SEXUAL VIOLENCE AND CORRELATES AMONG WOMEN IN HIV DISCORDANT UNION, UGANDA

by

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We sought to estimate the prevalence of sexual violence and sexually transmitted diseases (STDs), identify risk factors for sexual violence and STDs among women in Human Immunodeficiency Virus (HIV) discordant unions, and investigate the lived experiences of sexual violence among women in HIV discordant unions attending post-test club services at AIDS Information Centers (AICs) in Uganda.

We carried out a prospective cohort study of women in HIV discordant and HIV negative concordant unions after disclosure of their HIV serostatus. We estimated prevalence of STDs in the two study cohorts and compared them for occurrence of risk factors for sexual violence and STDs. We then investigated the lived experiences of sexual violence by selected women in HIV discordant unions attending AIC post-test club services in Uganda. Prevalence of sexual violence among women in HIV discordant unions was similar to that among women in HIV negative concordant unions. Risk factors for sexual violence among women in HIV discordant union were: low education level, transactional sex, prior experience of sexual violence, history of STDs, having other sexual partners, history of alcohol use. Prevalence of STDs was higher among women in HIV discordant unions compared to those in HIV negative concordant unions.
None of the risk factors for STDs mentioned in literature were associated with STDs among women in HIV discordant unions. There was no association between STDs among women in HIV discordant unions and reported experience of sexual violence. Use of physical force and verbal threats were the most common forms of sexual violence, which evoked diverse reactions and feelings, including concern about premature death, fear of infection, desire to separate, helplessness, anger and suicidal tendencies. Alcohol abuse by the male partners was a major factor exacerbating sexual violence.
DEDICATION

I dedicate this dissertation to my parents, Sylvester and Imelda Emusu, my wife Cecilia, my daughter Vanessa, and my son Aaron. I love you all.
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TABLE OF CONTENTS

| ABSTRACT .................................................................................................................. ii |
| DEDICATION ............................................................................................................... iv |
| ACKNOWLEDGEMENTS ................................................................................................ v |
| LIST OF TABLES ......................................................................................................... viii |
| LIST OF FIGURES ....................................................................................................... ix |
| INTRODUCTION .......................................................................................................... 1 |

- HIV/AIDS Situation in Uganda .................................................................................. 2
- HIV-serodiscordance ................................................................................................. 3
- Prevalence of Sexual Violence .................................................................................. 5
- Consequences of Sexual Violence ........................................................................... 7
- Direct HIV Transmission through Sexual Violence ............................................... 8
- Indirect HIV Transmission through Sexual Violence ............................................ 8
  - Sexual Abuse, Drug Use, and HIV Risk .................................................................. 8
  - Sexual Abuse, Sexual Adjustment, and HIV Risk ............................................... 9
  - Sexual Abuse, Psychopathology, and HIV Risk ................................................... 10
  - Social, Economic, and Cultural Link between Sexual Violence and HIV Risk ...... 12
- Study Significance ................................................................................................... 15
- Research Questions and Study Aims ...................................................................... 16
- Specific Aims ............................................................................................................ 17
- Study Hypotheses ...................................................................................................... 17
- Materials and Methods ............................................................................................ 18
  - Specific Aim 1 ........................................................................................................ 18
  - Specific Aim 2 ........................................................................................................ 23
  - Specific Aim 3 ........................................................................................................ 27
  - Specific Aim 4 ........................................................................................................ 29
- Conceptual Model of Sexual Violence and HIV Risk in Uganda ......................... 31

PREVALENCE OF SEXUAL VIOLENCE AND RISK FACTORS AMONG WOMEN IN HIV DISCORDANT UNION, UGANDA .................................................. 35

PREVALENCE OF SEXUALLY TRANSMITTED DISEASES AND RISK FACTORS AMONG WOMEN IN HIV DISCORDANT UNION, UGANDA ............................. 61
APPENDIX

A  INSTITUTIONAL REVIEW BOARD APPROVAL FORM............................... 120

B  QUESTIONNAIRE ON SEXUAL VIOLENCE AND CORRELATES
AMONG WOMEN IN HIV DiscordANT UNION SEEKING VCT
SERVICES AT AIC ........................................................................................... 122

C  LABORATORY DATA EXTRACTION FORM ............................................. 130

D  INTERVIEW GUIDE QUESTIONS................................................................. 132
**LIST OF TABLES**

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREVALENCE OF SEXUAL VIOLENCE AND RISK FACTORS AMONG WOMEN IN HIV DISCORDANT UNION, UGANDA</td>
<td></td>
</tr>
<tr>
<td>1 Selected sociodemographic characteristics of women, by HIV serostatus</td>
<td>47</td>
</tr>
<tr>
<td>2 Risk factors for sexual violence for women in HIV discordant and HIV negative concordant unions</td>
<td>49</td>
</tr>
<tr>
<td>3 Adjusted estimates for the association between risk factors for sexual violence and HIV discordance during a 4-month period after disclosure of their HIV test results</td>
<td>51</td>
</tr>
<tr>
<td>PREVALENCE OF SEXUALLY TRANSMITTED DISEASES AND RISK FACTORS AMONG WOMEN IN HIV DISCORDANT UNION, UGANDA</td>
<td></td>
</tr>
<tr>
<td>1 Selected sociodemographic characteristics of women, by HIV serostatus</td>
<td>72</td>
</tr>
<tr>
<td>2 Risk factors for sexually transmitted diseases among women tested for <em>T. vaginalis</em></td>
<td>74</td>
</tr>
<tr>
<td>3 Adjusted estimates for the association between risk factors for sexually transmitted disease and HIV discordance</td>
<td>75</td>
</tr>
<tr>
<td>EXPERIENCE OF SEXUAL VIOLENCE AMONG WOMEN IN HIV DISCORDANT UNION AFTER VOLUNTARY HIV COUNSELING AND TESTING: A CRITICAL INCIDENT TECHNIQUE ANALYSIS</td>
<td></td>
</tr>
<tr>
<td>1 Interview Guide Questions</td>
<td>89</td>
</tr>
<tr>
<td>2 Demographic Characteristics of the Participants</td>
<td>91</td>
</tr>
<tr>
<td>3 Summary of Themes and Related Categories</td>
<td>92</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34</td>
</tr>
</tbody>
</table>

## INTRODUCTION

1. Conceptual model ........................................................................................................ 34
INTRODUCTION

Sexual violence is a serious public health problem that affects millions of women worldwide (World Health Organization [WHO], 2002). Sexual violence is an important component of domestic violence (WHO, 2002) and has been linked to risk for Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) through various mechanisms (Dunkle et al., 2004a). It is defined as any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to the home or the workplace. In addition to physical force, sexual violence often involves psychological intimidation, threats of physical harm, of being dismissed from a job or of not obtaining a job that is sought (WHO, 2002). It may also occur when the person aggressed is unable to give consent, for example, while drunk, drugged, asleep or mentally incapable of understanding the situation (WHO, 2002).

Although there is limited data on the burden of sexual violence in developing countries, available evidence suggests that it may be common (Koenig et al., 2004). Cultural sensitivity associated with sexual behavior and sexual violence in particular, makes community-based research on sexual violence challenging (Koenig et al., 2004). As the literature suggests, there is a link between sexual violence and such adverse reproductive health outcomes as unintended pregnancy (Heise, Moore, & Toubia, 1995),
non-use of contraceptives (Heise et al., 1995), unsafe abortion (Heise et al., 1995),
gynecological morbidity (Heise et al., 1995), and transmission of HIV (Maman et al.,
2000; Garcia-Moreno & Watts, 2000). Limited evidence from the literature (WHO,
2002) has shown that being a victim of sexual violence increases the likelihood of
involvement in unprotected sex, having multiple partners, engagement in sex work, and
substance abuse which in turn, increases victims’ susceptibility to HIV and other sexually
transmitted infections (STIs). This is not surprising, since women who experience forced
sex often find it difficult to negotiate condom use as insistence on condom use could be
interpreted as mistrust of their partner or as an admission of promiscuity – conditions
likely to predispose them to further violence from their partners (WHO, 2002). Sexual
violence is also associated with low self-esteem and depression which have been shown
to be associated with behaviors that increase the risk for HIV infection (WHO, 2002).

HIV/AIDS Situation in Uganda

Uganda has experienced substantial declines in HIV prevalence and incidence in
the last 10 years and is considered to be one of the world’s earliest success stories and
model in combating HIV (Lau & Muula, 2004). The first cases of AIDS in the country
were reported in 1982 (Serwadda et al., 1985). By the late 1980’s, the epidemic had
become an unprecedented tragedy in the country (Okware et al., 2001). In the early
1990’s, the prevalence rates in some parts of the country were estimated at 30%, and the
national average was estimated to be 18% (Okware et al., 2001). Prevalence of HIV in
Uganda has exhibited declining trends at extraordinary pace. In 2001, the national HIV prevalence rate in Uganda was estimated at an average of 5% of adult population (Hogle et al., 2002). These declines notwithstanding, HIV/AIDS still poses a threat to Uganda given the 720,000 people are infected with the virus according to 2004 figures (UNAIDS, 2004). There is concern that the past success in Uganda will plateau or even reverse unless measures are taken to address the socio-cultural barriers against women and girls, who suffer disproportionately from HIV/AIDS, and yet they make up a significant portion of care-givers and the work force (UNAIDS, 2001).

HIV-serodiscordance

HIV-serodiscordant relationship is one in which one partner is infected with HIV and the other is not (van der Straten et al., 1998). In this type of relationship, managing emotional and sexual intimacy is challenging because of concerns about HIV transmission, the burden of initiating and maintaining safer sex, and the health status of the affected partner (Widom & Kuhns, 1996). These factors may contribute to changes in sexual desire and increase in psychosexual problems which may escalate sexual violence (Widom & Kuhns, 1996). A study carried out among married couples in Uganda in 1999 found that 7% of adults were in serologically discordant marriages, with the number of marriages in which men were HIV-positive being equal to those in which women were HIV-positive (Carpenter et al., 1999). However it is of interest to identify the correlates and extent to which sexual violence is associated with women in HIV discordant union. This may be important for improving counseling to help couples cope with the HIV test results.
A study that compared risk factors for HIV-infection among HIV-negative concordant couples and HIV discordant couples yielded results that led to the conclusion that in most cases husbands acquired HIV infection first and then transmitted it to their wives (Lurie et al., 2003). HIV transmission rates in African discordant couples who do not know their HIV results ranges from 20 to 25% per year (Allen et al., 1992; Hira et al., 1990). This transmission rate is commensurate with a per heterosexual exposure transmission risk of 1/500 to 1/1000 multiplied by a frequency of sex of 2-3 times per week (Allen et al., 1992; Gray et al., 2001). Most new HIV infections in Africa now occur in cohabiting couples (Flykesnes et al., 1997; McKenna et al., 1997; Allen et al., 1991), many of whom do not know that one of them may be HIV infected (Bakari et al., 2000). A study carried out in Uganda in 1995 (Serwadda et al., 1995) showed that in a relationship in which the husband is HIV-negative and the wife is HIV-positive, condom use is higher than if the man was HIV-positive and the wife HIV-negative. Discordant couples therefore should be highly motivated to use condoms through VCT, but the desire to have children and lack of alternative barrier protective methods may pose a challenge to this initiative (Allen et al., 2003). Another challenge is that of sexual violence, of which the prevalence and correlates among women in HIV discordant union in Uganda are not known.

Effective protection against HIV and other STIs among couples requires communication, agreement, and cooperation between couples. In their bid to carry out protective actions, women meet challenges from their male partners, ranging from silence, to resistance and non-cooperation, to threats and physical violence (Painter,
These factors that have a negative effect on the protective actions against HIV/AIDS have not been extensively researched (Painter, 2001).

Prevalence of Sexual Violence

Sexual violence against women is a global problem (UNICEF, 2000; Jewkes & Abrahams, 2002). Among Asian countries Thailand had the highest prevalence of 44%, and it was lowest (16%) in Japan (WHO, 2005). The prevalence of sexual violence among ever-partnered women in Europe ranges from 4% in Serbia and Montenegro (WHO, 2005) to 51.9% in Turkey (WHO, 2002). In North America, it is estimated that prevalence of sexual violence among women is 8.0% in Canada and 7.7% in the US (WHO, 2002). Evidence of the prevalence of sexual violence in Africa is scanty, and only confined to a few population-based studies (Heise, Ellsberg, & Gottemoeller, 1999; Edleson, 1999; Koenig et al., 2003; Jewkes et al., 2001; Blanc et al., 1996; van der Straten et al., 1998; Watts et al., 1998). However, available literature shows that the prevalence in Sub-Saharan Africa is highest (31%) in Ethiopia and lowest (15%) in Namibia (WHO, 2005). In populations where HIV prevalence is high and women’s social status is low, the risk of HIV infection through sexual violence is high (Dunkle et al., 2004a). A survey of women attending antenatal clinics in Soweto, South Africa, found significantly higher rates of HIV infection in women who were physically abused or sexually assaulted by their male partners. This study (Dunkle et al., 2004a) also revealed that abusive men are more likely than non-abusers to be HIV-positive.

There is evidence to show that the magnitude of sexual violence by men against women in Uganda is increasing as exhibited by a study conducted in the country in 1991.
which showed that 22% of adult women in the country experienced sexual violence (Heise et al., 1995), and a more recent population-based survey of women in reproductive age in a rural district in the country revealed a prevalence of 26.6% among women in sexually active relations (Koenig et al., 2004). A study carried out in 1993 among primary school youth in the district of Kabarole in Uganda showed that 31% of girls had been forced to have sex (Bagarukayo et al., 1993). Although sexual violence against women is receiving increasing attention in many industrialized nations including the United States (Chermiak et al., 2005), it receives very little emphasis in less developed countries, perhaps due to cultural reasons, limitation in resources and a plethora of other equally important public health challenges (McMichael, Waters, & Volmink, 2005). The magnitude of sexual violence by men against women in HIV discordant union in Uganda is not known, yet sexual violence can have very harmful and lasting consequences for victims, families, and communities.

Sexual violence against women is a feature of conflicts in the African Great Lakes region comprising of Democratic Republic of Congo (DRC), Rwanda, Burundi, Uganda, and also in the neighbouring Darfur region of Sudan (Human Rights Watch, 2004). During the 1994 Rwandan genocide, an estimated 250,000 women were subjected to sexual violence as a tool of genocide (Human Rights Watch, 2003). In the DRC, women from the most disadvantaged and vulnerable social groups and responsible of 76% of the subsistence economy of the region, have been the main victims of sexual violence committed by armed groups (International Alert, 2005). Rape and sexual abuse, were reportedly committed with unprecedented violence as a weapon of war aimed at humiliating and degrading the victims (International Alert, 2005). Between 1996 and
2003, about 21.0% of the women were sexually abused by one attacker, and 79.0% were gang raped in the DRC (International Alert, 2005).

Consequences of Sexual Violence

Consequences of sexual violence may include physical effects like: sexually transmitted diseases (Wingood et al., 2000), unwanted pregnancy (Holmes et al., 1996), chronic pelvic pain, premenstrual syndrome, gastrointestinal disorders, gynecological and pregnancy complications, migraines and other frequent headaches, back pain, facial pain, disability preventing work (Jewkes, Sen, & Garcia-Moreno, 2002); psychological consequences like: shock, denial, fear, confusion, anxiety, withdrawal, guilt, nervousness, distrust of others, depression, symptoms of post-traumatic stress disorder (Ackard & Neumark-Sztainer, 2002; Faravelli et al., 2004; Ystgaard et al., 2004); and social consequences such as: engaging in high-risk sexual behavior including, and using or abusing harmful substances. The proposed study will therefore find out the magnitude of sexual violence among women in HIV discordant union, the characteristics of the women in HIV discordant union who experience sexual violence, and the prevalence of STDs among women in HIV discordant union who experience sexual violence. Counseling programs that promote disclosure of HIV serostatus without first assessing the risk of sexual violence may place the women at increased risk of sexual violence. Further research is necessary to identify women in HIV discordant union who are at risk for sexual violence following HIV serostatus disclosure and to provide information that can be used to develop approaches for encouraging safe disclosure among couples.
Direct HIV Transmission through Sexual Violence

Forced sexual intercourse with an HIV infected partner is one of the routes of transmission for HIV and STIs to women. The biological risk of transmission of HIV in a violent sexual encounter is higher for anal sex followed by vaginal and oral sex. HIV transmission risk is higher in presence of other STIs and with exposure to sexual secretions and/or blood. Risk of HIV transmission is also increased with the degree of trauma, vaginal lacerations, and abrasions that occur when force is used. Where sexual violence occurs in girls and young women, risk of transmission is also likely to be higher because girls’ vaginal tracts are immature and tear easily during sexual intercourse (Glasser et al., 1991; Jenny et al., 1990).

Indirect HIV Transmission through Sexual Violence

As the AIDS epidemic in industrial nations changed from a disease primarily of men to one that affects both sexes, various studies examined a possible relationship between sexual abuse and HIV risk (Miller, 1999; Maman et al., 2000). A discussion on this is presented in the following section.

Sexual Abuse, Drug Use, and HIV Risk

Some researchers demonstrated the link between sexual abuse with drug-related HIV risk behaviors such as drug use, needle and syringe sharing with mainly cocaine use being directly implicated (Kilpatrick, Edmunds, & Seymour, 1992). These studies suggested that sexual abuse precedes problematic drug initiation and use (Miller, 1999). The logical explanation advanced for this phenomenon of drug use following sexual
abuse was the fact that drug use may be more immediately available and effective than other options such as mental health care or supportive listeners to address the negative impact of sexual abuse (Hawkins, Catalano, & Miller, 1992). Although the use of cocaine and other psychoactive drugs is fast creeping into Africa (Affinih, 1999; Klein, 2001; Taylor et al., 2003), there are no studies to suggest that there is direct link between sexual abuse, cocaine use and HIV risk in Africa.

