | 5.30 | 1.34-20.99 |
| Abuse prior to HIV+ diagnosis | | |
| Yes vs. no | 7.87 | 2.74-22.59 |
| Condom use in the last 6 months | | |
| Ever (Always/Most times/Some times/Rarely) vs. never | 0.53 | 0.12-2.47 |
| Not applicable/not sexually active vs. never | 0.83 | 0.13-5.10 |
| CD4 count | | |
| 200-500 vs <200 | 1.83 | 0.51-6.59 |
| >500 vs. <200 | 2.22 | 0.46-10.82 |

† All participants (women and men) were included in the original analysis but the table was excluded as due to the small number of men reporting IPV, the data overlaps overwhelmingly with the data for women only (ORs are very similar) and are most likely to represent the women in the sample.

*7.7 missing observations

Note. It was preferred to omit p-values from the table and to present odds ratio estimates and 95% CI estimates

Among women, multivariate analysis also showed the risk of intimate partner violence after an HIV-positive diagnosis to be statistically significantly higher among those who knew they were HIV-positive for more than 12 months before the interview and those who experienced IPV prior to HIV diagnosis (Table V). In particular, women who knew they were HIV-positive for more than 12 months before the interview were 5 times more likely to report experiencing IPV after the HIV diagnosis, compared to those who knew that they were HIV-positive for 12 months or less (OR 5.30, 95% CI 1.34—20.99). In addition, women who experienced IPV prior to HIV diagnosis were 8 times more likely

to report experiencing intimate partner violence after the HIV diagnosis, compared to those who had not previously experienced IPV (OR 7.87, 95% CI 2.74—22.59) (Table V).

As mentioned earlier in the methods chapter, multivariate analysis results among men were not reported because they had too low a prevalence of reported intimate partner violence to render these analyses meaningful.

4.7 Adjustment for confounders

4.7.1 Health related factors

Regression analysis to investigate if pain, daily activities and anxiety were confounders in the association between time since diagnosis and IPV revealed that there was less than a 10% change (2.1%, 0.1%, 3.3% change respectively) in the log-odds of duration of time since diagnosis was observed when comparing the crude and adjusted (adjusted for the confounder only) model. This indicates that pain, daily activities and anxiety were not confounders in this association. In addition, multiple logistic regressions did not identify these factors as risk factors for IPV.

Regression analysis to investigate if mobility was a confounder in the same association revealed that there was more than a 10% change (24.6% change) in the log-odds of the duration of time since diagnosis when comparing the crude and adjusted (adjusted for mobility only) model. This indicates that mobility was a confounder in the association.

In addition, multiple logistic regression identified mobility, duration of time since diagnosis, pre-HIV history of IPV as well as condom use as risk factors for IPV after diagnosis among women. In the model, women who had some problems moving around seemed 1.32 times more likely to experience IPV after diagnosis than those who did not have problems moving around — even though this is not definitive due to the wide confidence interval (OR 1.32; 95% CI 0.3-5.98).

4.7.2 Disclosure

Table VI. Crude and adjusted odds ratios for disclosure to a main intimate partner by IPV after diagnosis among women whose disclosure status is known.

| disclosure to partners | Abuse after diagnosis | | Total, % | crude OR | † Adjusted OR |
|------------------------|-----------------------|------------|----------|----------|---------------|
| | yes (n=13) | no (n=119) | | | |
| **Total, % | 9.9 | 90.2 | | | |
| No | 0.0 | 100.0 | 12.1 | 1.00 | 1.00 |
| yes | 11.2 | 88.8 | 87.9 | * | * |

**Total does not add up to 100 because of rounding.

The subanalysis revealed that a large proportion of women (88%) had disclosed their HIV-positive status to their main partner. None of the women who did not disclose their HIV-positive status to their main partner reported experiencing IPV after diagnosis, while a small proportion of women (11%) who disclosed the HIV-positive status to their main partner reported experiencing IPV after diagnosis (Table VI). The association between disclosure to partner and IPV after diagnosis is not significant ($p=0.342$).

Regression analysis to investigate if disclosure was a confounder in the relationship between time since diagnosis and IPV revealed that there was less than a 10% change in the log-odds of time since diagnosis (0.26% change). Disclosure to partners was not a

confounder of this relationship. Multiple logistic regression did not identify disclosure to a partner as a confounder in the relationship.

In a separate analysis confined only to HIV-positive women who disclosed their HIV-positive status to a partner, it was found that the prevalence of IPV among these women before diagnosis was 22%, while that after diagnosis was 12%.

4.8 Sub-analysis for HIV-positive women including only those where the status of the partner was known (positive or negative) versus IPV

Most men (70%) knew their main intimate partner's HIV status (whether HIV-positive or HIV-negative) whereas most women did not (56%). Often men test "by proxy" in South Africa thinking that their status is the same as whatever their partner tested (Personal Communication, D. Cooper, August 1, 2008). Therefore, a sub-analysis for women including only where the status of the main intimate partner was known (HIV-positive or negative) versus IPV was done.