Sexual Abuse, Sexual Adjustment, and HIV Risk

There is increasing evidence showing that the relationship between violence against women and HIV infection may be mediated by HIV risk-taking behaviors such as taking multiple sexual partners, non-primary partners (partnerships outside marriage) or engaging in transactional sex, defined as exchange of sex with men for material gains and basic survival needs (Dunkle et al., 2004b). A study in South Africa showed that women who experienced intimate partner violence were 2-3 times more likely to engage in transactional sex than women who did not report violence (Dunkle et al., 2004b), and were found to be about 6 times more likely to use condoms inconsistently than their counter parts who did not experience sexual coercion (Pettifor et al., 2004). Those who reported transactional sex and had non-primary partners had 1.5 times odds of being HIV infected than those who did not report transactional sex (Dunkle et al., 2004b).

Sexual abuse during childhood and forced sexual initiation during adolescence are associated with increased HIV risk-taking behaviors among women (Zierler et al., 1991). Several studies carried out in the US and Nicaragua were in agreement with the relationship between sexual abuse during childhood and forced sexual initiation during
adolescence and HIV risk-taking among women (Maman et al., 2000; Olsson et al., 2000).

Earlier studies indicated that women with history of sexual abuse have HIV risk-taking behaviors including inconsistent condom use (Battjes, Leukefeld, & Pickens, 1992), an obsession with sexual activity, an inability to sustain intimate relationships, participation in self destructive sexual activity (Browne & Finkelhor, 1986; Mullen et al., 1994), and may deny the risks involved such that they inaccurately perceive the risk and do not implement risk reduction strategies or engage in self protective behaviors (Ratner, 1993; Sobo, 1993).

**Sexual Abuse, Psychopathology, and HIV Risk**

Some studies posit that some women who experience sexual abuse develop psychopathology (Miller, 1999). Sexual violence has been associated with a number of mental health and behavioral problems in adolescence and adulthood including depression, post-traumatic stress disorder, and dissociation (Creamer, Burgess, & McFarlane, 2001). Studies have demonstrated that depression could lead to increased HIV transmission through participation in self destructive behaviors like sharing syringes with HIV infected drug users, trading sex, or drug use to relieve painful mood states arising from past experience (van der Kolk, Perry, & Herman, 1991; Browne & Finkelhor, 1986). Results from several prospective cohort studies linked depression to HIV risk behaviors such as frequency of injection, participation in transactional sex, and choosing risky sex partners like injection drug users (Latkin & Mandell, 1993; Stiffman et al., 1992). However, it should be noted that the relationship between depression and
HIV risk has been demonstrated by conducting studies using samples of drug users or those at very high risk of HIV transmission (Darke et al., 1992; Hartgers et al., 1992).

Early clinically based research identified relationships between sexual abuse and generalized anxiety disorders or symptoms (Browne & Finkelhor, 1986). When models of traumatic stress were developed in response to the results of the clinically based studies, the results led to the conclusion that post-traumatic stress disorder was associated with sexual abuse (Pettifor et al., 2004). Population-based surveys found relationships between post-traumatic stress disorder and increased risk of drug use disorders or problematic drug use (Kilpatrick et al., 1992; Breslau et al., 1991; Resnick et al., 1993). The cross-sectional nature of the above studies prohibit making of inferences about causality. However, the consistency of the findings and strong association between post-traumatic stress disorder and substance use disorders is an indication of a likely relationship between post traumatic stress disorder and HIV transmission (Miller, 1999).

Dissociation has been linked to HIV risk behaviors in women who experienced sexual abuse (Miller, 1999; Zlotnick et al., 1994), with the association being explained by results of studies that demonstrated that prevalence of self damaging sex and drug use behaviors, a hallmark of borderline personality disorder, is high among women who experienced sexual abuse (Zlotnick et al., 1994; van der Kolk et al., 1991; Janoff-Bulman, 1992; Dunn et al., 1995). Other studies added that, women who have experienced sexual violence may feel responsible, or suffer guilt over their sexual abuse experiences and may knowingly participate in self destructive behaviors associated with HIV transmission as a form of punishment (Miller, 1999; Janoff-Bulman, 1992).
Social, Economic, and Cultural Link between Sexual Violence and HIV Risk

Studies across cultures have come up with a number of societal and cultural factors that might give rise to higher levels of violence. A study carried out by Levinson in the US to examine the cultural patterns of wife beating by exploring the factors that consistently distinguish societies where wife beating is common from those where the practice is rare or absent, suggested that wife beating occurs more often in societies in which men have economic and decision-making power in the household, where women do not have easy access to divorce, and where adults routinely resort to violence to resolve their conflicts (Levinson, 1989). The study also suggested that stable source of social support as well as economic independence from their husbands and families offers protection to wives from beating by their husbands (Levinson, 1989). Various researchers have suggested that rigid gender roles and notions of manhood linked to dominance, male honor and aggression, all increase the risk of partner violence (Heise, 1998).

Socio-economic inequalities and sexual violence have exacerbated the prevalence of HIV/AIDS among women. Inequality, poverty and lack of power and education are some of the reasons why 57% of the people with HIV in sub-Saharan Africa are women (UNAIDS, 2004). Uganda’s future HIV prevention efforts should therefore take women as a priority group. A study carried out in Uganda found out that women with histories of having experienced violence are eight times as likely to be infected with HIV as women who have not (Quigley et al., 2000). While studies conducted in Tanzania, Rwanda, and South Africa showed up to three fold increase in risk of HIV among women who have experienced violence compared to those who have not (van der Straten et al., 1998; Dunkle et al., 2004b; Maman et al., 2002). Some researchers have asserted that violence
against women is not just a cause of the AIDS epidemic, but is also a consequence of it (Heise et al., 1999). Therefore, HIV infection and sexual violence have a cyclical relationship, whereby the presence of one greatly affects the other.

Human Rights Watch argues that HIV/AIDS programs focusing on fidelity, abstinence, and condom use do not account for the ways in which violence inhibits women’s control over sexual matters in marriage (Human Rights Watch, 2003). It is more difficult for women to be abstinent during marriage, especially in situations that are heavily influenced by cultural practices. For example, the payment of bride price (dowry) to the bride’s family is necessary for the traditional formalization of marriages. Since an exchange has been made between the husband and the bride’s families, the woman’s services, including sex, have, in essence, been purchased by her husband, and it is difficult, if not impossible, for the woman to refuse sexual intercourse with her husband without serious consequences (Human Rights Watch, 2003; Rao, 1997; Schuler et al., 1996). Researchers have pointed out that much nonconsensual sex takes place within consensual unions. Therefore, it follows that married women have little or no power to deny their husbands sex, even if they feel that they might be at risk for HIV (Heise et al., 1999).

Married women also have little control of their husband’s behavior and relationships outside of marriages. While Uganda reports reduced rates in extramarital relationships, polygamous marriages and extramarital relationships that men may not report or may not recognize as “outside of marriage” are still prevalent in many areas of the country. Although condom social-marketing efforts have enjoyed widespread success in Uganda, women still have little negotiating power involving condom use (Heise et al.,
1999; Serwadda et al., 1995; Blanc et al., 1996; Karim et al., 1995). The issue of condoms brings up issues of mistrust within the marriage, and the desire of having children is one of the determinants of condom use in many cases. Even though Uganda has addressed the issue of HIV/AIDS-related stigma, and has made many successful attempts to eliminate stigmatization of the disease, AIDS victims continue to suffer in their communities. Violence strips women of autonomy over their body, prevents them from safeguarding themselves from exposure to HIV infection, and forces them to go to great lengths to disguise their HIV-positive status (Human Rights Watch, 2003). Women who contract HIV are often evicted and rejected by their husband, or, in many cases, blamed for their husband’s own HIV infection. Stigmatization of the disease affects access and utilization of primary health care, including testing services. Women who wish to hide their HIV status may not suggest condom use or HIV testing, for fear of being suspected by their partner (Human Rights Watch, 2003; Abrahams et al., 2004; Medley et al., 2004).

Like many women around the world, women in Sub-Saharan Africa are not only burdened with their assigned gender roles, which include care-giving for husbands, children and other family members, farming, cooking and cleaning, and maintaining the home, but they are also burdened by poverty and lack of power. Women’s low socio-economic status limits their negotiating power regarding condom use, their ability to discuss fidelity and STI testing with their partners, or their ability to leave risky relationships. Such disempowerment increases vulnerability to HIV. Thus, the socioeconomic and sexual discrimination experienced by women can ultimately become life-threatening (WHO, 2002; Human Rights Watch, 2003).
While sexual violence against women has implications for family health in general (Ford-Gilboe, Wuest, & Merritt-Gray, 2005), available evidence suggests that it may be an important risk factor for infection with HIV and other sexually transmitted infections (Quigley et al., 2000). Thus, research on sexual violence in Uganda is of critical importance if the acclaimed gains made by the country (Allen et al., 2003; Koenig et al., 2004) in halting the epidemic are to be sustained. For example, a study of HIV transmission among heterosexuals in rural Uganda found an eight-fold increased risk of HIV infection among women who reported a history of forced sex (Edleson, 1999). HIV infection rates are higher among women who have been sexually assaulted because forced vaginal penetration commonly causes abrasions and cuts that allow the virus to pass the vaginal wall more easily (WHO, 2002). It is proposed that HIV transmission is the long-term sequela of sexual abuse by way of direct and indirect mechanisms (Miller, 1999). Mediation of transmission of HIV is thought to occur through direct transmission as a result of vaginal tear and laceration following coercive sex, and indirect transmission that occur through sex risk taking, and increasing participation in HIV risk behaviors (WHO, 2002). There are specific demographic, economic, and behavioral characteristics that promote sexual violence, and studying them is important when examining the relationship between sexual violence and the HIV serostatus of women. Such characteristics may include: being young, use of alcohol and other drugs, history of sexual abuse, having multiple sex partners, involvement in sex work, low level of education, and poverty. Identifying these risk factors provides us with insight into the characteristics of women in HIV discordant and concordant relationships who become
victims of sexual violence. It also helps us ascertain whether being in HIV discordant union is associated with more sexual violence as compared to HIV negative concordant union. This is important in designing interventions to address the problem of sexual violence among women of different HIV serostatus. A report of sexual violence among HIV discordant couples in Uganda is important for planning appropriate interventions by the health care system, policy makers, and law enforcement institutions in Uganda. Perhaps the results of the study will prompt a modification in the counseling protocol at VCT centers in Uganda. Questions generated by the study may provide avenues for future focused research.

Research Questions and Study Aims

This study is designed to answer the following research questions:

1. Is the prevalence of sexual violence higher among women in HIV discordant unions compared to those in HIV negative concordant unions after they receive voluntary counseling and HIV testing at AICs, Uganda?

2. Are women in HIV discordant unions more predisposed to risk factors (demographic, behavioral, economic) for sexual violence compared to those in HIV negative concordant unions who received voluntary counseling and HIV testing at AICs, Uganda?

3. Is prevalence of STD correlated with increased experience of sexual violence among women in HIV discordant than HIV negative concordant unions who received voluntary HIV counseling and testing at AICs, Uganda?

4. What are the lived experiences of women in HIV discordant relations who experience sexual violence from their partners?
Specific Aims

The specific aims of this study are:

1. To estimate the prevalence of sexual violence among women of different HIV serostatus attending post-test club services at AICs, Uganda.

2. To identify specific characteristics (demographic, economic, and behavioral) associated with sexual violence among women of different HIV serostatus attending post-test club at AICs, Uganda.

3. To estimate the prevalence of selected STD among women of different serostatus attending post-test club at AICs, Uganda.

4. To investigate, using the critical incident technique (Flanagan, 1954), the lived experiences of sexual violence by women in HIV discordant unions attending post-test club services at AICs, Uganda.

Whereas data collected via a structured questionnaire approach will enable us to estimate the prevalence of sexual violence among women in HIV discordant unions, this specific aim will employ a qualitative approach (narrative investigation) to explore and document actual incidents and experiences of sexual violence by the women. The purpose is to obtain data on the nature, antecedents, contextual framework, cultural underpinnings, and perspectives of the women who experience sexual violence.

Study Hypotheses

1. We hypothesized that there was a difference in the prevalence of sexual violence among women in HIV discordant unions attending post-test club services at AIDS
Information Centers, Uganda compared to women who were in HIV negative concordant unions.

2. We hypothesized that women in HIV discordant unions attending post-test club services at AICs, Uganda had particular characteristics that distinguished them from those who were in HIV negative concordant unions.

3. Using *Trichomonas vaginalis* (*T. vaginalis*) as indicator, we hypothesized that there was a difference in the prevalence of STD among women in HIV discordant unions attending post-test club services at AICs, Uganda compared to those in HIV negative concordant unions.

**Materials and Methods**

Since the consequences of sexual violence are far reaching, and women are vulnerable to such violent acts, we sought to generate information on the magnitude of the problem among women in heterosexual HIV discordant unions, who shoulder emotional and psychosexual sequelae, and we then explored factors associated with sexual violence, sexual behavior, and STD prevalence among the women. The study methods associated with each specific aim are as follows:

*Specific Aim 1*

To estimate the prevalence of sexual violence among women of different HIV serostatus attending post-test club services at AICs, Uganda.

We hypothesized that there was a difference in the prevalence of sexual violence among women in HIV discordant unions attending post-test club services at AIDS
Information Centers, Uganda compared to women who are in HIV negative concordant unions.

*Consent to participate.* The protocol for this study was submitted to the Institutional Review Board (IRB) of the University of Alabama at Birmingham, USA, the Makerere University School of Public Health Higher degrees, Research and Ethics Committee Uganda, and the Uganda National Council for Science and Technology for approval (Appendix A). An informed consent form was drafted in English and translated by two independent translators into the local language, Luganda. The local language version was back-translated to English and compared with the original English language version to ascertain the accuracy of the translation.

Informed consent was obtained on a one-to-one basis. At recruitment, each potential participant who could read was asked to study the informed consent form and to ask any questions or express any concerns that she may have. After all questions or concerns had been addressed and the investigator was sure that the participant understood the purpose of the study and her involvement, the participant was asked to sign the consent form, signifying her voluntary acceptance to participate. If a participant was not literate, the consent form was read to her and she was asked to give a thumb-print signifying her consent to participate. Prospective participants were told that refusal to participate in the study would not result in the loss of any health or other benefits from AIC or from their local health and social services departments. They were also told of their rights to withdraw from the study at any time they wished to. Study participants were then asked to complete the baseline assessment.
Because of the sensitive nature of this study, and the need to benefit from the well established and trusting relationship between AIC staff and their clients, this study recruited, trained, and used experienced VCT counselors at the three AICs for data collection. They also executed the informed consent process.

Selection criteria for study participants. For specific aim 1, women whose HIV serostatus had already been ascertained and were attending post-test club services at AIDS Information Center, Uganda who had consented to the study were interviewed. With permission from the Executive Director, AIDS Information Center, potentially eligible participants were informed about the study at the time of receiving their test results and their permission to participate sought at this point. Those who showed interest and met the inclusion criteria were sent to a senior counselor who then obtained informed consent from them. This process was continued until the minimum required sample size was obtained.

Quantitative data collection. To investigate specific aim 1, quantitative data relating to sociodemographic characteristics of participants, behavioral variables, and prevalence of sexual violence were collected by means of a semi-structured questionnaire that contains closed and open-ended items (Appendix B). The questionnaire consists of the following three domains:

1. Sociodemographic characteristics: This covered basic sociodemographic characteristics of participants, including age, gender, tribe, marital status, religion, education, and employment status.
2. HIV serostatus of the women and experience of sexual violence: This section asked about the HIV serostatus of the women and whether force or threats of force was ever used by the partner to have the spouse engage in sexual intercourse against her will.

3. Risk factors for sexual violence: This section was designed to elicit information on risk factors for sexual violence among women in HIV discordant and HIV negative concordant unions, namely: the frequency and use of condoms, length of stay with the current partner, history of transactional sex, illicit drug and alcohol consumption, number of lifetime sexual partners, and history of STDs.

Data collection. The study instrument was administered by trained counselors to participants during post-test club meetings at the three participating AICs. The questionnaire interviews were conducted on a one-to-one basis. To ensure consistency of administration and to reduce inter-observer bias (Katz et al., 2004) only three counselors were involved, one for each participating AIC.

Measurement of variables. For specific aim 1, the main outcome variable was sexual violence. As already stated, sexual violence is defined as the use of physical force or threat of force to compel persons to engage in a sexual act against their will, whether or not the act is completed. In line with the prospective cohort design chosen for this study, the study instrument was administered to the participants at baseline. Data on sociodemographic characteristics were recorded. After taking HIV test and the test results disclosed, participants were followed up by the counselors and the principal investigator for 4 months to assess ongoing occurrences of sexual violence from their spouse. Presence of sexual violence was coded as 1 and its absence coded as 0. As earlier stated, the main predictor variable was the HIV serostatus of the women that include: HIV
discordance and HIV negative concordance. HIV discordance had two subgroups of HIV positive women who were in HIV discordant unions and HIV negative women who were in HIV discordant unions.

Quality control. To ensure quality of data to be collected, the internal consistency of the questionnaire developed was ascertained by the use of Cronbach’s alpha. As already described, data collectors were trained HIV counselors at the participating AICs. Their involvement had many advantages that enhanced the quality of this study: first, the participants were familiar with these individuals and were very likely to volunteer truthful information to them based on established trusting relationships with them; second, the counselors were certificated and had training in psychology. This would be important in dealing with any negative psychological break downs that some participants may have had as they recounted experiences of sexual violence; third, they had local knowledge of both spoken and written English and Luganda. The principal investigator checked completed questionnaires for errors and made corrections before data entry onto computer software program for analysis. The principal investigator entered data twice in the computer and compare the data entered to ensure accuracy. Where the data do not match, the appropriate questionnaires IDs were checked in order to identify and rectify the error. Quality control was applicable to all other subsequent specific aims.

Data analysis. Quantitative data were edited, coded and entered into the computer and cleaned before analysis. Statistical analysis was then performed using SAS software (version 9.1, SAS Institute, Cary, NC). The characteristics of study participants were described by computing frequencies and percentages for categorical variables. Means
with standard deviations were calculated to describe the distribution of continuous variables. Participants’ HIV serostatus was cross-tabulated with sexual violence variables and prevalence of sexual violence derived.

To test hypothesis 1, differences in the proportion of sexual violence among participants of different HIV serostatus were assessed by means of chi-square ($\chi^2$) statistics. Adjusted odds ratios generated were used to estimate the magnitude of association between sexual violence and HIV discordance. Multivariable logistic regression model in which HIV serostatus was the independent variable and sexual violence the dependent variable, was used to generate adjusted odds ratio of the association between HIV serodiscordance and sexual violence while controlling for confounders.

Specific Aim 2

To identify specific characteristics (demographic, economic, and behavioral) associated with sexual violence among women of different HIV serostatus attending post-test club services at AICs, Uganda.

There are specific demographic, economic, and behavioral characteristics that promote sexual violence, and studying them is important when examining the relationship between sexual violence and the HIV serostatus of women. Such characteristics may include: being young, use of alcohol and other drugs, history of sexual abuse, having multiple sex partners, involvement in sex work, low level of education, and poverty. Identifying these risk factors provided us with insight into the characteristics of women in HIV discordant and HIV negative concordant relationships
who become victims of sexual violence. It also helped us ascertain whether being in HIV discordant unions is associated with more sexual violence as compared to HIV negative concordant unions.

We hypothesized that women in HIV discordant unions attending post-test club services at AIC, Uganda who experienced sexual violence were not different in terms of demographic, economic, and behavioral characteristics from women in HIV negative concordant unions.

**Selection criteria for study participants.** The same participants for specific aim 1 as already described were used to investigate specific aim 2.

**Data collection.** The study questionnaire which had earlier been described was used to investigate specific aim 2. Of particular relevance to this aim is the section of the questionnaire (11 items in all) designed to elicit information on risk factors for sexual violence among women in HIV discordant and HIV negative concordant unions, including the frequency and use of condoms, length of stay with the current partner, history of transactional sex, illicit drug and alcohol consumption, number of lifetime sexual partners, and history of STDs. Data on sociodemographic characteristics was collected as previously explained.

**Measurement of variables.** The independent variables in this study that we expected to have a bearing on the outcome variable included: age of participant, tribe, age at sexual debut, religion, education level, marital status, employment status, length of the relationship, number of lifetime sex partners, transactional sex, parity, history of pregnancy, condom use, drug and alcohol use.
During the questionnaire interview, participants were asked to report their tribe as is known in Uganda. Age of the study participant and their age at sexual debut in complete years were obtained. Educational level attained was asked and categorized as: none, in case the participant never attended school at all; primary level in which case that participant spent between 1 and 7 years of formal studies at school; for secondary level the participant completed between 8 to 13 years at school; and tertiary level meant the participant completed secondary level and proceeded to pursue university education or any other professional training. Marital status was asked for and recorded as married or cohabiting relationship. Participants were expected to respond to the question about employment status by mentioning whether they were in a gainful employment or not. The length of time the participants had been in the current sexual relationship in complete years was asked and an answer in complete years was expected. The question on the number of persons the participant has ever had sexual intercourse within her lifetime when asked was expected to elicit answers in absolute numbers. Response to the inquiry on whether the participant had ever had transactional sex was either yes or no. Parity which refers to the number of live birth a participant had ever had was asked, and an answer in absolute numbers was expected. The question as to whether the participant was pregnant at the time she experienced sexual violence was asked to elicit a yes or no answer. History of condom, drug and alcohol use was also probed into with a yes or no answer expected.

Quality control. For specific aim 2 quality control procedures were as for specific aim 1.
Data analysis. Quantitative data analysis was undertaken using SAS software (version 9.1, SAS Institute, Cary, NC). Descriptive analysis was done by cross tabulation of participants’ HIV serostatus with the following sociodemographic characteristics: age, tribe, marital status, educational level, parity, employment status, religion, parity, and alcohol use using \( \chi^2 \) statistic to examine for potential confounders.

Risk factor variables for sexual violence such as age, age at sexual debut, number of lifetime sexual partners, transactional sex, parity and whether the woman was pregnant at the time, history of STDs, condom use and alcohol consumption were cross-tabulated with HIV serostatus variables. Distribution of descriptive statistics (frequency, proportion, and mean) of risk factors for sexual violence among participants of different HIV serostatus was examined and differences in the proportion of risk factors were assessed by means of \( \chi^2 \) statistics. Then the association of sexual violence with HIV serostatus was examined using a multivariable logistic regression analysis.

Crude odds ratios for each of the outcome measures was generated using 2×2 contingency tables while adjusted odds ratios were obtained from the multivariable logistic model that controlled for the effects of confounding characteristics. We employed the \( -2 \log \text{likelihood ratio tests} \) to determine model fit, and estimated the significance of main effects using the Wald test (Clayton & Hills, 1993). Crude and adjusted odds ratios, confidence intervals and p-values were used to ascertain whether a given characteristic was a confounder in the association between sexual violence and HIV-serodiscordance, hence the test for hypothesis 2.
Specific Aim 3

To estimate the prevalence of selected STD among women of different serostatus attending post-test club at AICs, Uganda.

Individuals who suffer from STDs are at a high risk of contracting HIV (Hanson et al., 2005). Since being a victim of sexual violence and being susceptible to HIV share a number of risk behaviors, prevalence of STDs among women in HIV discordant unions may be an important proxy for risky sexual behavior including engagement in unprotected sex, promiscuity or a problem of access to STD services. Therefore, laboratory tests were done on vaginal swabs obtained from study participants in order to estimate prevalence of STD among them, post VCT.

Using *T. Vaginalis* as indicator, we hypothesized that there was a difference in the prevalence of STD among women in HIV discordant unions attending post-test club services at AICs, Uganda compared to those in HIV negative concordant unions.

Selection criteria for study participants. The same participants for specific aim 1 as already described were used to investigate specific aim 3.

Data collection. For specific Aim 3, the Laboratory Technician used data extraction form (Appendix C) to record results of STD test. From each of the eligible study participant a vaginal swab was taken for test for *T. vaginalis*. This was chosen as indicator organism because of its high prevalence rate of 23.8% among women in Uganda compared to *Neisseria gonorrhea* (*N. gonorrhea*) 1.5%, *Trachomatis chlamydia* (*T. chlamydia*) 2.4% (Paxton et al; 1998), and syphilis 3.3% (MOH & ORC Macro, 2006); and its low cost of determination in comparison to tests for other STDs such as *T. chlamydia* and *N. gonorrhea* (Kristin & Biro, 2001).
Measurement of variables. Laboratory tests were conducted by trained Laboratory Technician at the Microbiology department of Makerere University Medical School, Uganda, with oversight by the investigator who is himself, a licensed physician in the country. Specimen collection for testing for *T. vaginalis* was done by the use of a self-administered cotton dacron swab to collect specimen from the posterior fornix by being instructed to insert it deeply into the vagina and gently rotating it for approximately 10 seconds (Wendel et al., 2002). The cotton dacron swab was then used for wet preparation for testing for *T. vaginalis* (Wendel et al., 2002).

*T. vaginalis* was detected by the use of wet preparation technique in which swab specimens obtained from the posterior fornix of the vagina as described above were mixed in 2-3 drops of normal saline and then placed on a slide for microscopic examination (Wendel et al., 2002). The slides were then evaluated at magnifications of ×100 for evidence of motile *T. vaginalis* (Wendel et al., 2002).

Quality control. The Laboratory Technician checked for missing data and errors when filling the data extraction form prior to leaving the clinic. The principal investigator checked completed data extraction forms for STD tests for errors and corrections made accordingly.

Data analysis. Quantitative data were edited, coded and entered into the computer and cleaned before analysis. The principal investigator then linked the questionnaire and laboratory data by means of a common identification number. Analysis was then done using SAS software (version 9.1, SAS Institute, Cary, NC). Frequency of distribution of STD was cross-tabulated with the HIV serostatus of participants. To test hypothesis 3, differences in the proportion of STD among participants of different HIV serostatus were
assessed by means of the $\chi^2$ statistics. The association between STD and HIV discordance was then examined using a multivariable logistic regression model while controlling for potential confounders.

**Specific Aim 4**

To investigate, through qualitative means, the lived experiences of sexual violence by women in HIV discordant unions attending post-test club at AICs, Uganda. Whereas specific aims 1-3 provided us with quantitative data relating to prevalence of sexual violence and STDs, and related factors, they did not provide us with significant insight into the lived experiences of these women. Thus, we investigated this aim, using the **critical incident technique** (CIT) [Flanagan, 1954] – an open-ended retrospective method of eliciting information on people’s actual encounters with a phenomenon of interest. In CIT, participants are asked to identify specific incidents which they experienced personally and which had an important effect on them. Thus, the emphasis is on incidents rather than opinions. One principle of the critical incident technique (CIT) is that critical incidents will be memorable to those who experienced them. CIT has emerged as a valuable tool in qualitative research given its ability to get beyond familiar generalizations and to elicit a large pool of specific but typical problematic situations from groups affected by a situation under study. Following informed consent procedures as already described, sampled participants were asked to *narrate in their own words*, actual experiences of sexual violence, and the contexts of such experiences.
Selection criteria for study participants. In the bid to triangulate data, a random sub-sample of 25% of women in HIV discordant unions who had experienced sexual violence (n=26) were administered critical incident analysis guide questions to elicit the lived experience of sexual violence among women in HIV discordant unions attending post-test club at AIDS Information Centers, Uganda.

Data collection. A CIT guide was developed, pilot-tested and used for investigation of this aim. As shown in Appendix D, the guide was used to elicit answers and to generate discussion on the experience of sexual violence and associated contextual factors. CIT is an iterative process, and so, appropriate probing questions are asked as the process unfolds. All materials and information collected during the interviews were labeled and dated. Provision was made to protect participant’s confidentiality, and no participant was identified by name. The sessions were conducted in private, neutral settings in the premises of AIC, acceptable to the participants. The critical incident interviews were conducted in dialogue form, and each lasted about 30 minutes.

Qualitative data analysis. To conduct a content analysis of each respondent, verbatim transcript of each session was written up by trained field workers to ensure accuracy and objectivity. The transcripts were then cross-checked by the investigator for accuracy. The final transcripts for all the respondents were then uploaded into TEXTPACK computer software that supports computer-assisted content analysis of qualitative data (Mohler & Zuell, 1998). Using the software, transcripts of interviews with respondents were coded and classified according to a user dictionary. We generated files with both category frequencies and category sequences. We then identified categories that were descriptive or interpretative
of the opinions and perceptions of respondents in each session. We proceeded to generate tabulations with category frequencies, category sequences, and emerging themes. We then identified critical incidents experienced by each respondent, namely, the different components of sexual violence perpetuated against them by their partner after undergoing voluntary HIV counseling and testing and discovering the existence of a HIV discordant union. These incidents were then arranged into larger categories and themes.

Conceptual Model of Sexual Violence and HIV Risk in Uganda

According to the sexual aggression theory by Hall & Hirschman (1991), the primary motivators for sexual aggression are biological factors such as certain personality traits, affective dyscontrol, and effects of drug and alcohol use that start with physiological sexual arousal as a primary phenomenon, which then gets cognitively appraised and justified in the sociocultural context, and may lead to sexual violence, depending on whether the affective state has overcome such inhibitions as guilt, moral conviction, anxiety, and empathy for the victim. Physiological sexual arousal alone is not sufficient to produce sexual aggression in all cases (Hall & Hirschman, 1991). Early experiences such as parental divorce, large family of origin, presence of parental or sibling criminal history, parental neglect, and parental physical and sexual abuse may create lasting personality problems that may lead to later sexual aggression (Bard et al., 1987). A decision to respond in a sexually aggressive manner may be based on certain cognitive appraisals or justifications concerning the potential victim, conditioned through cultural or social processes (Burt, 1980). Sexually aggressive behavior occurs when affective states become so compelling and powerful that they overcome inhibitions such as guilt,
moral conviction, anxiety, and empathy for the victim (Finkelhor, 1984). Synergistic interactions among personality, physiological, cognitive, and affective components of sexual aggression also may occur (Hall & Hirschman, 1991).

Biological factors interact with the socio-cultural, gender, and economic factors (Figure 1) to explain the link between sexual violence and HIV risk. Sexual violence and HIV risk can therefore be conceptualized from the following perspectives: 1. Socio-cultural norms in Uganda, like societal acceptance of domestic violence, forced sexual initiation, payment of dowry (Heise et al., 1999), married men being free to have sexual relationship outside marriage (Olowo-Freers & Barton, 1992), acceptance of polygamy, and wife inheritance (Heise et al., 1999), all make married women have less say over their sexual matters; 2. Gender inequality as an underpinning factor for sexual violence against women in Uganda is embedded in a strong culture that discriminates against women but favors the male partners as having authority and control over their spouse including the right to beat them - men are the decision-makers on all issues in the household including sexual issues (Heise et al., 1999). Traditionally, the gender roles of women in the Ugandan society include farming, cooking, producing children, and looking after the men, children, and other relatives (Human Rights Watch, 2003); 3. Women’s limited independent income and control over resources heightens their dependence on the man, limiting their role on decisions pertaining to sexual issues, and ability to deny sex or ask the partner to use condoms (UNAIDS, 2004; Wolff, Blanc, & Gage, 2000). Men in Uganda frequently respond to spouses who refuse their sexual advances by the use of force or threats (Balmer et al., 1995). This raises concerns about women acquiring HIV infection from spouses who are unfaithful. Taking into account the
different aims and respective hypotheses of this study, the likely factors that will affect
the relationship between HIV serostatus as an independent variable and sexual violence
as an outcome variable include: age, age at sexual debut, tribe, religion, parity, history of
pregnancy, marital status, education level, length of the relationship, drug and alcohol
use, condom use, history of STD, multiple sexual partners, unprotected sex, and
transactional sex (Figure 1). If a women is pushed, pulled, slapped, punched, beaten,
kicked, hit with a weapon, burnt, scalded, verbally threatened, threatened using gestures,
or threatened with a weapon by her spouse/partner in order to secure sexual act from her,
then sexual violence would have been committed against her.
Figure 1: Conceptual model
PREVALENCE OF SEXUAL VIOLENCE AND RISK FACTORS AMONG WOMEN IN HIV DISCORDANT UNION, UGANDA

by

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Abstract

Background

Concerns about HIV transmission and the burden of initiating and maintaining safe sex in an HIV discordant relationships may contribute to changes in sexual desire and increased psychosexual problems that may escalate sexual violence.

Objectives

To assess the prevalence and risk factors for sexual violence among women in different HIV serostatus unions (discordant and concordant) attending post-test club services at AIDS Information Centers (AICs) in Uganda.

Methods

We carried out a prospective cohort study involving 250 women, 148 of whom were in HIV discordant unions, and 102 in HIV negative concordant unions.

Results

Prevalence of sexual violence among women in HIV discordant unions was comparable to that among women in HIV negative concordant unions after disclosure of their HIV test results (OR=1.3, 95% CI 0.7-2.2, p=0.40). Women in HIV discordant union were more likely than women in HIV negative concordant union to: have below secondary school education (AOR=2.0, 95% CI 1.4-2.9, p<0.0001); have had transactional sex (AOR=2.5, 95% CI 1.1-5.9, p=0.03); have had prior experience of sexual violence before their HIV test (AOR=51.0, 95% CI 19.5-134.0, p<0.0001); have
history of sexually transmitted disease (STD) [AOR=3.4, 95% CI 1.4-8.1, p <0.01]; have had other sexual partners (AOR=2.8, 95% CI 1.4-5.6, p <0.01); and have consumed alcohol prior to sexual intercourse (AOR=2.2, 95% CI 1.1-4.5, p =0.02).

Conclusions

This study found that prevalence of sexual violence following disclosure of HIV test results among women in HIV discordant unions was similar to that among women in HIV negative concordant unions. There is need for incorporating sexual violence issues in the counseling protocol of couples. Similarly there is need to put in place interventions that address girl-child education, early sexual debut, transactional sex, STDs and alcohol abuse.

Introduction

Sexual violence poses a serious public health problem affecting millions of women worldwide (WHO, 2002). An important component of domestic violence (WHO, 2002), sexual violence has been linked to the risk of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) through various mechanisms (Dunkle et al., 2004a). Sexual violence is defined as any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to the home or the workplace (WHO, 2002). In addition to physical force, sexual violence often involves psychological intimidation, threats of physical harm, of being dismissed from a job or of
not obtaining a job that is sought (WHO, 2002). Sexual violence may also occur when the person aggressed is unable to give consent, for example, while drunk, drugged, asleep or mentally incapable of understanding the situation (WHO, 2002).

The magnitude of sexual violence by men against women in Uganda is increasing (Heise et al., 1995; Koenig et al., 2004). A Ugandan survey in 1991 showed that 22% of adult women in the country experienced sexual violence (Heise et al., 1995), and a more recent population-based survey of women in reproductive age in a rural district in the country revealed a prevalence of 26.6% among women in sexually active relations (Koenig et al., 2004). The problem of sexual violence affects not only women of reproductive age, but also young girls. A 1993 study of primary school youth in Uganda showed that 31% of girls had been forced to have sex (Bagarukayo et al., 1993).

Although sexual violence against women is receiving increasing attention in many industrialized nations (Cherniak et al., 2005), it receives very little emphasis in resource-poor countries, perhaps due to cultural reasons, resource limitation and a plethora of other equally pressing public health challenges (McMichael et al., 2005).