Table VII. Crude and adjusted odds ratio for HIV status of partner by IPV after diagnosis among HIV-positive women in relationships where the status of the partner was known.

| partners HIV status | Abuse after diagnosis | | | | |
|---------------------|-----------------------|--------------|----------|----------|--------------|
| | yes (n=6) | no (n=76) | Total, % | crude OR | †Adjusted OR |
| **Total, % | 7.2 | 91.6 | | | |
| HIV- | 0.0 | 100.0 | 27.7 | 1.00 | 1.00 |
| HIV+ | 10.0 | 88.3 | 72.3 | * | * |

*zero cell was present, and so could not answer this question.

† adjusted for time since HIV-positive diagnosis, pre-HIV history of IPV, condom use and CD4 count.

** Total does not add up to 100 because of missing observations.

The sub-analysis revealed that none of the HIV-positive women in sero-discordant couples where the man was HIV-negative reported experiencing IPV after diagnosis, while a small proportion of HIV-positive women (10%) in sero-concordant couples where the man was also HIV-positive reported experiencing IPV after diagnosis (Table VII). There was no significant association between women where the status of the partner was known and IPV after HIV diagnosis ($p=0.257$).

4.9 Multivariate analysis excluding those who did not have a main intimate partner

When multivariate analysis was confined only to those who had a main intimate partner, the directions of the associations and their statistical significance were similar to those in the main analysis for all participants and women only. It was not possible to report on multivariate analysis among men, as the numbers were too small.

Table VIII. Multiple logistic Regression: Risk factors for Intimate Partner Violence after the time of HIV-Positive diagnosis among women† (N=222*)

| Variable | Odds ratio | 95% CI |
|--|------------|-------------|
| time since HIV+ diagnosis, mo | | |
| >12 months vs. 0-12 months | 4.56 | 1.09-19.13 |
| Abuse prior to HIV+ diagnosis | | |
| Yes vs. no | 14.81 | 4.09-53.66 |
| Condom use in the last 6 months | | |
| Ever (Always/Most times/Some times/Rarely) vs. never | 0.48 | 0.10- 2.31 |
| Not sexually active vs. never | 3.59 | 0.41- 31.07 |
| CD4 count | | |
| 200-500 vs <200 | 1.66 | 0.39-6.98 |
| >500 vs. <200 | 2.38 | 0.43-13.07 |

† All participants (women and men) were included in the original analysis but the table was excluded as due to the small number of men reporting IPV, the data overlaps overwhelmingly with the data for women only (ORs are very similar) and are most likely to represent the women in the sample.

* 6% missing observations

Note. It was preferred to omit p-values from the table and to present odds ratio estimates and 95% CI estimates

In the subsequent chapter, an interpretation and discussion of the results presented above in the context of existing literature will be provided.

5 CHAPTER V: DISCUSSION, RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

This chapter discusses the results provided in chapter four. The results include: sample characteristics disaggregated by sex, the experiences of IPV disaggregated by sex, the reasons for the experience of IPV after an HIV-positive diagnosis disaggregated by sex and the factors associated with IPV after an HIV-positive diagnosis disaggregated by sex. Chapter five also presents a review of the hypotheses, identification of study limitations and strengths, recommendations and a conclusion.

5.2 Reviewing hypotheses and key results

The study sample comprising 459 HIV-positive individuals, 62% who are women and 38% who are men, is in keeping with the proportions of HIV-positive women and men presenting for HIV care at public sector health care facilities^h.

The study finding that six percent of clients had experienced IPV after an HIV-positive diagnosis, with HIV-positive women reporting approximately 4 times as much IPV as HIV-positive men, indicates that as in the general population IPV is a gendered issue among people living with HIV/AIDS. This finding mirrors international literature among

^h A greater proportion of women compared to men (ratio of approximately 3:1) attend public sector health care facilities in Cape Town.

the general population that shows that women bear a disproportionately heavy burden of intimate partner violence (Heise and Garcia-Moreno, 2002; Garcia-Moreno et al., 2006).

5.2.1 Intimate partner violence against women and HIV/AIDS

The study found that the prevalence of IPV among HIV-positive women was similar to that among the general population of women in three provinces who are either HIV-negative or HIV-unknown status, 26% vs 25% (Jewkes et al., 2002). The findings of this research therefore do not support a hypothesis of an increase in prevalence of IPV among HIV-positive women. Both populations appear to have similar factors associated with IPV, such as factors related to gender inequality in society, factors related to the normative use of violence to resolve conflicts or as part of an expression of male power over women (Jewkes et al., 2002). In addition, some other factors (factors related to HIV, for example) may play a role or trigger IPV among HIV-positive women, but do not increase its overall prevalence. While the prevalence of IPV in a general population of women in three provinces and this female population may be similar, the comparison is limited because of differences in the measurement of IPV. Our study identified IPV with a single question that attempted to capture more than one type of violence, while the other study identified IPV using very specific questions. Therefore, it is possible that the question used to identify IPV in our study could not have captured all the IPV in this population, as IPV was not the main focus of the study.

The above mentioned finding is consistent with some international studies (Cohen et al., 2000; Gruskin et al., 2002; Koenig et al., 2002) and inconsistent with others (van der

Straten et al, 1998; Zierler et al., 2000; Maman et al., 2002). Possible explanations for these differences in prevalences among the general population and HIV-positive population between studies may be due to differences in study timeframes, settings or contexts, study populations, sources of data, definitions of IPV and the willingness of the female respondents to talk openly and honestly about their experiences of IPV (Heise and Garcia-Moreno, 2002). In order to address the limitations future studies need to ensure that data on IPV is more comparable methodologically (Heise and Garcia-Moreno, 2002). For example, the World Health Organisation (WHO) have developed methods for research on IPV (Garcia-Moreno, 2006), and so future studies should use these methods to ensure data comparability and quality.

The finding that women who experienced IPV before an HIV-positive diagnosis were 8 times more likely to experience IPV after diagnosis compared to those who did not experience IPV, suggests a substantial association between having a pre-HIV history of IPV and the likelihood of IPV after an HIV-positive diagnosis. The confidence interval is too wide to rule out the possibility of a less but still significant association (OR=2.74). Hence, our findings confirm a tendency for previously existing patterns of violence to persist in intimate relationships after an HIV-positive diagnosis. In addition, other studies in the USA among HIV-positive women and the general population of women have also found that having a prior history of IPV is a risk factor for future experience of IPV (Gielen et al., 2000; Tjaden and Theonnes, 2000; Crandell et al., 2004; Heise and Garcia-Moreno, 2002). Thus, the pattern of IPV in the general population of women

mirrors the pattern among HIV-positive individuals. The key difference is that HIV related factors may trigger the future experience of IPV in an HIV-positive population.

5.2.2 Reasons for intimate partner violence against women

This study found that HIV-positive women who experienced IPV were more likely to experience violence related to other issues than related to HIV. These findings do not support a hypothesis of HIV-infection being a primary self-perceived reason for IPV among women living with HIV. A possible explanation for this may be that in this population of South African women, HIV per se, does not appear to be the key trigger for IPV, but other issues related to gender inequality in society, male expression of power over women and the normative use of violence to resolve conflicts may either overlap or outweigh HIV-related factors (Jewkes et al., 2002 and Heise and Garcia-Moreno, 2002). The above mentioned finding is consistent with international literature (Vlahov et al., 1998; Gielen et al., 2000; Cohen et al., 2000; Zierler et al., 2000; Gruskin et al., 2002; Koenig et al., 2002; Koenig and Moore, 2000). Other studies among the general population of women elsewhere in Africa found similarly that women were less likely to experience IPV triggered by factors related to HIV than other issues (Koenig et al., 2003). However, while in this population of South African women HIV infection is not the key trigger for IPV, is nevertheless an important factor that emerges as one of the reasons for IPV in an HIV-positive population. While a minority (8%) of HIV-positive women experienced IPV after diagnosis, and nearly a third (32%) attributed it to HIV-

related factors, it is important to recognize the occurrence of IPV triggered by HIV-related factors among women living with HIV/AIDS and address this issue through screening and interventions. Others have also highlighted the importance of examining whether women experience IPV triggered by HIV-related factors among HIV-positive populations (Koenig and Moore, 2000). They point out that male partners may respond violently towards their HIV-positive female partners following a disclosure event when they believe their partner has been unfaithful, due to concern of HIV-infection or when they feel ashamed and stigmatized by being associated with an HIV-positive partner. However, in this study as no information was collected on the nature of HIV-related triggering events, it was not possible to gain further insights into this issue. A further qualitative study may help address this limitation.

5.2.3 Factors associated with intimate partner violence against women

Duration of time since diagnosis

The study found that women who were aware of their HIV-positive status for more than 12 months were 5 times more likely to have experienced IPV after an HIV diagnosis, compared to those more recently diagnosed. This finding suggests a substantial association between having longer time duration since diagnosis and greater likelihood of IPV after HIV-positive diagnosis among women. However, the CI is too wide to rule out the possibility of a less substantial, only minimally significant association (OR=1.34). There may be several explanations for the greater likelihood of IPV among HIV-positive women less recently diagnosed. Firstly, a possible explanation may be one put forward by Galvin et al. (2004) that progressing illness may create relationship strain and