An HIV discordant relationship is one in which one partner is infected with HIV and the other is not (van der Straten et al., 1998); an HIV positive concordant union is one in which both partners are infected with HIV, while an HIV negative concordant union exists when both partners are negative for HIV. A study in Uganda indicated that in most cases, husbands acquired HIV infection first through extramarital affairs and then transmitted it to their wives (Parikh, 2007). Managing emotional and sexual intimacy in HIV serodiscordance can be challenging because of concerns about HIV transmission, the burden of initiating and maintaining safer sex, and the health status of the affected
partner. In a setting such as Uganda where rates of intimate partner violence are high (Karamagi et al., 2006), these factors may contribute to changes in sexual desire and increases in psychosexual problems (Widom & Kuhns, 1996), and thus, escalate sexual violence. Consequences of sexual violence may include such physical effects as STDs (Wingood et al., 2000), unwanted pregnancy, chronic pelvic pain, premenstrual syndrome, gastrointestinal disorders, gynecological and pregnancy complications, migraines and other frequent headaches, back pain, facial pain, disability preventing work (Jewkes et al., 2002); psychological consequences such as shock, denial, fear, confusion, anxiety, withdrawal, guilt, nervousness, distrust of others, depression, symptoms of post-traumatic stress disorder (Ackard & Neumark, 2002; Faravelli et al., 2004; Ystgaard et al., 2004); and social consequences such as engaging in high-risk sexual behavior including, using or abusing harmful substances (Dunkle et al., 2004a).

Identifying risk factors for sexual violence provides insight into the characteristics of women in HIV discordant and concordant relationships who become victims of sexual violence, and this information may facilitate the design of interventions that are targeted and effective. To date, no study in Uganda has examined the association between sexual violence among couples in HIV discordant relationships. Therefore we sought to investigate the prevalence and risk factors for sexual violence among women in HIV discordant union attending post-test club services in selected VCT centers in the country. Our hypothesis was that among women attending HIV post-test club services at AIDS Information Centers, Uganda, there was a difference in the prevalence of sexual violence between those in HIV discordant unions and those in HIV negative concordant unions.
Materials and Methods

Study Setting

The study was carried out at AICs in three cities in Uganda, namely Kampala, Jinja, and Mbale in Uganda. AIC is a non-government organization founded in 1990 to provide HIV voluntary counseling and testing (VCT) services. Uganda’s AIC is an exceptional model of a VCT centre, offering individualized counseling and HIV testing, and a wide range of other services that include reproductive health services (including STD management, contraceptive/family planning services, condom provision, and health education), tuberculosis prevention, management of other medical conditions, outreach services and post-test club services (AIC, 2004; Painter, 2001). At the end of 2004, the client base of the 3 AICs included 25,193 individuals at the Kampala branch, 8,459 at Jinja branch and 6,707 at the Mbale branch (AIC, 2004).

Study Population

The study subjects were HIV positive women in HIV discordant union (i.e., the woman is infected but the man is not) and HIV negative women in HIV discordant union (i.e., the man is infected but the woman is not). The comparison group was comprised of women in HIV negative concordant union (i.e., both the man and woman are negative for HIV). All study participants had received HIV antibody test and knew their HIV serostatus prior to the study. AICs use the Capillus HIV-1/HIV-2 assay (Cambridge Diagnostics) to test for HIV. This rapid, same-day, on-site test provides sensitivity, specificity, positive and negative predictive values comparable to that of the enzyme immunoassay (EIA) used by the Uganda National Blood Bank (Kassler et al., 1998).
part of quarterly assurance, randomly sampled HIV test results at AIC obtained by the
use of Capillus HIV-1/HIV-2 assays are confirmed by the ELISA test at the National
Reference Laboratory at the Uganda Virus Research Institute (AIC, 2004).

This study was reviewed and approved by the Institutional Review Board (IRB
Protocol #F060417005) of University of Alabama at Birmingham. With permission from
Executive Director, AIDS Information Centre, potentially eligible participants were
informed about the study at the time of receiving their test results and their consent to
participate was sought at this point. Those who volunteered to participate and met the
inclusion criteria were sent to a senior counselor who obtained their informed consent.
This process was continued until the minimum required sample size was obtained.
Participation in the study was voluntary and no incentives were offered. Married women
aged 18 years and over who were in heterosexual relationship or who were co-habiting
with a male partner in a sexual union for at least six months prior to the study were
enrolled as study participants. Male partners of the women were excluded to minimize
response bias from study participants due to fear of intimidation by their male partners
for disclosing that they were abusive.

Sampling

In the absence of previous estimates of sexual violence among HIV discordant
couples in Uganda, we based our sample size calculation on the 27% prevalence level of
sexual violence reported among married women in one district in Uganda (Koenig et al.,
2004). Using PS, a computer software application for power and sample size calculation
developed by Dupont and Plummer (Dupont & Plummer, 1990), this rate (27%) was
applied in the estimation of the minimum sample size required to detect a relative risk of 2.0. We set the confidence level at 95% and incorporated a design effect of 1.95 because of the cluster design. We increased the sample size by 20% to account for anticipated non-response based on previous local studies (Gray et al., 1998; Weidle et al., 2002). The required sample size for the study was estimated to be 250 women. Using the proportional sampling approach based on client population sizes of the three AICs, we randomly approached and recruited 155 consenting women from Kampala, 53 from Jinja, and 42 from Mbale. Women who volunteered to participate gave informed consent, were assured of confidentiality, and assessed at baseline by an experienced counselor at each of the three AICs on a one-to-one basis. They were then followed up monthly for four months to record the occurrence of sexual violence. Follow-up interviews were conducted at the respective AICs at the end of the 4 months of the study. Overall, there were 148 women (74 were HIV positive and 74 HIV negative) in the study group and 102 in the comparison group.

Data Collection

Questionnaire development. A structured questionnaire consisting of 20 closed and 10 open-ended items was developed based on a comprehensive review of the literature, and validated through a series of reviews by all investigators (including a survey methodologist). The questionnaire consisted of the following three domains: sociodemographic characteristics, HIV serostatus of the women and experience of sexual violence, and risk factors for sexual violence.

Sociodemographic variables included age, gender, tribe, marital status, religion,
education, and employment status of the women. The section on *HIV serostatus of the women and experience of sexual violence* elicited information about the HIV serostatus of the women and whether force or threats of force was ever used by the man to have the spouse/partner engage in sexual intercourse against her will. The selected *risk factors for sexual violence* included current age, age at sexual debut, number of lifetime sexual partners, transactional sex, parity and whether the woman was pregnant at the time, history of STDs, condom use and alcohol consumption. The variable, age refers to the age of the woman, and was subdivided into 18-24 years, 25-34 years, and >34 years. Age at sexual debut refers to the age at which the woman had her first sexual intercourse. Lifetime sexual partner is the number of sexual partners the woman has ever had. The study participants were also asked whether they had ever had transactional sex that was defined as exchange of sex with men for material gains and basic survival needs. Parity, the total number of live deliveries the mother had previously experienced, was classified into nullipara (<1) and multipara (≥1). Other risk factors that were probed included: history of pregnancy, history of STDs, condom use, use of illicit drugs or alcohol.

*Internal consistency of the questionnaire.* We measured internal consistency of the questionnaire by creating a composite variable using the 5 items for measuring sexual violence namely: verbal threat, having been hit, punched, pushed, and slapped giving the Cronbach’s alpha of 0.95. The Cronbach’s alpha refers to the internal consistency of the instrument. Internal consistency refers to the degree to which the items composing a measure are interrelated; it is presumed that highly related sets of items are all measuring roughly the same construct (Janda, 1998). We determined internal consistency in this
study using Cronbach’s alpha. Cronbach’s alpha of 0.70 and above indicate good levels of reliability (Nunnally & Bernstein, 1994).

Data collection procedure. The questionnaire was administered to eligible participants at baseline. Data on sociodemographic characteristics were recorded. The participants were then followed every month for 4 months for occurrence of sexual violence, which was defined as the use of physical force or threat of force by the male partner to compel the woman to engage in a sexual act against her will, whether or not the act is completed. Data collectors were trained HIV counselors at the participating AICs. Data collectors were trained in sampling, interview technique, and ethical issues, the importance of safety of the study participants and interviewers, and confidentiality. The interviews were conducted in the privacy of the rooms used for counseling purposes at the respective AICs. Completed questionnaires were checked for errors and corrections made before data entry. The data set was then exported into computer software program for analysis.

Data Analysis

Double entry of data into Excel database was done before analysis to maximize consistency and quality of data. The data were then cleaned and imported into SAS computer software. Analysis was done using the SAS computer software version 9.0, SAS Institute, Cary, NC (SAS Institute Inc; 2004). Chi-square tests were conducted to compare differences in proportions of sexual violence outcomes among women in heterosexual HIV discordant union and those in heterosexual HIV negative concordant union. Prevalence of sexual violence among women in the two HIV serostatus groups
was calculated by dividing counts of sexual violence by the total number of women in each group within the follow-up period multiplied by 100. Student’s t-test was used for normally distributed continuous data. Effect modification and confounding were evaluated in stratified 2x2 tables. Crude odds ratios (OR) for each of the outcome measures were generated using 2×2 contingency tables while adjusted odds ratios (AOR) were obtained from a multivariable logistic regression model that controlled for the effects of current age of the woman, age at sexual debut, number of lifetime sexual partners, transactional sex, parity and whether the woman was pregnant at the time, history of STDs, condom use, drug and alcohol consumption. We employed the –2 log likelihood ratio tests to determine model fit (Clayton & Hills, 1993), and we estimated the significance of main effects using the Wald test (Clayton & Hills, 1993). All statistical tests were two-tailed with type 1 error rate fixed at 5%.

Results

All women participated for the 4-month follow-up duration of the study. Selected sociodemographic characteristics by HIV serostatus group is presented in Table 1. The participants were 34.0% of Ganda tribe and 66.0% non-Ganda. Women in the two cohorts were similar with regard to age; those in HIV discordant group had a mean age of 34.2 years (SD ± 10.3), ranging from 18.0-65.0 years. Those in HIV negative concordant group had a mean age 32.3 years (SD ± 11.0), ranging from 18.0-62.0 years. The two HIV serostatus cohorts differed with respect to tribal composition. The proportion of non-Ganda respondents was higher among women in HIV negative concordant unions. The
proportion of women above 34 years of age was higher among women in HIV discordant
unions compared to those in HIV negative concordant unions (Table 1).
Table 1: Selected sociodemographic characteristics of women, by HIV serostatus

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women in HIV discordant union N=148</th>
<th>Women in HIV concordant negative union N=102</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean</td>
<td>34.2 (SD ± 10.3)</td>
<td>32.3 (SD ± 11.0)</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24 years</td>
<td>31</td>
<td>29</td>
<td>0.05</td>
</tr>
<tr>
<td>25-34 years</td>
<td>46</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>&gt; 34 years</td>
<td>71</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td><strong>Tribe</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ganda</td>
<td>58</td>
<td>27</td>
<td>0.002</td>
</tr>
<tr>
<td>Non-Ganda</td>
<td>90</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>103</td>
<td>76</td>
<td>0.40</td>
</tr>
<tr>
<td>Living together</td>
<td>45</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>9</td>
<td>7</td>
<td>0.26</td>
</tr>
<tr>
<td>Primary</td>
<td>34</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>47</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>58</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>124</td>
<td>84</td>
<td>0.77</td>
</tr>
<tr>
<td>Unemployed</td>
<td>24</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>103</td>
<td>65</td>
<td>0.50</td>
</tr>
<tr>
<td>Muslim</td>
<td>41</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Culture accepts sexual violence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>142</td>
<td>101</td>
<td>0.15</td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Decision-maker</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man</td>
<td>44</td>
<td>20</td>
<td>0.11</td>
</tr>
<tr>
<td>Woman</td>
<td>11</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>93</td>
<td>77</td>
<td></td>
</tr>
</tbody>
</table>

*P-values were generated by using $\chi^2$ tests for differences of proportions between the two HIV serostatus categories. Comparison of group means of continuous variable was performed using the student’s t-test.

There was no marked difference in the prevalence of sexual violence among women in HIV discordant union (32.0%) compared to those in HIV negative concordant
relationship (28.0%) during the 4-month follow-up period after the disclosure of the results of their HIV test (Odds Ratio [OR]=1.3, 95% Confidence Interval [CI] 0.7-2.2, p = 0.40). The prevalence of sexual violence among HIV positive women in HIV discordant unions was 33.0% (n=25) and it was 30.0% (n=23) among HIV negative in HIV discordant unions (OR=1.2, 95% CI 0.8-1.7, p=0.5). The association between women’s respective serostatus (HIV positive or HIV negative) in discordant unions and suffering sexual violence did not attain significant statistical levels. While 37.0% (n=54) of women in HIV discordant relationship reported sexual violence prior to taking an HIV test compared to 28.0% (n=29) among women in HIV negative concordant relationships, this observed difference in proportions was not statistically significant (OR=1.5, 95% CI 0.8-2.5, p=0.18).

We performed bivariate analysis by means of chi-square tests to compare the occurrence of risk factors for sexual violence between women in HIV discordant union and those in HIV negative concordant unions (Table 2).
Table 2: Risk factors for sexual violence for women in HIV discordant and HIV negative concordant unions

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Women in HIV discordant Union N=148</th>
<th>Women in HIV concordant negative union N=102</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Suffered sexual violence</td>
<td>No sexual violence</td>
</tr>
<tr>
<td>Age at sexual debut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 18 years</td>
<td>32 (66.7%)</td>
<td>58 (58.0%)</td>
</tr>
<tr>
<td>Lifetime sex partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 2</td>
<td>34 (70.8%)</td>
<td>67 (67.0%)</td>
</tr>
<tr>
<td>Transactional sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15 (31.3%)</td>
<td>15 (15.0%)</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparous</td>
<td>45 (93.8%)</td>
<td>81 (81.0%)</td>
</tr>
<tr>
<td>Prior sexual violence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>40 (83.3%)</td>
<td>14 (14.0%)</td>
</tr>
<tr>
<td>History of STD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>42 (87.5%)</td>
<td>72 (72.0%)</td>
</tr>
<tr>
<td>Condom use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (25.5%)</td>
<td>52 (52.0%)</td>
</tr>
<tr>
<td>Other sex partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>28 (58.3%)</td>
<td>35 (35.0%)</td>
</tr>
<tr>
<td>Alcohol use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>21 (43.8%)</td>
<td>20 (20.0%)</td>
</tr>
</tbody>
</table>

*CI=Confidence interval.
We found statistically significant risk factors for sexual violence among women in HIV discordant unions as follows: engagement in transactional sex (OR=2.6, 95% CI 1.1-6.3, p=0.02), a report of other sexual partners (OR=2.6, 95% CI 1.2-5.6, p <0.01), history of STD (OR=2.7, 95% CI 1.1-8.0, p=0.04), prior sexual violence (OR=30.7, 95% CI 11.0-89.8, p <0.0001), alcohol use (OR=3.1, 95% CI 1.4-7.1, p=0.03), and condom use was protective (OR=0.3, 95% CI 0.1-0.7, p <0.01) [Table 2]. There was no evidence to suggest that: sexual debut at early age less than 18 years, having more than 2 lifetime sex partners, being multiparous, and drug use were associated with sexual violence among women in HIV discordant unions. Among the women in HIV negative concordant unions we found the following risk factors associated with sexual violence: sexual debut at early age less than 18 years (OR=5.0, 95% CI 1.5-19.4, p <0.01), prior sexual violence (OR=972, 95% CI 69.9-35473, p < 0.0001), history of STD (OR=3.5, 95% CI 1.3-9.7, p=), and report of other sexual partners (OR=14.4, 95% CI 2.5-107.5, p < 0.0001) [Table 2]. There was no evidence to suggest that: having more than 2 lifetime sex partners, engagement in transactional sex, being multiparous, and drug use were associated with sexual violence among women in HIV negative concordant unions.

We used multivariable logistic regression model to test for the probability of experiencing sexual violence by women in HIV discordant unions exposed to a set of covariates. Table 3 indicates adjusted risk estimates for sexual violence for women in HIV discordant unions.
Table 3: Adjusted estimates for the association between risk factors for sexual violence and HIV discordance during a 4-month period after disclosure of their HIV test results

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Adjusted Odds Ratio</th>
<th>95% CI*</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior sexual violence</td>
<td>51.0</td>
<td>19.5-134.0</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Education status below secondary level</td>
<td>2.0</td>
<td>1.4-2.9</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>History of STD</td>
<td>3.4</td>
<td>1.4-8.1</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Other sexual partners</td>
<td>2.8</td>
<td>1.4-5.6</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>History of condom use</td>
<td>0.4</td>
<td>0.2-0.7</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Multiparous status</td>
<td>4.5</td>
<td>1.3-15.5</td>
<td>0.02</td>
</tr>
<tr>
<td>History of alcohol use</td>
<td>2.2</td>
<td>1.1-4.5</td>
<td>0.02</td>
</tr>
<tr>
<td>History of transactional sex</td>
<td>2.5</td>
<td>1.1-5.9</td>
<td>0.03</td>
</tr>
<tr>
<td>&lt; 18 years age at sexual debut</td>
<td>1.8</td>
<td>0.9-3.6</td>
<td>0.08</td>
</tr>
<tr>
<td>Culture supports sexual violence</td>
<td>6.5</td>
<td>0.7-64.7</td>
<td>0.10</td>
</tr>
<tr>
<td>Unemployment</td>
<td>2.0</td>
<td>0.9-4.6</td>
<td>0.10</td>
</tr>
<tr>
<td>Decision-maker</td>
<td>1.3</td>
<td>0.9-1.7</td>
<td>0.14</td>
</tr>
<tr>
<td>25-34 years of age</td>
<td>0.9</td>
<td>0.6-1.3</td>
<td>0.57</td>
</tr>
<tr>
<td>&gt; 2 lifetime sex partners</td>
<td>1.2</td>
<td>0.6-2.3</td>
<td>0.68</td>
</tr>
</tbody>
</table>

*CI=Confidence interval.

Adjusted estimates were obtained by use of a multivariable logistic regression model that included all the above variables.