increased vulnerability that would increase the likelihood of IPV among HIV-positive individuals. Secondly, the association may have been confounded by disclosure. We measured disclosure to partners, and so we can examine this possibility with the data. Univariate analysis found that the majority of women (88%) had disclosed their HIV-positive status to their main intimate partner. Regression analysis revealed that disclosure to a main intimate partner was not a confounder in this relationship. Therefore, disclosure is less relevant in illuminating why greater time since diagnosis is associated with more IPV after diagnosis. In this instance, the timing of disclosure would have been more relevant. Other studies have suggested that IPV related to disclosure may occur immediately (Mathews et al., 1999; Gielen et al., 2000; Finney and Njoko, 2000) or at a later stage (Gielen et al., 2000). However, we did not collect information on the timing of the disclosure, as IPV was not the key focus of this particular study. Hence, it is impossible to establish whether time of disclosure is an important confounder in this relationship. Further research is required to determine whether this may explain the increased likelihood of IPV among HIV-positive women less recently diagnosed. Thirdly, the association may be partly due to health-related factors. Besides self-reported clinical characteristics of HIV disease (CD4 count, for example), we measured self-reported health-related quality of life (pain, for example), and so we can examine this possibility with these data. CD4 cell count was already found to be a confounder for the association between longer duration of time since diagnosis and greater likelihood of experiencing IPV among women. Regression analysis revealed that pain, daily activities, anxiety were not confounders in this association. Thus, it remains to be determined whether pain, daily activities or anxiety (as measures of self-reported health-related quality of life) might

explain the association between longer duration of time since diagnosis and greater likelihood of experiencing IPV among women. However, regression analysis revealed that mobility was a confounder in the association. In addition, a model was computed adding previous independent variables followed by the mobility variable. In this model, mobility was found to be a confounder in the association. Thus, mobility (as a measure of self-reported health-related quality of life) may be a partial explanation.

The multiple logistic regression results reveal that time since HIV diagnosis may be an important factor in influencing IPV in this context. On the other hand we might argue that the issue of time since HIV diagnosis may not be so important after all, as it only affected IPV for reasons not related to HIV. In addition, the wide confidential intervals for this variable and the lower end being close to 1 may mean this is a chance finding. Further research is needed in this area.

Health Status

Women who were healthier, measured by CD4 cell count, seemed more likely to experience IPV after an HIV diagnosis than those with the lowest CD4 count, but the study is not definitive (i.e. CIs are too wide to rule out the possibility of no association or a protective association). This seems to indicate that it is not the strain of a person getting sicker (although this may play some role), but some other factors that trigger IPV. South Africa is known to be a generally violent nation. Studies on working men in Cape Town, South Africa, show that; male views supportive of women's inferiority in relationships, male alcohol abuse, male sexual behavior, as well as the normative use of

violence to resolve conflicts either, in relationships or in other settings (e.g. in communities, at the workplace) are major factors for men's use of violence in relationships (Abrahams et al., 2004; Abrahams et al., 2006). Therefore, we postulate that similar factors may trigger IPV against HIV-positive women in our study population. As IPV was not the key focus of this particular study, we did not measure these factors, and so we can only postulate what might be the case. Further research among male partners or HIV-positive women (including relationship and partner characteristics) should be explored to confirm or refute this postulation, and establish what other factors trigger IPV in the HIV-positive population of this area.

This particular finding contradicts the finding of longer time since diagnosis being associated with more IPV, suggesting that the strain of a person getting sicker may trigger IPV against HIV-positive women. This contradiction may be explained by using measures of health status other than CD4 cell count to investigate whether health status influences the occurrence of IPV. As mentioned earlier, we also measured self-reported health-related quality of life in our study, and so these variables may help explain the role of health status among this group of HIV-positive women. In addition to the main analyses, a model was computed adding previous independent variables followed by these variables. In this model, mobility, duration of time since diagnosis, pre-HIV history of IPV as well as condom use were found to be risk factors for IPV after diagnosis among women. In particular, women who had some problems moving around seemed 1.32 times more likely to experience IPV after diagnosis than those who did not have problems moving around — even though this is not definitive due to the wide confidence

interval (OR 1.32; 95% CI 0.3—5.98) (not shown). This seems to indicate that the strain of getting sicker may trigger IPV. However, the study remained unclear on the relationship between IPV and health status of HIV-positive women. Compared to the our study finding, other studies from the USA have found definitive results on the association between health and IPV among HIV-positive women (Vlahov et al., 1998; Zierler et al., 2000; Gruskin et al. 2002; Galvin et al., 2004). A possible explanation for the discrepancy in studies is that the sample size in our study is too small to detect any significant effect. Further research, using a larger sample size, is needed to reach definitive conclusions on the role of health status in the experience of IPV after an HIV-positive diagnosis among South African women living with HIV/AIDS.

Condom use

The study found that HIV-positive women who had never used condoms seemed more likely to experience IPV after an HIV-positive diagnosis than those who had ever used condoms — even though not definitive due to wide CI. Perhaps women who never used condoms had abusive male partners who imposed such risky sexual practices. Being faced with an HIV-positive diagnosis, indicating the desirability of safer sex, may trigger IPV in some instances. Studies in South Africa, suggest that women in abusive relationships are less likely to practice safer sex and thus are more likely to be at risk of HIV-infection (Petifor et al., 2004; Dunkle et al., 2004). Other studies elsewhere have also suggested that women in abusive relationships are less likely to practice safer sex (Wingood and DiClemente, 1997, Koenig and Moore, 2000). For example, a study conducted among 165 African-American women in San Francisco, USA, found a strong

association between having a physically abusive male partner and decreased condom use (Wingood and DiClemente, 1997). Evidence indicates that the particular population in US study is most affected by HIV and is at risk for both contracting HIV and experiencing IPV (Koenig and Moore, 2000; Raiford et al., 2007).

In addition, the study found that among the 8% of HIV-positive women who experienced IPV after diagnosis, 9% attributed this to actual negotiation of condom use (not shown). This finding suggests that screening and interventions are necessary to establish risk in this area. Reports from elsewhere in Africa among HIV-positive women (van der Straten et al., 1998) and the general population of women (Koenig and Moore, 2000; Koenig et al., 2003) have also found that discussing condom use triggers IPV. One study in Rwanda, Africa, indicated that HIV-positive women whose partners were uninfected with HIV may be at an increased risk for physical violence when they try to negotiate condom use with their partners compared to those whose partners were infected with HIV or those where the status of the partner was unknown (van der Straten et al., 1998). Thus, the finding confirms that discussing condom use triggers IPV among some South African HIV-positive women.

Disclosure

In our study, a small proportion of women (12%) had not disclosed their HIV-positive status to their main intimate partner. This finding indicates that a small but important proportion of women choose not to disclose their HIV-positive status to main partners. Screening and counselling interventions are necessary for this core group of women, to help encourage the safe disclosure of their status to their intimate partner. Violence, fear

of violence, fear of abandonment and fear of blame are only few of the reasons why women may not disclose their HIV-positive status to their intimate partners (Koenig and Moore, 2000; World Health Organisation, 2003).

While fear of violence is one of the barriers to HIV-positive status disclosure, the study found that a small proportion of women (11%) who had disclosed their HIV-positive status to their main partner reported experiencing IPV after diagnosis. Among these 13 (11%) women, 4% attributed this to HIV and the remaining 7% attributed this to other issues (not shown). This finding indicates that factors related to disclosure may trigger IPV among some HIV-positive women. Screening and interventions are necessary to establish risk for IPV related to disclosure. In addition, counsellors have to help these women deal with this abuse and develop safety strategies. The true proportion of HIV-positive women at risk of IPV related to disclosure may be higher because we do not know if some women would have experienced IPV if they had disclosed their HIV-positive status to their main partner (Koenig and Moore, 2000).

Because our study did not find disclosure to partners to be a risk factor for IPV, we cannot comment on the role of disclosure in the risk of IPV among this group of South African women living with HIV/AIDS. However, if we confine the analysis only to women who disclosed their HIV-positive status to partners, our study findings of prevalence of IPV among these women before diagnosis (22%) compared to that after diagnosis (12%), suggests that while disclosure of HIV-positive status may trigger IPV, it does not increase the overall prevalence of IPV after an HIV-positive diagnosis.

Therefore, these findings do not support a hypothesis of disclosure of HIV test results to partners being the primary risk factor for IPV after diagnosis with HIV. A study in the USA, which used a different method, also found that disclosure did not increase risk of IPV among HIV-positive women (Zierler et al., 1998). Information was collected on the proportion of HIV-related violence in relation to duration of time since diagnosis. It was assumed that women who had experienced HIV-related violence had disclosed their HIV-positive status. It was further assumed that disclosure in relationships would occur in the first year following diagnosis, and thus women were more likely to experience HIV-related violence in the first year after diagnosis than in the subsequent years since diagnosis (Zierler et al., 2000). As IPV was not the focus of our study, no information was collected on the proportion of HIV-related violence in relation to the timing of disclosure, and thus we cannot determine whether disclosure increases risk of IPV using the method in this other study.

Partner HIV status

The sub-analysis revealed that HIV-positive women in sero-concordant couples were the most likely to experience IPV. The prevalence of reported IPV in these relationships was 10% compared to no IPV reported in sero-discordant couples where the women was HIV-positive and the man was HIV-negative. The prevalence of IPV among HIV-positive sero-discordant couples where the man was HIV-negative (0%) was lower than that found among similar couples in a multi-country study by Grinstead et al. (2001) (13%). The differences in prevalences between studies may be real, with men in our study perhaps blaming their female partners for their HIV-positive diagnosis. However, it

may also be due to differences in study time frames, contexts, study populations, sources of data, definitions of IPV and the willingness of female respondents to talk openly about their main intimate partner's HIV status (Heise and Garcia-Moreno, 2002). Once again, in order to address these limitations future studies need to ensure that data on IPV is more comparable (Heise and Garcia-Moreno, 2002).