Women in HIV discordant unions who had history of sexual violence prior to taking HIV test were at the highest statistically significant risk (about 51 times) of experiencing sexual violence compared to women in HIV negative concordant relationships with history of sexual violence (AOR=51.0, 95% CI 19.5-134.0, p <0.0001). Among women in HIV discordant unions compared to those in HIV negative concordant unions, we found that low education status below secondary level was significantly associated with sexual violence (AOR=2.0, 95% CI 1.4-2.9, p <0.0001). Women in HIV discordant unions who had transactional sex in the past were about 3 times more likely to suffer sexual violence from their partner compared to those in HIV negative concordant unions (AOR=2.5, 95% CI 1.1-5.9, p=0.03). Women in HIV discordant unions compared to those in HIV negative concordant unions who had history of suffering from an STD were about 3 times significantly more likely to experience
sexual violence (AOR=3.4, 95% CI 1.4-8.1, p <0.01). Interestingly, condom use was protective. Condom use significantly reduced the likelihood of sexual violence by 60% among women in HIV discordant relationships compared to those in HIV negative concordant relationships (AOR=0.40, 95% CI 0.2-0.7, p <0.01). Women in HIV discordant cohort who had sexual partners other than the spouse were found to be about 3 times more likely to suffer sexual violence compared to those in HIV negative concordant unions (AOR=2.8, 95% CI 1.4-5.6, p <0.01). Multiparous women in HIV discordant unions were about 5 times significantly more likely to experience sexual violence compared to those in HIV negative concordant unions (AOR=4.5, 95% CI 1.3-15.5, p=0.02). While alcohol consumption by victims of sexual violence in HIV discordant unions compared to those in HIV negative concordant unions was significantly associated with sexual violence (AOR=2.2, 95% CI 1.1-4.5, p=0.02), there was no linear relationship observed between frequency of alcohol consumption by the victim in HIV discordant unions (categorized as once a month, once a week, and everyday) and sexual violence (p-trend=0.67). Women in HIV discordant unions who became sexually active at before 18 years of age were twice more likely to report sexual violence (AOR=1.8, 95% CI 0.9-3.6, p=0.08) compared to their counter parts in HIV negative concordant unions, although this association did not attain levels of statistical significance. Unemployed women in HIV discordant cohort compared to those in HIV negative concordant unions were twice more likely to experience sexual violence, although the association did not attain levels of statistical significance (AOR=2.0, 95% CI 0.9-4.6, p=0.10). Women in HIV discordant unions compared to those in HIV negative concordant unions, who reported that their culture approved of sexual violence
were about 7 times more likely to experience sexual violence, although the association
did not attain levels of statistical significance (AOR=6.5, 95% CI 0.7-64.7, p=0.10).

Discussion

This study examined the hypothesis that the prevalence of sexual violence among
women in HIV discordant union attending post-test club services at AIDS Information
Centers, Uganda differs compared to women in HIV negative concordant union. The
study findings failed to support this research hypothesis, even after adjusting for potential
confounders. The likely explanation for this observation may have been due to disclosure
bias which may have led to underestimation of the prevalence of sexual violence.

Besides, women who go for VCT services may be at less risk of sexual violence
compared to those who do not go. Further more, by assessing occurrence of sexual
violence within only a 4-month follow up period, some incidents of sexual violence after
disclosure of HIV test result may have been missed. However, several factors namely:
low education level, history of transactional sex, prior experience of sexual violence,
history of STD, having other sexual partners, history of alcohol use, and multiparity,
were shown to be correlated with sexual violence among women in HIV discordant
unions compared to those in HIV negative concordant unions. These findings suggest that
sexual violence against women in HIV discordant unions is more likely related to
socioeconomic and/or behavioral factors than to HIV serostatus itself (Koenig et al.,
2002). A significant proportion of women in HIV discordant relationship had partners
who were sexually abusive prior to taking HIV test. This may be an indicator that the
prevalence of sexual violence against women is high in the general population. The
strong association between history of STD and sexual violence among women in HIV discordant relationship is an indicator of the problem of high risk behavior for STDs among couples and/or inadequate availability of quality STD services. Association between multiparity and sexual violence is explained by the fact that some multiparous women do not get superior sexual satisfaction because of the psychological strains of parenting that some women get, contributing to diminished frequency and desire for sexual intercourse which may lead to sexual violence (Botros et al., 2003).

The two groups did not differ with regard to age, marital status, religion, and the decision-maker within the household. However, lower socioeconomic status, education below the secondary school, and unemployment (indicators of lower socioeconomic status), are inversely associated with sexual violence among women in HIV discordant unions. This corroborates findings by other researchers which showed that components of socioeconomic status such as education and employment may be linked with protective behavior such as safer sexual behavior such as use of condoms, avoiding transactional sex and multiple sexual partners, and avoiding use and abuse of harmful substances (Kamali et al., 2003). Our findings contrasted with some studies which showed that women in HIV discordant relationships were more likely to be more educated, employed, and have higher incomes than women in HIV negative concordant relationship (Malamba et al., 2006). Reported culture which supports sexual violence and control of resources within the household being the sole domain of the man, were not associated with sexual violence. The absence of association between sexual violence and reported culture that supports sexual violence and the man being the sole controller of the household resources may have been as a result of the larger proportion of study participants being educated.
Prevailing socio-cultural values define the gender norms of men and women in conservative rural communities to include power, roles, responsibilities, and obligations (Koenig et al., 2003). These values typically promote power imbalance between men and women with sexual violence as one of the consequences (Koenig et al., 2003).

While behavioral risk factors associated with sexual violence in both women in HIV discordant unions and those in HIV negative concordant unions included: prior report of sexual violence, history of STD, and report of having other sexual partners, risk factor peculiar to women in HIV discordant unions were involvement in transactional sex and alcohol consumption. The only behavioral risk factor associated with sexual violence that was peculiar to women in HIV negative concordant unions was early age of sexual debut below 18 years. In this study, alcohol consumption by the women in HIV discordant group was strongly associated with sexual violence. It was shown elsewhere that women who consumed alcohol were almost three times at risk of violence than those who did not (Dunkle et al., 2004a). Alcohol consumption is rife in Uganda; it does not only promote sexual violence, it is also a barrier to behavior change (Asiimwe et al., 2003).

Study participants in our analysis were predominantly urban residents since the three respective AICs sampled were located in major towns. These results may not generalize to rural populations. Data collected were self-reports. Since sexual violence does not have social desirability it was likely that the accounts of the women were not exaggerated. It is also possible that some of the women may not have disclosed the experiences of sexual violence given that such issues are usually treated as private family matters. We did not explore the risk factors for sexual violence in relation to contextual
factors among the males. The use of a trained and experienced counselor for data
collection had many advantages that enhanced the quality of this study; study participants
were familiar with the counselors and were, therefore, likely to have provided truthful
information, based on their already established, trusting relationships.
In conclusion our findings serve to remind providers of VCT and other health care
services that sexual violence among women in HIV discordant union was high, though it
was found to be comparable among women in HIV negative concordant union after
disclosure of the couples’ HIV serostatus. The proportion of abusive partners of women
in HIV discordant relationship who seek VCT services is significant.

Stemming from our finding that prevalence of sexual violence is high among
women in HIV discordant union, programs targeting prevention of sexual violence should
be put in place. Because of the high prevalence of sexual violence among women in HIV
discordant union after disclosure of HIV test result, VCT centers are important focal
points for identification, management and referral of victims of sexual violence.
Interventions aimed at stopping initial violence should be put in place through
appropriate parenting and education curriculum to model positive attitudes among young
boys towards women. Since lower education levels were inversely associated with sexual
violence, strategies aimed at promoting the girl-child education and literacy programs for
women are likely to be beneficial in the prevention of sexual violence. Given the strong
association between alcohol consumption and sexual violence among women in HIV
discordant relationship and the fact that alcohol consumption is rife in Uganda, programs
aimed at preventing sexual violence should target alcohol abuse. Prevention programs
should also target other underlying factors such as early initiation of sexual intercourse,
transactional sex, STDs, and having multiple sexual partners. Given the current knowledge, the known predictors for sexual violence could be used during counseling of women at VCT to describe the characteristics of women in HIV discordant relationship who are at risk of suffering sexual violence. Research focused on evaluation of the available services for STDs should be encouraged with the aim of strengthening the services and improving availability and accessibility as necessary. There is need for further research on the health-seeking behavior of victims of sexual violence.

References


PREVALENCE OF SEXUALLY TRANSMITTED DISEASES AND RISK FACTORS AMONG WOMEN IN HIV DISCORDANT UNION, UGANDA

by

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Submitted to *Sexually Transmitted Infections*

Format adapted for dissertation
Abstract

Background

Women in different HIV serostatus unions (discordant or concordant) who are abused by intimate partners may be at greater risk for infection with sexually transmitted diseases (STDs).

Objectives

To estimate the prevalence of STD and association with sexual violence among women of different HIV sero-status unions attending post-test club services at AIDS Information Centers (AICs) in Uganda.

Methods

From a total of 250 consenting women we did a cross-sectional survey of 180 women who provided vaginal swab for laboratory diagnosis of *Trichomonas vaginalis* (*T. vaginalis*) as indicator for STD.

Results

Prevalence of STD was 21.0% among women in HIV discordant unions (i.e., relationship in which one partner is HIV positive and the other is not) compared to 3.0% among those in HIV negative concordant unions (OR=2.6, 95% CI 0.8-8.4, p=0.08). The prevalence of STD among women in HIV discordant unions who reported sexual violence was 19.0% and it was 0% among women in HIV negative concordant unions who reported experience of sexual violence (OR=1.2, 95% CI 0.5-2.3, p=0.9).
Conclusions

The was no difference in the prevalence of and risk factors for STD between women in HIV discordant unions and those in HIV negative concordant unions, and no difference in prevalence of STD between women in HIV discordant unions who reported sexual violence and those in HIV. Findings support augmentation of STD screening efforts and prevention activities among women in HIV discordant unions attending post-test club services at AICs in Uganda.

Introduction

Sexually transmitted diseases (STDs) including Human Immunodeficiency Virus (HIV) that causes Acquired Immune Deficiency Syndrome (AIDS) are serious public health problems in Uganda (Orroth et al., 2006). About 1 million adults in a population of 25 million were estimated to have been infected with HIV in 2005 (MOH & ORC Macro, 2006; UBOS, 2001), and 520,000 Ugandan women aged 15-49 years had AIDS in the same year (MOH & ORC Macro, 2006). Prevalence and incidence of other STDs are equally high in the country (UBOS, 2001). Approximately 10% of adult outpatient attendances are for STD care (Roseberry et al., 1994).

HIV-serodiscordant relationship is one in which one partner is infected with HIV and the other is not (van der Straten et al., 1998). In these types of relationships, managing emotional and sexual intimacy is challenging because of concerns about HIV transmission, the burden of initiating and maintaining safer sex, and the health status of the affected partner. These factors may contribute to changes in sexual desire and increases in psychosexual problems (Widom & Kuhns, 1996) which may escalate sexual
violence (WHO, 2002). In addition to physical force, sexual violence often involves psychological intimidation, threats of physical harm, of being dismissed from a job by a man or of not obtaining a job that is sought (WHO, 2002). It may also occur when the person aggressed is unable to give consent, for example, while drunk, drugged, asleep or mentally incapable of understanding the situation (WHO, 2002).

Sexually transmitted diseases constitute important surrogate markers of HIV risk (Quinn, 1996; Peterman et al., 2000; Schacter, 2000). Given the relationship between sexual violence and increased susceptibility to HIV, the prevalence of STDs among women in various HIV serostatus (discordant or concordant) unions may be an important proxy for sexual risk behaviors as well as the need for access to sexual health services. There are specific demographic, economic, and behavioral characteristics that promote STDs, and studying them is important when examining the relationship between STDs and the HIV serostatus of women. Such characteristics may include: being young, use of alcohol and other drugs, history of sexual abuse, having multiple sex partners, involvement in sex work, low level of education, and poverty (Koenig et al., 2003; Dunkle et al., 2004b). Identifying these risk factors provides us with insight into the characteristics of women in HIV discordant and concordant relationships who develop STDs. It also helps to ascertain whether prevalence of STDs is higher among women in HIV discordant unions as compared to those in HIV negative concordant relationships. This is important in designing better targeted interventions to address the problem of STDs among women of different HIV serostatus. This study focused on the following objectives: 1. To estimate the prevalence of STDs among women of different HIV serostatus attending HIV post-test club services at AIDS Information Centers (AICs) in
Uganda; 2. To identify specific characteristics (demographic, economic, and behavioral) associated with STDs among the women; and 3. To investigate association between sexual violence and STDs among women in HIV discordant unions. We investigated the hypothesis that there was a difference in the prevalence of STDs among women in HIV discordant unions compared to women who are in HIV negative concordant unions.

Materials and Methods

Study Setting

The study was carried out at AIDS Information Centers (AICs) in three cities of Kampala, Jinja, and Mbale in Uganda. The population of Kampala, Jinja, and Mbale consist of mainly Bantu tribal groupings (UBOS, 2001). Most inhabitants of the three cities mentioned above understand or speak Luganda, a Bantu language dialect of the Ganda people (UBOS, 2001). AIC is a non-government organization founded in 1990 to provide voluntary HIV counseling and testing (VCT) services. Uganda’s AIC is an exceptional model of a VCT centre, offering individualized counseling, HIV testing, and a wide range of other services that include reproductive health services (including STD prevention and management, family planning services), tuberculosis prevention, management of other medical conditions, and outreach services (Painter, 2001; AIC, 2004). The Kampala center provides services to individuals within the metropolitan Capital city of Kampala and such other surrounding districts as Masaka, Sembabule, Mukono, Luwero, Kalangala, and Nakasongola (AIC, 2004). The Jinja center is located Jinja town and provides services to individuals within districts of Jinja, Kamuli, and Kayunga (AIC, 2004). The Mbale center is allocated in Mbale town and provides
services to individuals in and around the districts of Mbale, Sironko, Pallisa, Tororo, Busia, and Kapchorwa (AIC, 2004). At the end of 2004, the client base of the AICs included 25,193 individuals at the Kampala center, 8,459 at the Jinja center and 6,707 at the Mbale center (AIC, 2004).

Study Population

Study participants were women in HIV discordant union (i.e., the woman is infected but the male partner is not or the male partner is infected but the woman is not). Comparison subjects were women in HIV negative concordant union (i.e., both the man and woman are negative for HIV). All study participants had received HIV antibody test and knew their HIV serostatus prior to the study. AICs use the Capillus HIV-1/HIV-2 assay (Cambridge Diagnostics) to test for HIV. This rapid, same-day, on-site test provides sensitivity, specificity, positive and negative predictive values comparable to that of the enzyme immunoassay (EIA) used by the Uganda National Blood Bank (Kassler et al., 1998). As part of quarterly quality assurance, randomly sampled HIV test results at AIC obtained by the use of Capillus HIV-1/HIV-2 assays are confirmed by the ELISA test at the National Reference Laboratory at the Uganda Virus Research Institute (AIC, 2004).

Sample Size

We based our sample size calculation on the 27% prevalence level of sexual violence reported among married women in one district in Uganda (Koenig et al., 2004). Using PS, a computer software application for power and sample size calculation
developed by Dupont and Plummer (1990), this rate (27%) was used to estimate the minimum sample size required to detect a relative risk of 2.0. We set the confidence level at 95% and incorporated a design effect of 1.95 to account for clustering. We increased the sample size by 20% to account for anticipated non-response based on previous local studies (Gray et al., 1998; Weidle et al., 2002). The required sample size for the study was estimated to be 250 women. Using the proportional sampling approach based on client population sizes of the three AICs, we randomly approached and solicited the participation of 155 women from Kampala, 53 from Jinja, and 42 from Mbale. Overall, we solicited the participation of 148 women (74 were HIV positive and 74 HIV negative) for the study group and 102 for the comparison group.

*Enrollment of Study Participants*

Married women or those co-habiting with a male partner for at least six months prior to commencement of the study, aged 18 years or older, whose HIV serostatus had already been ascertained, and were attending post-test club services at any of the three AICs were included in the study.

Women who had antibiotic treatment within two weeks prior to the study, and those in HIV positive concordant relationship (i.e., both spouses are HIV positive) were excluded from the study. Male partners of the women were also excluded to minimize response bias from the study participants due to fear of likely retaliation from the male partners for disclosing information relating to sexual violence.

With permission from the Executive Director for AIDS Information Center, potentially eligible participants were approached at the time of receiving their test results
and their voluntary participation was solicited. Those who volunteered to participate and met the inclusion criteria were sent to a senior counselor who obtained informed consent using a standard informed consent form. Study participants signed informed consent forms and were assigned a study identification number to ensure confidentiality. Participation in the study was voluntary and no incentives were offered. The study was reviewed and approved by the Institutional Review Board (IRB Protocol #F060417005) of the University of Alabama at Birmingham.

Data Collection

Data collection instrument. A structured questionnaire consisting of 20 closed and 10 open-ended items was developed based on a comprehensive review of the literature, and validated through a series of reviews by all investigators (including a survey methodologist). The questionnaire consisted of the following three domains: sociodemographic characteristics, HIV serostatus of the women and experience of sexual violence, and risk factors for sexual violence.

The section on sociodemographic characteristics covered basic sociodemographic characteristics of participants; including age, gender, tribe, marital status, religion, education, and employment status of the women. The section on HIV serostatus of the women and experience of sexual violence elicited information about the HIV serostatus of the women (obtained via their VCT records) and self-reported history of sexual violence. Based on the literature (Dunkle et al., 2004b; Ohene et al., 2005), selected risk factors sexual violence included being young, age at sexual debut, number of lifetime sexual
partners (i.e., number of sexual partners the woman has ever had), transactional sex, parity, history of STDs, condom use and alcohol consumption.

*Internal consistency of the questionnaire.* We measured internal consistency (Janda, 1998) of the questionnaire by creating a composite variable using the 5 items for measuring sexual violence namely: verbal threat, having been hit, punched, pushed, and slapped giving an internal consistency (Cronbach’s alpha) of 0.95. Cronbach’s alpha of 0.70 and above indicate good levels of reliability (Nunnally & Bernstein, 1994).