At the multivariate level, the study remained unclear on whether the HIV status of the intimate partners of HIV-positive women influences the occurrence of IPV.

Multivariate analysis confined only to those with a main partner

The findings of the analysis were similar to the main analysis. Therefore, the interpretations of the results are also similar.

5.2.4 Prevalence of Intimate partner violence against men

Determining IPV among heterosexual HIV-positive men is an important and innovative feature of this study. The level of IPV after an HIV-positive diagnosis was 2% in our study population. This was lower than was reported in the USA among heterosexual men (7.5%) (Zierler et al., 2000). A possible explanation may be that men in our society are more patriarchal and dominant, and therefore less likely even when HIV-positive to experience abuse from an intimate female partner. It is not possible to compare the prevalence of IPV among HIV-positive men in this study with that of the general population of men or other groups of HIV-positive men, as no comparative South African data is available from the general population and or an HIV-positive population of men.

In strong contrast to women, no men reported experiencing IPV both before and after an HIV-positive diagnosis. An identical proportion (2%) of men reported experiencing IPV only either before or only after an HIV-positive diagnosis. However, the true prevalence of IPV among men may be higher due to under-reporting. Shame, fear of ridicule, and cultural and societal expectations of the masculine ideal are only a few of the reasons why heterosexual men may not report experiences of IPV (Lucas, 2006).

5.2.5 Reasons for intimate partner violence against men

The finding that 2% of HIV-positive heterosexual men experienced IPV after diagnosis, with half attributing this to HIV-related factors, suggests that screening and interventions are necessary for this group of men.

5.2.6 Factors associated with intimate partner violence against men

It was not possible to compare factors associated with IPV among HIV-positive men with that of other studies, as due to the low reported prevalence of IPV, the sample size was too small to determine meaningful associations among men in this study.

5.3 Strengths and limitations of the study

Before discussing the strengths and limitations of the study, it is important to bear in mind that IPV was not the main focus of the broader study and therefore the information collected on this was limited.

There are several limitations in this study. While the sample was representative of HIV-positive men and women in care, it may not be generalisable to those not receiving HIV care or also are receiving HIV care in the private sector. Hence, the results can only be generalised to HIV-positive men and women receiving HIV care and antiretroviral (ARV) treatment at public sector health primary level care facilities in Cape Town. Additionally, it is generally known that multivariate analysis selects records with complete information on the variables included in the model (Delgado-Rodriguez and Liorca, 2004). Selection bias in this study therefore may have been introduced through multivariate analysis since the participants with complete information may not have been representative of the target population (Delgado-Rodriguez and Liorca, 2004). Also, no information was collected on whether participants differed from non-participants. Thus, there is no way of knowing whether selection bias (in particular, non-response bias) may have been introduced in this way (Delgado-Rodriguez and Liorca, 2004). However, the response rate for male and female respondents (90 and 88% respectively) was considered acceptable (Nglazi et al., 2007). Hence, it is unlikely that this had much impact on bias.

In addition to selection bias, information bias may have occurred in this study. Recall bias is a concern in any cross-sectional study that is based on interviews. For example, this study relied on the recall of both the experience of intimate partner violence and date of HIV-positive diagnosis among HIV-positive men and women. However, this bias may have been minimal considering that these types of experiences are likely to be of great importance in the participants' lives and thus reporting could be reasonably accurate

(Gielen et al., 2000). Moreover, under-reporting bias may have occurred because intimate partner violence is a sensitive issue (Koenig et al., 2003). Additionally, no information was collected on the frequency and severity of IPV or its potential harmful consequences. Thus, by using a dichotomous yes/no variable to measure violence, differences in violence exposure among men and women may have been underestimated (Galvin et al., 2004). Furthermore, no information was collected on the prevalence of the different types of IPV, rather a dichotomous yes/no variable was used to measure IPV. This may have biased the results since it would not be known which type of IPV is more prevalent than the other in this sample. For example, it is not known whether the level of physical violence was higher than the level of sexual and emotional violence in the sample. This could be a reason why no association was found between IPV and most of the other factors. It could also have led to an undercount of the prevalence of IPV in this study.

Due to the very low prevalence of intimate partner violence among men, the sample was too small to detect valuable information on risk factors for violence. Similarly, the low prevalence of intimate partner violence among women resulted in the sample being small in detecting a significant association between CD4 count and IPV and in addition condom use and IPV. Further quantitative research focusing on IPV and HIV, using larger sample sizes, is needed to address these limitations.