*Laboratory data collection procedure.* A standard laboratory data extraction form was used to record results of STD test. From each of the eligible study participant, a vaginal swab was taken for testing *T. vaginalis*. This organism were chosen as indicator of STD because of its high prevalence 23.8% among women in Uganda, compared to *Neisseria gonorrhea* (*N. gonorrhea*) 1.5%, *Trachomatis chlamydia* (*T. chlamydia*) 2.4% (Paxton *et al*; 1998), and syphilis 3.3% (MOH & ORC Macro, 2006); and its low cost of determination in comparison to tests for such other STDs such as *T. chlamydia* and *N. gonorrhea* (Kristin & Biro, 2001). Laboratory tests were conducted by a trained Laboratory Technician at Makerere University Medical School. Participants were asked, after coaching, to collect specimen from the posterior fornix of the vagina. They used a self-administered cotton dacron swab, inserted deeply into the vagina and gently rotated for approximately 10 seconds (Wendel *et al*., 2002). The swab was then used for wet preparation for testing for *T. vaginalis* (Wendel *et al*., 2002).

*T. vaginalis* was detected by the use of wet preparation technique in which swab specimens were mixed in 3 drops of normal saline and then placed on a slide for microscopic examination (Wendel *et al*., 2002). The slides were then evaluated at
magnifications of ×100 for evidence of motile *T. vaginalis* (Wendel et al., 2002). Using the presence of an STD (*T. vaginalis*) as the primary outcome, we compared the prevalence of STD among women in HIV discordant unions and those in HIV negative concordant unions.

*Data Analysis*

Double entry of data into Excel database was done before analysis to maximize consistency and prevent entry errors. The data were then cleaned and imported into SAS computer software (SAS Institute Inc; 2004) for analysis. We calculated prevalence of STD among women in the two HIV serostatus groups by dividing counts of women diagnosed with STD by the total number of women in each group multiplied by 100. Chi-square tests were carried out to estimate the differences in the prevalence of STDs among women in heterosexual HIV discordant union and those in heterosexual HIV negative concordant union. Effect modification and confounding were evaluated in stratified 2×2 tables. Crude odds ratios (OR) for each of the outcome measures were generated using 2×2 contingency tables while adjusted odds ratios (AOR) were obtained from a multivariable logistic regression model that controlled for the effects of current age of the woman, age at sexual debut, number of lifetime sexual partners, transactional sex, parity and whether the woman was pregnant at the time, history of STDs, condom use, drug and alcohol consumption. We employed the likelihood ratio tests to determine model fit (Clayton & Hill, 1993), and estimated the significance of main effects using the Wald test (Clayton & Hill, 1993). All tests of hypothesis were two-tailed with type 1 error rate fixed at 5%.
Results

In line with the objectives of the study, the results are presented in the following order: 1) sample characteristics; 2) the prevalence of STDs among women of different HIV serostatus attending HIV post-test club services at selected AICs in Uganda; 3) risk factors for STDs among women in HIV discordant unions attending HIV post-test club services at selected AICs in Uganda; and 4) association between sexual violence and STDs among women in HIV discordant unions attending HIV post-test club services at selected AICs in Uganda.

Sample Characteristics

Of a total of 250 women who met the inclusion criteria, only 180 (72%) provided samples for the STD tests. Of these 180 participants, 131 were in HIV discordant relationships and 49 were in HIV negative concordant relationships. Of those in HIV discordant relationship, 38.2% (n=50) were of the Ganda tribe and 61.8% (n=81) were non-Ganda. Among those in HIV negative concordant unions, 28.6% (n=14) were of the Ganda tribe and 71.4% (n=35) were non-Ganda. Women in the two study groups were of similar sociodemographic characteristics as presented in Table 1. Women in the two cohorts had comparable mean ages (Table 1).
Table 1: Selected sociodemographic characteristics of women, by HIV serostatus

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women in HIV discordant union N=131</th>
<th>Women in HIV negative concordant union N=49</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>34.0 (SD ± 10.4)</td>
<td>32.8 (SD ± 11.6)</td>
<td>0.5</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24 years</td>
<td>28 21.4</td>
<td>13 26.5</td>
<td>0.38</td>
</tr>
<tr>
<td>25-34 years</td>
<td>41 31.3</td>
<td>16 32.7</td>
<td></td>
</tr>
<tr>
<td>&gt; 34 years</td>
<td>62 48.3</td>
<td>20 40.8</td>
<td></td>
</tr>
<tr>
<td>Tribe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ganda</td>
<td>50 38.2</td>
<td>14 28.6</td>
<td>0.09</td>
</tr>
<tr>
<td>Non-Ganda</td>
<td>81 61.8</td>
<td>35 72.4</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>93 71.0</td>
<td>35 71.4</td>
<td>0.95</td>
</tr>
<tr>
<td>Living together</td>
<td>38 29.0</td>
<td>14 28.6</td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>9 6.9</td>
<td>4 8.2</td>
<td>0.29</td>
</tr>
<tr>
<td>Primary</td>
<td>32 24.4</td>
<td>6 12.2</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>41 31.3</td>
<td>15 30.6</td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>49 37.4</td>
<td>24 49.0</td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>111 84.7</td>
<td>42 85.7</td>
<td>0.87</td>
</tr>
<tr>
<td>Unemployed</td>
<td>20 15.3</td>
<td>7 14.3</td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>95 72.5</td>
<td>36 73.5</td>
<td>0.57</td>
</tr>
<tr>
<td>Muslim</td>
<td>32 24.4</td>
<td>10 20.4</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4 3.1</td>
<td>3 6.1</td>
<td></td>
</tr>
</tbody>
</table>

*P-values were generated by using \( \chi^2 \) tests for differences of proportions between the two HIV serostatus categories. Comparison of group means of continuous variable was performed using the student’s t-test.

†Age range, 18.0-65.0 years.
‡Age range, 18.0-60.0 years.

Prevalence of STD

While the prevalence of *T. vaginalis* 21.0% among women in HIV discordant unions was higher compared to 3.0% among women in HIV negative concordant unions,
the observed difference in prevalence was not statistically significant (OR=2.6, 95% CI 0.8-8.4, p=0.08).

Risk Factors for STD

We carried out bivariate analysis by use of chi-square to compare the occurrence of the risk factors for *T. vaginalis* between the women who were diagnosed with *T. vaginalis* and those who were found to be *T. vaginalis* negative (Table 2). We found 75.0% of women in HIV discordant unions had more than two lifetime sexual partners, compared to 39.0% of women in HIV negative concordant unions (p=0.53). While 12.0% of women diagnosed with *T. vaginalis* reportedly engaged in transactional sex before the beginning of the study, 16.0% of women who were *T. vaginalis* negative reportedly did so (p=0.66). Twenty nine percent of women diagnosed with *T. vaginalis* reported condom use, compared to 41.0% of women who were *T. vaginalis* negative (p=0.27), with only 29.0% of women diagnosed with *T. vaginalis* and 37.0% of women who were *T. vaginalis* negative as consistent condom users. Forty two percent of women who were diagnosed with *T. vaginalis* made a self-report of other sexual partners, compared to 33.0% of women who were found to be *T. vaginalis* negative (p=0.39). A similar proportion 83.0% of women who were diagnosed with *T. vaginalis* reported history of STDs, compared to 60.0% of women who were *T. vaginalis* negative (p=0.2) [Table 2].
Table 2: Risk factors for sexually transmitted diseases among women tested for *T. vaginalis*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Diagnosed with <em>T. vaginalis</em> N=24</th>
<th>T. vaginalis negative N=156</th>
<th>Odds ratio (95% CI*)</th>
<th>P-value**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Age at sexual debut</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 18 years</td>
<td>11</td>
<td>45.8</td>
<td>61</td>
<td>39.1</td>
</tr>
<tr>
<td>&lt; 18 years</td>
<td>13</td>
<td>54.2</td>
<td>95</td>
<td>60.9</td>
</tr>
<tr>
<td><strong>Lifetime sex partners</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 2</td>
<td>18</td>
<td>75.0</td>
<td>95</td>
<td>60.9</td>
</tr>
<tr>
<td>&gt; 2</td>
<td>6</td>
<td>25.0</td>
<td>61</td>
<td>39.1</td>
</tr>
<tr>
<td><strong>Transactional sex work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>21</td>
<td>87.5</td>
<td>131</td>
<td>84.0</td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
<td>12.5</td>
<td>25</td>
<td>16.0</td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparous</td>
<td>2</td>
<td>8.3</td>
<td>26</td>
<td>16.7</td>
</tr>
<tr>
<td>Multiparous</td>
<td>22</td>
<td>91.7</td>
<td>130</td>
<td>83.3</td>
</tr>
<tr>
<td><strong>History of pregnancy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>20.8</td>
<td>52</td>
<td>33.3</td>
</tr>
<tr>
<td>Yes</td>
<td>19</td>
<td>79.2</td>
<td>104</td>
<td>66.7</td>
</tr>
<tr>
<td><strong>History of sexual violence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>62.5</td>
<td>101</td>
<td>64.7</td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>37.5</td>
<td>55</td>
<td>35.3</td>
</tr>
<tr>
<td><strong>History of STD ever</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>16.7</td>
<td>48</td>
<td>30.8</td>
</tr>
<tr>
<td>Yes</td>
<td>20</td>
<td>83.3</td>
<td>108</td>
<td>69.2</td>
</tr>
<tr>
<td><strong>History of condom use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17</td>
<td>70.8</td>
<td>92</td>
<td>59.0</td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>29.2</td>
<td>64</td>
<td>41.0</td>
</tr>
<tr>
<td><strong>Other sexual partners</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>58.3</td>
<td>105</td>
<td>67.3</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>41.7</td>
<td>51</td>
<td>32.7</td>
</tr>
<tr>
<td><strong>History of drug use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>100.0</td>
<td>155</td>
<td>99.4</td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>1.0</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>History of alcohol use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>75.0</td>
<td>115</td>
<td>73.7</td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>25.0</td>
<td>41</td>
<td>26.3</td>
</tr>
</tbody>
</table>

*CI=Confidence interval.
**P-values were generated by using χ² tests for differences of proportions between the two HIV serostatus categories. Where expected cell size was less than 5 the Fisher’s exact test was used.
A multivariable regression model to test for the probability of the presence of
STD among women in HIV discordant unions using a set of covariates, did not produce
statistically significant results as did the bivariate analysis. However, the magnitudes of
the risk factors were slightly elevated among women in HIV discordant unions. Table 3
provides adjusted risk estimates for STD among women in HIV discordant unions
obtained from the multivariable regression model.

Table 3: Adjusted estimates for the association between risk factors for sexually
transmitted disease and HIV discordance

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Unadjusted Odds Ratio</th>
<th>Adjusted Odds Ratio</th>
<th>95% CI*</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34 years of age</td>
<td>0.9</td>
<td>1.1</td>
<td>0.6-2.1</td>
<td>0.7</td>
</tr>
<tr>
<td>&lt; 18 years age at sexual debut</td>
<td>1.1</td>
<td>1.0</td>
<td>0.2-2.0</td>
<td>0.9</td>
</tr>
<tr>
<td>History of transactional sex</td>
<td>1.2</td>
<td>2.4</td>
<td>0.5-10.9</td>
<td>0.3</td>
</tr>
<tr>
<td>Education status below secondary level</td>
<td>1.1</td>
<td>1.1</td>
<td>0.6-2.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Unemployment</td>
<td>1.1</td>
<td>0.3</td>
<td>0.1-1.2</td>
<td>0.08</td>
</tr>
<tr>
<td>&gt; 2 lifetime sex partners</td>
<td>1.6</td>
<td>0.6</td>
<td>0.2-2.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Multiparous status</td>
<td>0.9</td>
<td>1.7</td>
<td>0.2-1.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Previous sexual violence</td>
<td>1.0</td>
<td>1.2</td>
<td>0.4-3.8</td>
<td>0.8</td>
</tr>
<tr>
<td>None condom use</td>
<td>1.3</td>
<td>1.6</td>
<td>0.5-4.9</td>
<td>0.4</td>
</tr>
</tbody>
</table>

*CI=Confidence interval.
Adjusted estimates were obtained by use of a multivariable logistic regression model that included all the
variables in the table.

Association between Sexual Violence and STD

Prevalence of STD among women in HIV discordant unions who suffered sexual
violence 19.0% (n=8) was similar to that among women in HIV negative concordant
unions who had suffered sexual violence 0% (n=0) [OR=1.2, 95% CI 0.5-2.3, p=0.9].
Prevalence of STD among women in HIV discordant unions who suffered sexual
violence was similar to that among women in HIV negative concordant unions who
suffered sexual violence.
Discussion

This study was driven by the hypothesis that there was a difference in prevalence of STDs among women in HIV discordant unions attending post-test club services at AIDS Information Centers, Uganda, compared to women who are in HIV negative concordant unions. The hypothesis was not confirmed by the observation of similar prevalence of STD among women in HIV discordant relationships being similar to that among women in the two groups.

Unexpectedly the prevalence of STD was not related to socioeconomic and behavioral characteristics among women in HIV discordant unions. The prevalence of STD among this group did not have an inverse relationship with education and employment status. This finding is not in agreement with those of other researchers who showed that components of socioeconomic status such as education and employment were linked with protective behavior (Kamali et al., 2003). Persons of low education status or who were unemployed are generally at higher risk of poor health status including STDs (Prus, 2007). This may be because educational level is directly related to better understanding of health education messages, and education leads to higher incomes which are related to improved access to health care, including reproductive health services (Prus, 2007).

Similarly sexual behavior risk factors such as: sexual debut before 18 years of age, having more than two lifetime sexual partners, being multiparous, and having other sexual partners besides the current partner, which have been shown in literature to be associated with STDs (Ohene et al., 2005; Hanson et al., 2005) were not associated with STDs among women in HIV discordant relationships in this study. Reasons for the
findings may have been because of some false negative STD results, and the small sample size that reduced the power of the study. Furthermore, unobserved variables such as treatment for STDs received prior to coming to AIC for VCT services and the risk factors for STDs in the study participants’ spouses/partners that were not accounted for may have led to lack of association between STDs and risk factors among women in HIV discordant union. It is also possible that the observed borderline difference in prevalence of STDs between women in HIV discordant unions and those in HIV negative concordant unions is due to the difference in the HIV serostatus of the two groups and differences in sexual behavior of the women in the two groups. The slightly higher prevalence of STDs among women in HIV discordant unions in this study may suggest a reluctance to use condoms, waning immunity, poor quality of STD services and has implications for prevention of STDs, including HIV/AIDS, in the country.

The prevalence STD among women in HIV discordant relationships who had suffered sexual violence was comparable to that among their counter-parts in HIV negative concordant relationships who had suffered sexual violence. This is explained by the fact that the risk factors for sexual transmission of HIV namely, multiple sexual partners, or engaging in transactional sex, which are also more prevalent among women with history of sexual violence (Dunkle et al., 2004), are also risk factors for STDs (Hanson et al., 2005). The non-significant difference in STD prevalence between women in the two groups may have been as a result of small sample size and information bias.

Given the fairly low response rate recorded in this study, the findings may be limited in its generalization. Further, this being a cross-sectional study does not permit cause-effect inferences or conclusions on predictive relationships to be made. With the
AICs being in major towns in Uganda, our sample is predominantly urban, and the findings may not be generalized to non-urban settings.

The above limitations notwithstanding, this study has demonstrated the fact that prevalence of STD among women in HIV discordant union is of concern. These findings demonstrate the need for public health practitioners in AICs in Uganda to intensity STD screening and prevention activities such as health education, targeting condom use promotion, and other STD risk reduction programs to women in HIV discordant unions. In this population there is/are probably some other factor(s) involved in explaining why the prevalence of STDs is not related to the risk factors for STDs, hence an avenue for future research.

References


EXPERIENCE OF SEXUAL VIOLENCE AMONG WOMEN IN HIV DISCORDANT UNION AFTER VOLUNTARY HIV COUNSELING AND TESTING: A CRITICAL INCIDENT TECHNIQUE ANALYSIS

by

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Format adapted for dissertation
Abstract

Background

HIV-serodiscordant relationship is one in which one partner is infected with HIV and the other is not. In this type of relationship, managing emotional and sexual intimacy is challenging because of concerns about HIV transmission and the burden of initiating and maintaining safe sex. These factors may contribute to changes in sexual desire and increases in psychosexual problems that may escalate sexual violence.

Objectives

To investigate the lived experiences of sexual violence among women in HIV discordant union attending post-test club services in Uganda.

Methods

Qualitative critical incident interviews were done on a one-to-one basis with twenty-six women in HIV discordant unions who had experienced sexual violence after the disclosure of their HIV test results. Data were analyzed using the TEXTPACK computer software application.

Results

Overall, four themes that characterize the women’s experiences of sexual violence emerged from the analysis: knowledge of HIV test results, prevalence of sexual violence, vulnerability and proprietary views, and reactions to sexual violence. Incidents of sexual violence narrated by the women included use of physical force and verbal threats.
Majority (77%) of the women had told someone (their parents, the perpetrator’s parents, friends, sisters, brothers, doctor, and pastor) about their experience prior to the study interview. However, none reported their experience to the law enforcement authority. Victims of sexual violence viewed themselves as vulnerable and dependent on the men. Their experience evoked different reactions and feelings, including concern over the need to have children, fear of infection, desire to separate from their spouses/partners, helplessness, anger and suicidal tendencies. Alcohol abuse on the part of the male partners was an important factor in the experience of sexual violence among the women.

Conclusion

Disclosure of HIV test results heightened sexual violence among women in HIV discordant unions in Uganda. There is need for services and policies that target prevention and mitigation of impact of sexual violence against women.

Introduction

Sexual violence poses a serious public health problem and affects millions of women worldwide (World Health Organization [WHO], 2002). It is an important component of domestic violence (WHO, 2002) and has been linked to risks for Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) through various mechanisms (Dunkle et al., 2004a). Sexual violence is defined as any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to
the home or the workplace (WHO, 2002). In addition to physical force, sexual violence often involves psychological intimidation, threats of physical harm, of being dismissed from a job or of not obtaining a job that is sought (WHO, 2002). Sexual violence may also occur when the person aggressed is unable to give consent, for example, while drunk, drugged, asleep or mentally incapable of understanding the situation (WHO, 2002; Garcia-Moreno et al., 2006).

A study in Tanzania found that women infected with HIV were significantly more likely to have had a physically violent partner at some time and to have experienced physical and/or sexual violence with a current partner (Maman et al., 2002). By 1993, 31% of girls in primary school had been forced to have sex (Bagarukayo et al., 1993). In Uganda the magnitude of sexual violence by men against women in Uganda has increased as demonstrated by Heise et al. (1995), who found that 22% of adult women in Uganda experienced sexual violence. A more recent population-based survey of women of reproductive age in a rural district in the country (Koenig et al., 2004) revealed a prevalence rate of 26.6% among women in sexually active relations. Although sexual violence against women has received increasing attention in many industrialized nations (Chermiak et al., 2005), it has received little emphasis in less developed countries, including Uganda, perhaps due to cultural reasons, resource limitations and a plethora of other competing public health challenges (McMichael et al., 2005).

Sexual violence negatively affects women’s physical and emotional well-being. It may lead to such physical effects as sexually transmitted diseases (Wingood et al., 2000), unwanted pregnancy (Holmes et al., 1996), chronic pelvic pain, premenstrual syndrome, gastrointestinal disorders, gynecological and pregnancy-related complications, migraines
and other frequent headaches, back pain, facial pain, and disability preventing work (Jewkes et al., 2002). Sexual violence has also been associated with psychological consequences including shock, denial, fear, confusion, anxiety, withdrawal, guilt, nervousness, distrust of others, depression, and symptoms of post-traumatic stress disorder (Ackard & Neumark-Sztainer, 2002; Faravelli et al., 2004; Ystgaard et al., 2004). Social consequences of sexual violence include engaging in high-risk sexual behavior resulting in unprotected sex, transactional sex, and using or abusing harmful substances.

Partner’s HIV risk status has also been found to be strongly associated with sexual violence (Koenig et al., 2004). Presumably, a heightened suspicion leads to women’s reluctance to have sex with their partners, provoking the use of force by the male partners. Blanc et al. (1996) found that a woman’s refusal to have sex with her male partner reflects a failing relationship that usually breeds suspicion of high risk of HIV. Studies conducted in Tanzania, Rwanda, and South Africa (van der Straten et al., 1998; Dunkle et al., 2004a; Maman et al., 2002) showed up to three-fold increase in risk for HIV among sexually abused women compared to those who were not. In Uganda, women with histories of sexual abuse were eight times as likely to be infected with HIV as women who were not (Quigley et al., 2000).

HIV-serodiscordant relationships are those in which one partner is infected with HIV while the other is not (van der Straten et al., 1998). In these relationships, managing emotional and sexual intimacy is challenging because of concerns about HIV transmission, the burden of initiating and maintaining safer sex, and the health status of the affected partner. These factors may contribute to changes in sexual desire and
increases in psychosexual problems that may escalate domestic violence (Widom & Kuhns, 1996). A study carried out in Uganda (Serwadda et al., 1995) showed that in a relationship in which the husband is HIV-negative and the wife is HIV-positive, condom use is higher than if the man was HIV-positive and the wife HIV-negative.

In spite of ample research on sexual violence, no study has examined the association between sexual violence and being in an HIV discordant relationship for women in Uganda, where sexual violence is aggravated by cultural and economic factors. This is an important gap in knowledge since sexual violence has serious implications for women’s health, and designing appropriate interventions strategies requires thorough knowledge of the contextual factors of sexual violence. To address this apparent gap in knowledge, we investigated the lived experiences of sexual violence among women who were in HIV discordant union and were attending post-test club services at selected AIDS Information Centers (AICs) in Uganda.

Materials and Methods

Design

This was a qualitative study using the critical incident technique (CIT) [Flanagan, 1954]. CIT involves five steps, namely: 1) determining the study’s aims, 2) planning how incidents will be collected, 3) collecting the data, 4) analyzing the data, and 5) interpretation and reporting on data (Flanagan, 1954). When used in this way, CIT is analogous to phenomenology which provides the basis for classification or the development of disease definitions, diagnostic categories, or dimensional classifications (Kemppainen, 2000; Polit & Hungler, 1995; Andreasen, 1991).
Study Setting and Participants

The study was carried out at three AIDS Information Serostatus (AICs) located in Kampala, Jinja, and Mbale in Uganda. AIC, a non government organization was founded in 1990 to provide VCT for HIV. Uganda’s AIC is an exceptional model of a VCT centre, offering individualized counseling and HIV testing, and a wide range of other services that include: reproductive health services (including sexually transmitted disease [STD] management, contraceptive/family planning services, condom provision, and health education), tuberculosis prevention, management of other medical conditions, outreach services and post-test club services among others (AIC, 2004, Painter 2001). As at the end of 2004, the client base of AICs included 25,193 individuals for the Kampala center, 8,459 for Jinja center and 6,707 for Mbale center (AIC, 2004).

As the qualitative component of a larger study of sexual violence among HIV discordant couples in Uganda, participants were a random sample of 26 women drawn from a pool of 100 women in HIV discordant union, attending post-test club services at selected AIDS Information Centers (AIC) in Uganda, and who reported experiences of sexual violence in a preliminary questionnaire survey. The aim was to gain a deeper understanding of the nature and contexts of their experiences of sexual violence via a qualitative approach. Random probability selection was done without replacement. The random selection was done by the investigator printing off the list of participants’ assigned study identification numbers (ID) of 100 women who were in HIV discordant unions, tearing them into individual ID strips, putting the strips in a hat, mixed them up thoroughly, and with eyes closed, pulled out the first 35 participant IDs. The first 26 women who agreed to participate were interviewed. This study was approved by the
Institutional Review Board (IRB) of University of Alabama at Birmingham (UAB), IRB Protocol #F060417005.

All study participants previously received HIV antibody testing with their HIV serostatus disclosed to them. The Capillus HIV-1/HIV-2 assay (Cambridge Diagnostics) is used to test for HIV at the AICs. This rapid, same-day, on-site test has sensitivity, specificity, positive predictive and negative predictive values comparable to that of the enzyme immunoassay (EIA) used by the Uganda National Blood Bank, although the latter service does not provide same day results (Kassler et al., 1998). As part of quarterly quality assurance, randomly sampled HIV test results at AIC obtained by the use of Capillus HIV-1/HIV-2 assay are confirmed using ELISA test (AIC, 2004). With permission from the Executive Director of the AIC, potentially eligible participants were informed about the study and the objectives were explained to them. At the time of receiving their HIV test results and following a detailed explanation, their permission to participate was sought and they were invited to provide informed consent.

Data Collection

Women who volunteered to participate gave written informed consent, were assured of confidentiality, and were interviewed by a trained and experienced counselor at AIC on a one-to-one basis, using an interview guide (Table 1). The interview guide was constructed based on available literature and with the assistance of a multidisciplinary team that included a Gynecologist, Social Epidemiologist, and a Senior Nurse. The use of a trained and experienced counselor for data collection had many advantages that enhanced the quality of this study. Study participants were familiar with
the counselor and were therefore, likely to have provided truthful information, based on their already established, trusting relationships with the counselor.

Table 1: Interview Guide Questions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What were your family sexual life experiences before taking HIV test?</td>
</tr>
<tr>
<td>2.</td>
<td>What were your family sexual life experiences after taking HIV test?</td>
</tr>
<tr>
<td>3.</td>
<td>If you experienced sexual violence after HIV test, what was the abuse that you experienced?</td>
</tr>
<tr>
<td>4.</td>
<td>Did the sexual abuse increase in frequency after the HIV test?</td>
</tr>
<tr>
<td>5.</td>
<td>Under what circumstances did the sexual abuse take place?</td>
</tr>
<tr>
<td>6.</td>
<td>Did you tell anyone about the incident before now? If yes, who did you tell?</td>
</tr>
<tr>
<td>7.</td>
<td>If you did not tell anyone, give the reasons for not doing so.</td>
</tr>
<tr>
<td>8.</td>
<td>Why do you think your partner perpetuates sexual violence?</td>
</tr>
<tr>
<td>9.</td>
<td>Describe how the sexual abuse happened, and how you felt after the experience.</td>
</tr>
</tbody>
</table>

The interviews were conducted in dialogue form at the respective AICs; each lasted about 30 minutes. This was a one-time data collection with no follow up interviews conducted. All interviews were audio-recorded with the permission of respondents and transcribed verbatim.

Data Analyses

Data were analyzed using the TEXTPACK computer software for qualitative data analysis, version, 7.5 (Mohler & Zuell, 1998). Each interview was transcribed by a trained field worker and carefully reviewed for accuracy and uploaded into TEXTPACK. In CIT, analysis usually takes the form of inductive classification and construction of a hierarchy of categories. Often, this process involves sorting incidents into clusters that seem to ‘fit’ together and necessarily a subjective one (Flanagan, 1954). Using the software, transcripts of interviews were coded and classified according to a user dictionary that was made. We generated tabulations with category frequencies, category
sequences, and emerging themes. We then identified critical incidents experienced by each respondent, namely, the different components of sexual violence perpetuated against them by their spouse/partner after undergoing voluntary HIV counseling and testing and discovering the existence of a HIV discordant union. These incidents were then arranged into larger categories and themes.

Results

The mean age of study participants was 30.2 years (SD ± 9.3), ranging from 19 to 55 years (Table 2). Majorities (80.8%) of the women were married; most (42.3%) have educational status above the secondary school level. About half (53.8%) of the participants were HIV negative.
Table 2: Demographic Characteristics of the Participants

<table>
<thead>
<tr>
<th></th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ± SD</td>
<td>30.2 ± 9.3</td>
</tr>
<tr>
<td>Median</td>
<td>27.5</td>
</tr>
<tr>
<td>Range</td>
<td>19-55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital status</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-habiting</td>
<td>5 (19.2%)</td>
</tr>
<tr>
<td>Married</td>
<td>21 (80.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>26 (100.0%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1 (3.8%)</td>
</tr>
<tr>
<td>Primary</td>
<td>4 (15.4%)</td>
</tr>
<tr>
<td>Secondary</td>
<td>10 (38.5%)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>11 (42.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>26 (100.0%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HIV serostatus</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Discordant negative</td>
<td>14 (53.8%)</td>
</tr>
<tr>
<td>Discordant positive</td>
<td>12 (46.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>26 (100.0%)</td>
</tr>
</tbody>
</table>

The women described how they experienced sexual violence (incidents) by their spouses/partners after the results of their voluntary HIV counseling and testing indicated that they were living in an HIV-discordant relationship. The participants narrated how their spouse/partner used physical force and other means to obtain sexual intercourse from them against their will.

The majority, 77.0% (20/26) of the victims had told someone about the incident before they were interviewed. Persons to whom they reported the incident included: their parents, the perpetrator’s parents, friends, sisters, brothers, doctor, and pastor. None of the victims mentioned having reported the matter to the police or any law enforcement authority. About 23.0% (6/26) of the victims of sexual violence did not tell anyone about
the incident because: they felt shy, some thought that the perpetrator would change for
the better, and others feared that they would be chased away from home.

Overall, women’s experiences with violent sex after learning that they were living in HIV
discordant relationship can be grouped into four themes (Table 3): 1) knowledge of HIV
test results, 2) prevalence of sexual violence, 3) vulnerability and proprietary views, and
4) reactions to sexual violence. We next describe each theme in detail.

Table 3: Summary of Themes and Related Categories

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The knowledge of the HIV test result</td>
<td>Alcohol intoxication, Unexpected results, Arguments, Quarrels, Jealousy, Intention of infecting the spouse/partner with HIV, Use of physical force, verbal threats, slapped, beaten, kicked, shouted or yelled at, and held down, Seeking separation, Suspicion of infidelity, HIV negative test result automatically becoming positive with time, Threat of not begetting children because of early death.</td>
</tr>
<tr>
<td>2. Prevalence of sexual violence</td>
<td>High prevalence of sexual violence prior to HIV test, Increased frequency of sexual violence after disclosure of test result.</td>
</tr>
<tr>
<td>3. Vulnerability and proprietary</td>
<td>Dependence on the partner, Fear of the man acquiring HIV infection,</td>
</tr>
</tbody>
</table>
Theme 1: Knowledge of HIV Test Results

Knowledge of HIV positive test results for either a woman or her male partner equally resulted in sexual violence towards the women in the study. Most women, whose tests results were negative, but whose spouses/partners were found HIV positive, described how this knowledge triggered and/or exacerbated sexual violence by their spouse/partner. As participant #01 narrated, "The moment we came back from the testing centre my husband was very annoyed and furious. After we received our HIV test results, he was positive and I was negative. He then started to drink heavily. He would come back home drunk and rape me." Alcohol intoxication played a key role in the commission of sexual violence by a majority of partners of these women. Many participants described how their husbands subjected them to sexual violence under the influence of alcohol. In describing one critical incident, respondent #10 stated, "After we had gone for an HIV test and he tested positive, he started drinking carelessly. When we had just got our test result and he was found to be positive he would come home drunk and rape me. It would mostly occur under the influence of alcohol. Whenever I refused to give him sex he would beat me when he is drunk. But I cannot tell what the intention of my husband was by forcing me into unprotected sex. This always happens when he came home after drinking alcohol."

Following the disclosure of their HIV serostatus some women who sought protected sex through use of condoms were sexually abused by their spouse/partner after becoming embroiled in arguments. Respondent #26 explained, "This happened after the HIV test found him positive and I was negative. So if I ask him to use a condom he slaps me and rapes me. I think he wants me to contract the virus. He is always quarrelling with
me as to why I am not HIV positive. So after having misunderstandings and arguments I always do not feel free to have sex, but he forces me.”

Other men intended to infect their spouses/partners who were found to be HIV negative out of frustration, or perhaps to then turn around and accuse the women of having infected them, a more culturally believable scenario. Respondent #15 described her experiences, as the following: “He feels bad knowing that he is HIV positive and I am not. I think his intention was to make sure that I get infected with HIV; perhaps he could then say that I infected him. The sexual abuse took place under sadistic intentions, and also under the influence of alcohol. I think he also thought that doing all that he was doing would stop me from having extra-marital sexual affairs.” Other victims of sexual violence attributed their victimization to the worries and mental instability that their spouses/partners exhibited upon knowing the positive result of their HIV test. Respondent #02 explained, “I think his mind was disturbed when he was told that he was HIV positive. So he was doing it because of anger. He seems so frustrated and hopeless because he is living with HIV. My husband is frustrated and he is always drunk.” When women were HIV positive in a discordant relationship, they were victimized by their partners as a result of suspicion that HIV infection got into the relationship as a result of their infidelity. Respondent #17 stated, “It is because he believes I must have contracted HIV from other men during extra-marital sexual acts.” For some couples, this knowledge resulted in men perpetuating sexual violence in the bid to frustrate their partner into seeking separation. Respondent #08 narrated how her husband wanted her to leave him after the disclosure of the test results: “He thinks I might do something to infect him also;
therefore he is trying to see that I leave his house. I think he wants me to leave his home.’”

There was also a situation in which a man perpetuated sexual violence because he thought that although his HIV test result was negative, it was only a matter of time before became HIV positive. Respondent #21 stated, “It is because he thinks that even if he is HIV negative now, he will eventually become positive, so he wants sex without a condom.” One man perceived the presence of HIV infection within the relationship as a threat to the desire to have children and as a result and in disregard of the risks, forced the spouse/partner into sexual intercourse. Respondent #11 explained, “His argument was that although he is HIV negative, he believes that he is HIV positive and that we should have at least two children before we die.”

**Theme 2: Prevalence of Sexual Violence**

Violence predominated in the sexual relationship for all the women in the study. Previous sexual victimization prior to voluntary HIV counseling and testing was reported by a significant proportion 69.0% (18/26) of women in HIV discordant unions who experienced sexual violence after HIV test. Respondent #9 said, “Yes, sometimes I experienced sexual violence from my partner before taking the HIV test. He would force me into sex especially when I am not in my moods.”

The frequency of sexual violence in a majority 73.0% (19/26) of couples reportedly increased with knowledge of the fact that they were in an HIV discordant union. Even among some couples who did not have prior history of sexual violence, victimization of the woman by the man ensued after it became known that they were living in a HIV
discordant union. Respondent #19 stated, “Yes, the sexual violence which used not to be there started and increased in frequency after the disclosure of our test results. It started by him being rude to me then it reached a stage whereby every time he wants sex, he would use force to get me to play sex with him against my will, especially when he was drunk.”

Theme 3: Vulnerability and Proprietary Views

The respondents viewed themselves as being vulnerable or dependent on the men. Some women described their being physically weaker than the perpetrator and their dependence on the partner as contributory factors to sexual violence in HIV discordant union. Respondent #25 narrated, “Because he has given up about life, he knows that I am negative so he feels jealous that another man will take me. So, since I am weaker than him he can rape me successfully. He even knows that I depend on him so I cannot leave him.”

From the chain of events that ensued at the time of victimization and remarks made by the man, some women viewed men as being proprietary with subsequent feeling of pain, bitterness and helplessness by the victims. Respondent #23 described her experiences as the following: “One time he came home drunk and found me in bed. He then wanted sex but I asked him to use a condom. He then said bad things about me being his property and threatened to beat me if I say another word. He then played sex with me in a rough way. I felt pain and bitterness in my heart. I am helpless in this situation.”
Theme 4: Reactions to Sexual Violence

Victimized women described their lived experience of sexual violence, and how they felt afterwards. The experience of sexual violence by women in HIV discordant relationship evoked different reactions and feelings among the victims. Respondent #13 described how frustrated she was with her husband’s violent behavior and how she wanted to leave him: “The sexual abuse happened by my partner forcing me into sex without using a condom. This always made me feel stressed and I wanted to separate from him but I couldn’t because of my children. But now I have to decide because I don’t think he will change his ways. I am always mentally tortured.”

Women often experienced fear at either possible infection or getting their partners infected. Respondent #20 developed fear of possible infection with HIV after the abuse by her HIV positive husband: “One day when he came home drunk and after eating food he asked me for sex. I told him that I will not accept until he puts on a condom. He ended up slapping and kicking me. I was helpless and weak so I gave in. Now I fear that I am infected with HIV.” Respondent #22, who herself tested HIV positive, had the fear of her spouse/partner acquiring HIV infection after he threatened and forced her into unprotected sex. She stated, “He would come back home and then during bedtime he would ask for sex. If I tell him to use a condom he would hold my hands on the bed and rape me. I would feel fear because I was thinking that he would become positive because of not using a condom.”