A further limitation was because this was a cross-sectional rather than a cohort study participants may not have yet felt sufficient trust to disclose incidents of violence to

interviewers as they may have in a cohort study. Finally, the cross-sectional design of this study does not allow one to infer a casual relationship between variables. For example, the study found a link between women having a history of IPV before HIV diagnosis and risk of IPV after HIV diagnosis and the link between a longer time having elapsed since diagnosis among women and risk of IPV after HIV diagnosis. Other observational studies (such as cohort studies) are warranted, using larger sample sizes, to clearly establish if these relationships are causal.

Notwithstanding these limitations, this study has several strengths. Firstly, this study focused on both intimate partner violence perpetrated by men against women and intimate partner violence perpetrated by women against men. Therefore, allowing information on the experience of violence to be disaggregated by sex. Whereas, in most other studies, information on the experience of violence was collected among women only (Gielen et al., 2000). Secondly, this study collected information on whether there was a history of violence prior to HIV-positive diagnosis. Thus, it is one of the few studies that allow investigation of whether an HIV-positive diagnosis leads to the onset of violence for the first time or previously existing patterns of violence persist. Finally, the sample size was sufficient to detect a significant association between intimate partner violence prior to HIV-positive diagnosis and violence after the HIV-positive diagnosis, in multivariate analyses among all participants and among women only. It was also sufficient to detect a significant association between time since HIV-positive diagnosis and intimate partner violence after the HIV-positive diagnosis. In addition, the study presents novel data on men living with HIV and IPV.

5.4 Conclusion and Recommendations

The following are key intervention, policy, health programme and research recommendations:

Improving ongoing interventions

Currently, counseling and service interventions for sexual and reproductive health needs, based on clients' personal situations, are being developed. These will be implemented and evaluated as to whether or not these interventions better meet the reproductive healthcare needs of HIV-infected clients within public sector HIV care services (Nglazi et al., 2007).

Findings from this study have important implications for healthcare providers. The data suggest that some HIV-positive women experience IPV after HIV diagnosis, with a larger proportion experiencing IPV related to other issues, with a small but important proportion experiencing IPV related to their HIV-positive status. In addition, the data suggest that some HIV-positive men experience IPV after diagnosis, with equal proportions experiencing IPV related to other issues and IPV related to their HIV-positive status.

There is, therefore, the need for appropriate screening, treatment and care, and referrals to services for people who experience IPV related to either their HIV-positive status or other reasons, to be incorporated into the ongoing counseling and service interventions targeted towards people living with HIV /AIDS. For instance, HIV-positive individuals need on-site services such as screening for IPV and counselling, intervention and action

plans and referrals if this arises (if abuse is ongoing or for future abuse). Staff working in HIV care need training in awareness and detection of IPV and how to deal with this in order to integrate this into care of their patients. Finally, as the study shows, IPV prior to HIV diagnosis was the most likely predictor of IPV post diagnosis. Hence most importantly for women who are HIV positive, negative or of unknown status, screening and interventions critically need occur in general services. As abuse may continue, however, there needs to be a continuum of these services into HIV care as well.

Moreover, the data suggest that a history of violence before HIV diagnosis, a longer length of time having elapsed since diagnosis (that may act as a proxy for other factors), condom use and a higher CD4 cell count (as a measure of state of health) may be risk factors for violence after diagnosis among women living with HIV/AIDS. Screening clients for these risk factors may help providers to anticipate and counsel regarding potential intimate partner violence among people living with HIV/AIDS (Nglazi et al., 2007). In addition, identifying such clients may enable providers to assist them in developing appropriate safety plans (Mathews et al., 2005).

Health programmes

The findings of this study have potentially important implications for programmes aimed at preventing and dealing with IPV among HIV-positive individuals. The findings suggest that as in the general population of women interventions aimed at addressing the unequal power relations between men and women may reduce the levels of IPV against HIV-positive women (Mathews et al., 2005).

Policy

The findings of this study also have potential implications for policy makers. The study found that the level of IPV among HIV-positive women is similar to that among the general population of women in 3 provinces of South Africa. This indicates that the burden of IPV among HIV-positive women is comparable to that among women of the general population. There is need for policy makers to continue taking into account IPV against women and note the specific factors related to IPV in an HIV-positive population in developing HIV care policies.

Further research

This research provides some initial information on a group of HIV-positive South African women's and men's experience of IPV. This study determined if IPV occurs after testing HIV-positive and whether this violence is due to HIV-related factors. Other studies are warranted, to answer questions raised by this study that are inconclusive.

In conclusion, this study has shown that HIV-positive women bear a burden of IPV comparable to that among the general population of women. This study has also begun to recognise the occurrence of IPV among HIV-positive men. Moreover, this study has shown that IPV among PLWHA is mostly related to other issues rather than to being HIV-positive, while it may also be triggered by HIV-related factors. This study has re-affirmed that IPV after HIV diagnosis among HIV-positive women is related to having a history of IPV before diagnosis possibly longer time having elapsed since diagnosis.