Threats from men meted out to women in HIV discordant union to have them yield to sexual intercourse, and the sexual act itself evoked pain, bleeding, feeling of helplessness, annoyance, and suicidal tendencies. Respondent #18 described how she
wanted to commit suicide after having being exposed to sexual violence: “He threatened to beat me so he ended up playing sex with me and I was bleeding and in pain afterwards. I ended up feeling helpless and annoyed. This happened after the HIV test found him positive and I was negative. He slapped me and used force to get me into sex when I asked him to use a condom. After he raped me I felt like committing suicide. I was helpless.”

Sexual violence was quite a humiliating experience to women in the study, leaving them feeling harassed and not able to defend themselves. Respondent #02 stated, “Whenever my husband came back drunk, I expected a fight from him and whenever we got to bed he could just force me to have sex with him. I always felt harassed and humiliated since I was not able to fight for myself.”

A typical sexual abuse among women in HIV discordant union in Uganda after disclosure of their test result, starts with the partner coming home drunk, demands for sex, which the spouse/partner denies because of fear of HIV transmission in the absence of protective measure, leading to sexual abuse that may take the form of use of physical force, verbal threats, slapping, beating, kicking, shouted or yelled at, or being held down.

Discussion

This study revealed that in the context of Uganda, even before the HIV serostatus of couples becomes known, sexual violence was perpetuated against women by their male partner. Sexual violence among women in HIV discordant union was heightened by the revelation of the couple’s HIV serostatus irrespective of which member is found to be HIV positive. Even among couples who did not report previous history of sexual violence
prior to testing for HIV, sexual violence against the women was reported shortly after learning that they were living in an HIV discordant union.

The most common form of sexual violence reported by women in HIV discordant union after knowing their test result was the experience of physical force, followed by verbal threats. These women suffered pain as a result of bodily injuries, some reporting bleeding while others were bitter, felt exasperation as a result of helplessness from the violence, and others developed suicidal tendencies. These findings underscore the reality that sexual violence against women has far-reaching consequences that may include physical effects, psychological consequences, and social consequences (Wingood et al., 2000; Holmes et al., 1996; Jewkes et al., 2002; Ackard et al., 2002; Faravelli et al., 2004; Ystgaard et al., 2004; Maman et al., 2002).

Concerns about sexual violence should be addressed in a holistic, coordinated manner involving various stakeholders. Concerns of the victims of sexual violence about transmission of HIV by suggesting the use of condom to their partner played a big role in perpetuation of sexual violence. Generally, the ability of many Ugandan women to negotiate for condom use with their spouse/partner is constrained by fear of being beaten either for suspecting their husbands of having extramarital affairs or because they may be accused of adultery themselves (Human Rights Watch, 2003). Being younger and often physically weaker, as well as being economically dependent upon the spouse/partner hindered the ability of women in HIV discordant union to resist sexual advances of their partner perceived to be at high risk of transmitting or getting infected with HIV. These findings are in agreement with those of an earlier study conducted in Uganda which revealed that women who venture into sexual relationship at early age have a high risk of
experiencing violence (Koenig et al., 2003). Economic dependence prevents women from seeking redress against or separation from abusive men (Koenig et al., 2003). Suspicion of infidelity with subsequent apportioning of blame as to who brought the HIV infection into the union also played a role in propagating sexual violence against women in HIV discordant union. This finding is similar to the findings of a study on domestic violence which revealed that attitudes to female infidelity justified beating of the woman if she was found to be unfaithful (Koenig et al., 2003).

Alcohol intoxication was described as a major contributing factor to sexual violence against women in HIV-discordant unions. This agrees with the finding of another study conducted in South Africa (Dunkle et al., 2004) which reported that women whose partners drank alcohol before sex experienced violence two times more than their counter parts with non-drinking partners. A study carried out in Zambia also found an association between alcohol consumption and heightened perpetuation of sexual violence (Murray et al., 2006). Out of anger and frustration at their spouse’s/partner’s HIV negative serostatus some men perpetuated sexual violence in order to infect them with HIV. This highlights a serious need for couple counseling that includes issues pertaining to sexual violence pre- and post- HIV testing. It also calls for enforceable legislation to deter individuals who deliberately or maliciously propagate sexual transmission of HIV. Situations where men perpetuate sexual violence against their spouse in the context of HIV discordance in the hope of having children before succumbing to HIV/AIDS is a pointer towards the need for scaling up information on the program on the prevention of mother-to-child transmission of HIV (Homsy et al., 2006).
Although the majority of the women confided to someone about the sexual abuse that they suffered, none of them reported the incident to any form of authority. This occurrence is in conformity with the findings of other studies that reported that abuse is most commonly reported to non-authority figures (Fisher et al., 2003). This is most likely due to lack of confidence that women have developed against institutions like the police and the judiciary in Uganda. In Uganda sexual violence quite often is not punished by the justice system. The culture of Uganda and other sub-Saharan African countries limits women’s ability to negotiate sexual decisions and behavior, leading to their increased vulnerability (Wolff et al., 2000), hence their feeling of annoyance and helplessness as revealed in this study. The belief in Uganda that a woman is the property of the husband and the failure of authorities to treat sexual violence as a criminal offence discourages reporting of sexual violence or leaving abusive relations; thereby exacerbating the abuse (Human Rights Watch, 2003).

Although the findings of this study are specific to women in HIV discordant union attending post-test club services at AIC in Uganda, the major advantage of the use of the qualitative approach is that it allowed for in-depth exploration of the lived experiences of these women, which would not be possible to assess in-depth from the perspectives of the women, using traditional quantitative methods. Other strengths of qualitative studies like this study include being appropriate for the identification of unusual or rare events which may not be picked up by using a quantitative approach. However, the study is not free from limitations, which include the fact that we relied on respondents’ self-reports of their experiences of sexual violence. However, since sexual
violence does not have social desirability, it is likely that the accounts of the women represented their actual experiences of sexual violence associated with their HIV status.

Given the current knowledge, the perpetuating factors, and effects of sexual violence, health care professionals should play an active role in supporting women who experience sexual violence. Public health authorities in Uganda should provide leadership for the development and implementation of a comprehensive strategy of services and policy changes targeting the prevention of violence against women in general and especially sexual violence in HIV discordant relationships in particular. Efforts should be made to link victims of sexual violence identified during HIV voluntary counseling and testing with the judicial system, social services, and the health system. The prevention, control, and mitigation of the impact of sexual violence against women should be done by awareness creation, sensitization, and strengthening of multidisciplinary institutions such as the police, judiciary, human rights, health care, religious organizations, women’s groups, research organizations, and others. Men and boys should be taught to respect women from an early age. This will require a concerted effort of parents, elders, teachers, religious ministers, health authorities, and civic organizations. In Uganda, legislation that criminalizes spousal violence and recognizes domestic violence as a human rights issue should be enacted (Human Rights Watch, 2003).

Counseling protocols at voluntary HIV counseling and testing centers in Uganda should include issues pertaining to sexual violence. Currently the counseling protocol at these centers does not address the issue of sexual violence in the context of HIV serodiscordance (Painter, 2001). HIV testing centers should provide appropriate information on reproductive options for couples who are HIV discordant. Referral
systems should link couples with counseling services on sexual violence and health units where services for reproductive options for couples who are HIV discordant are available.

Further research is needed to examine men’s perspective on the correlates of sexual violence in the context of HIV discordance. The findings in this study deserve exploration of similar phenomenon in other cultures both in-depth and at generalizable scales. Health-seeking behavior of women who experience sexual violence deserves further research.

References


SUMMARY DISCUSSION AND CONCLUSION

Our findings did not support the hypothesis that the prevalence of sexual violence among women in HIV discordant unions attending post-test club services at AIDS Information Centers, Uganda differs compared to women in HIV negative concordant unions. Neither did the findings confirmed the hypothesis that there was a difference in prevalence of STDs among women in HIV discordant unions attending post-test club services at AIDS Information Centers, Uganda, compared to women who are in HIV negative concordant unions. Comparability in the prevalence of sexual violence among women in HIV discordant unions and that among women in HIV negative concordant unions could have been due to disclosure bias, underestimation of sexual violence, and short follow-up period. Other factors other than the difference in the HIV serostatus of the women in the two cohorts may have been responsible for the reported sexual violence. Comparability in the prevalence of STD between the two study groups may have been due to small sample size, information bias, use of STD of low sensitivity, and unobserved variables such as the risk factors in the partner of the study participants.

Analysis of quantitative data revealed that women in HIV discordant unions attending post-test club services at AICs in Uganda were more predisposed to sexual violence compared to their counter parts in HIV negative concordant unions because they had: low education levels, ever had transactional sex, prior experience of sexual violence before taking HIV test, history of STDs, other sexual partners, and ever consumed alcohol. Results of analysis of qualitative data triangulated the fact that alcohol
consumption by the men was associated with perpetuation of sexual violence. None of the usual risk factors for STDs was associated with occurrence of STDs among women in HIV discordant unions. Perhaps the lack of association seen was due to the small sample size of women tested for STDs and the fact that we did not study the contributory factors of the characteristics of the spouses/partners, the men.

We demonstrated that there is high prevalence of sexual violence among women who seek VCT services at AICs in Uganda and high prevalence of STDs among women in HIV discordant unions who seek VCT services at AICs in Uganda and the associated risk factors for sexual violence. These findings are relevant to public health practitioners to lay down appropriate strategies for preventing and mitigating effects of sexual violence and STDs. This calls for awareness creation, sensitization, and strengthening of multidisciplinary institutions involved in the control and prevention of sexual violence and STDs. There is need to address sexual violence during pre- and post-testing counseling at AICs in Uganda. Furthermore, in-depth exploration of sexual violence and its impacts in other cultures is necessary at generalizable scales.


APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL FORM
Form 4: IRB Approval Form
Identification and Certification of Research Projects Involving Human Subjects

UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56 and ICH GCP Guidelines. The Assurance became effective on November 24, 2003 and expires on February 14, 2009. The Assurance number is FWA0000590.

Principal Investigator: FUMUSU, DONATH
Co-Investigator(s):
Protocol Number: F060417005
Protocol Title: Sexual Violence and Correlates Among Women in HIV Discordant Union, Uganda

The IRB reviewed and approved the above named project on 4/18/2007. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This Project will be subject to Annual continuing review as provided in that Assurance.

Date IRB Approval Issued: 4/18/07
Date IRB Approval Issued: 4/24/07
Identification Number: IRB0000195

Institutional Review Board for Human Use (IRB)
Ferdinand Wuthaler, M.D.
Chairman of the Institutional Review Board for Human Use (IRB)

Investigators please note:
The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review, research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.
APPENDIX B

QUESTIONNAIRE ON SEXUAL VIOLENCE AND CORRELATES AMONG WOMEN IN HIV DISCORDANT UNION SEEKING VCT SERVICES AT AIC
Dear Respondent:

Thank you for agreeing to participate in this study. We would be grateful if you could please spare 30 minutes to respond to this questionnaire. As explained during the consent process, we are conducting this study to find out the relationship between HIV serostatus and sexual violence. Information which we will obtain from this study will be useful in planning appropriate health interventions for the benefit of our community. You are free to refuse to answer any question you do not want to answer. All information will be treated in strict confidence. To ensure there is confidentiality, your name will not be written anywhere on the questionnaire.

Section A: Sociodemographic characteristics

Respondent’s identification number

1. Enter the appropriate branch of AIC where HIV test was done.
   
   1=KAMPALA
   2=JINJA
   3=MBALE

2. What is your age in complete years?
   
   1=< 18 YEARS
   2=< 25 YEARS
   3=25-34 YEARS
   4=>34 YEARS

3. What is your occupation?
   
   1=STUDENT
   2=PEASANT
3=BUSINESS PERSON/SELF-EMPLOYED
4=CIVIL SERVANT
5=OTHER (SPECIFY)------------------------
6=NOT EMPLOYED

Coding rule:

Civil servant, student, peasant, business person/self-employed code as:

EMPLOYED=1

NOT EMPLOYED CODE AS UNEMPLOYED=0

4. What was the highest level of schooling you completed?

1=no formal education
2=primary school
3=secondary school
4=tertiary level

5. What is your marital status?

married=1
living together=0

6. What is your tribe?--------------------------------------------------------

1=Ganda
2=Non-Ganda
3=Other (specify)

7. What is your religion?

1=Christian
2=Muslim
8. Since you started living together with your partner, do you use modern contraceptives?

1=yes          [        ]
2=no

9. Were you ever pregnant while living together with your current partner/spouse prior to taking an HIV test?

1=yes          [        ]
2=no

10. How many deliveries of fetus of gestational age of 28 weeks or more have you had?

_________________

Nulliparous (para < 1) =1 [    ]
1 birth =2
Multiparous (para 2-4) =3
Grand multiparous (para 5-9) =4
Great grand multiparous (para ≥ 10) =5

Section B: HIV serostatus of the study participants and experience of sexual violence.

11. Please, may I know your HIV status after you took an HIV test at AIDS Information Center. Were you both negative, both positive, man positive and woman negative, or man negative and woman positive?

1=Concordant (both) negative
2=Concordant (both) positive [    ]
3=Discordant with the man HIV positive and the woman negative
4=Discordant with the woman HIV positive and the man negative
The following questions are to find out if you have ever experienced sexual violence from your partner before going for an HIV test. Truthful provision of such information is vital for the purpose of this study and planning for appropriate health interventions. The information you will provide will be treated with confidentiality and not disclosed to anyone.

12. Prior to HIV testing did your present partner ever force you to have sex when you did not want to through physical or threats of physical force?
   1 = yes [ ]
   2 = no

13. After HIV testing did your present partner ever force you to have sex when you did not want to through physical or threats of physical force?
   1 = yes [ ]
   2 = no [Skip to question 17]

14. How frequently does/did your partner force you to have sex against your will?
   1 = Rarely [ ]
   2 = Sometimes
   3 = Frequently
   4 = Always

15. Which of the following forms of force did your partner use? READ TO THE RESPONDENT
   A. Pushing/pulling/holding down yes = 1 no = 0 [ ]
   B. Verbal threats or shouted or yelled at you yes = 1 no = 0 [ ]
   C. Slapping yes = 1 no = 0 [ ]
D. Punching/kicking/beating   yes=1 no=0  [ ]
E. Hitting with an object or weapon   yes=1 no=0  [ ]

16. Were you pregnant at the time of the violence?
   1=yes  [ ]
   2=no

Section C: Self-report of sexual behavior and predisposing factors among women

17. How many sexual partners have you ever had in your lifetime? _____________
   \( \leq 2=1 \)  [ ]
   \( >2=0 \)

18. At what age did you first have your sexual intercourse? ________________years old
   \( <18 \text{ years}=1 \)  [ ]
   \( \geq 18 \text{ years}=0 \)

19. How long have you been in a relationship with your current partner?
   _________________number of years
   \( <5 \text{ years}=1 \)  [ ]
   \( \geq5 \text{ years}=0 \)

20. Since you started living together with your partner, do you ever use condoms during sexual intercourse?
   1=yes  [ ]
   2=no   [SKIP TO QUESTION 23]

21. If yes, how frequently do you use condoms?
   1=Rarely 
   2=Sometimes  [ ]
22. While you have been in a relationship with your partner/spouse, have you ever had any other sexual partner?
   1=yes [   ]
   2=no

23. Have you ever had sexual intercourse with any person in exchange for cash or any favor?
   1=yes [   ]
   2=no

24. Since you started living together with your partner, do you consume alcohol?
   1=yes [   ]
   2=no [SKIP TO QUESTION 26]

25. If yes, how frequently do you consume alcohol?
   1=once in a month [   ]
   2=once in a week
   3=everyday

26. Have you ever used any of the following drugs?
   Marijuana   1=yes, 0=no [   ]
   Cocaine     1=yes, 0=no [   ]
   Heroine     1=yes, 0=no [   ]
   Other (specify) __________________ 1=yes, 0=no [   ]

27. Have you ever suffered from any of the following symptoms?
   i. ULCERS IN THE PRIVATE PARTS, yes=1 no=0 [   ]
ii. ABNORMAL DISCHARGE FROM THE PRIVATE PARTS, yes=1 no=0

iii. PAINFUL PASSING OF URINE, yes=1 no=0

iv. LOW ABDOMINAL PAIN, Yes=1 no=0

1=yes (IF RESPONDENT AGREES TO ONE OR MORE OF THE SYMPTOMS)

0=no (IF RESPONDENT AGREES TO NONE)

D: Report on cultural norms and beliefs associated with sexual violence

28. Does your culture accept sexual violence by a man against a partner/spouse as being normal?

1=yes

2=no

29. Who makes decisions in your household?

1=the man

2=the woman

3=both the man and spouse

30. Who controls resources in the household?

1=the man

2=the woman

3=both the man and spouse

Thank you for the information.
APPENDIX C

LABORATORY DATA EXTRACTION FORM
<table>
<thead>
<tr>
<th>Identification number</th>
<th>Test result for <em>T. vaginalis</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = negative</td>
</tr>
<tr>
<td></td>
<td>1 = positive</td>
</tr>
</tbody>
</table>

1. 
2. 
3. 
4. 
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8. 
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11. 
12. 
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14. 
15. 
16.
APPENDIX D

INTERVIEW GUIDE QUESTIONS
1. What were your family sexual life experiences before taking HIV test?

2. What were your family sexual life experiences after taking HIV test?

3. If you experienced sexual violence after HIV test, what was the abuse that you experienced?

4. Did the sexual abuse increase in frequency after the HIV test?

5. Under what circumstances did the sexual abuse take place?

6. Did you tell anyone about the incident before now? If yes, who did you tell?

7. If you did not tell anyone, give the reasons for not doing so.

8. Why do you think your partner perpetuates sexual violence?

9. Describe how the sexual abuse happened, and how you felt after the experience.