Accordingly, health care providers, policy makers and health programme developers must use this information to address IPV among people living with HIV/AIDS. Additional studies are needed to clarify the suggested link between women having a history of IPV and risk of IPV after HIV diagnosis and the link between longer duration of time having elapsed since diagnosis among women and risk of IPV after HIV diagnosis in this study. While this study presents novel data on men living with HIV and IPV, it constitutes preliminary research and more focused in-depth research is needed. For example, further research is needed to identify more accurate prevalences among HIV-positive women and men and to identify risk factors of IPV among HIV-positive men as well as more risk factors of IPV among HIV-positive women.

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APPENDIX

| # | Item | Coding | Skip |
|---|--|---|------|
| 74 | Other household members other than family? Abanye abantu ohlala nabo ekhaya? | Yes=1 No=0 Not applicable = 3 | |
| 75 | Friends? Abahlobo? | Yes=1 No=0 | |
| 76 | Other members of your community? [Abantu abangabanye basekuhlaleni?] | Yes=1 No=0 | |
| 77 | Health care providers other than those giving you HIV care or treatment? [Abanikezi boncedo lwezempilo?] | Yes=1 No=0 | |
| 78 | Other people? [Abanye abantu?] Specify: _____ | Yes=1 No=0 | |
| 79 | How did most people, other than the health care providers, react when you first told them that you were HIV positive? (read all options) [Ucinga ukuba abantu abaninzi, ngaphandle kwabasebenzi bezempilo, babonakalise ntoni xawawuqala ukubaxelela ukuba usuleleke yintsholongwane kaGawulayo?] | Very positive=1 Mostly positive=2 Mixed/neutral=3 Negative=4 Very negative=5 Don't know=9 | |
| 80 | Think about before you were HIV-positive, did you ever suffer emotional, physical or sexual abuse from a partner? [Cinga ngaphambi kokuba ubene ntsholongwane kaGawulayo, wakhe wazifumana uhlukunyazwa ngokwasemphefumleni, ngokwasemzimbeni okanye ngokwesondo liqabane owawunalo?] | Yes = 1 No = 2 | |
| 81 | Think about after you have been HIV-positive have you ever suffered emotional, physical or sexual abuse from a partner? [Cinga emva kokuba ubene ntsholongwane kaGawulayo, wakhe wazifumana uhlukunyazwa ngokwasemphefumleni, ngokwasemzimbeni okanye ngokwesondo liqabane owawunalo?] | Yes = 1 No = 2 Unsure = 9 NB IF PARTICIPANT ANSWERS YES, TO 79 AND/OR 80 REMEMBER TO ASK IF WOULD LIKE TO SPEAK WITH SOMEONE ABOUT THIS AND ADOPT REFERRAL PROCEDURES | |
| 82 | If yes, was this because of. (Read out all options. Circle all that apply) [Ukuba ewe, kwakenzeke ngenxa: | Your HIV status = 1 Discussing contraception=2 Discussing condom use = 3 Discussing having children=4 Other = 5 Unsure=9 | |
| 83 | Do you think that you can look forward to the future? Ucinga ukuba wena unokujonga ngethemba kwixesha elizayo? | Yes=1 No=0 Don't know = 9 | |
| <p>Current fertility intentions Now I would like to ask you some questions about having a child/children [Ngoku ndingathanda ukukubuza imibuzo malunga nokuba nomntwana / abantwana]</p> | | | |
| 84 | Think about before you were HIV-positive, what were your views about having a child/more children? [Cinga ngaphambi kokuba ubene ntsholongwane kaGawulayo, zazisithini iimbono zakho ngokuba nomntwana / abanye abantwana?] | BRIEFLY Describe | |
| 85 | Think about now, which of the following statements best describes your thinking about you / your main partner having a child? (Read all options, circle one only) IF CURRENTLY PREGNANT ASK ABOUT THE FUTURE 1. I want to have a child <u>right now</u> 2. I may want to have a child <u>in the next 12 months</u> 3. I may want to have a child <u>sometime in the future</u> 4. I have decided that I <u>do not want to have a child</u> in the future 5. I do not know / am unsure about whether I may want to have a child in the future [Cinga ngokwangoku, ngowupi kule migca ilandelayo ocacisa ngcono ingcinga zakho / zeqabane lakho ngokuba nomntwana / abantwana? (Funda zonke anokukhetha kuzo, ukhethe ibenye)] 1. Ndifuna ukuba nomntwana <u>ngoku</u> 2. Ndifuna ukuba nomntwana <u>kwinyanga ezi12 ezizayo</u> 3. Ndingafuna ukuba nomntwana <u>ngelinye ihuba kwixesha elizayo</u> 4. Ndigqibe ekubeni <u>andfuni kubanamntwana</u> kwixesha elizayo 5. Andiyazi / andiqinisekanga nokuba ndingafuna ukuba nomntwana kwixesha elizayo | Enter 1-5 | |