ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

GENDER BASED VIOLENCE AND RISK OF HIV INFECTION

AMONG WOMEN ATTENDING VCT SERVICES

IN ADDIS ABABA CITY

BY

GULELAT AMDIE

A thesis submitted to

School of Graduate studies of Addis Ababa University in partial fulfillment

of the requirements for the Degree Master of Public Health

in Department of Community Health, Faculty of Medicine.

May, 2005

Addis Ababa, Ethiopia

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DECLARATION

I, the under signed, declare that this is my original work has never been presented in this or any other university and that all the source material used for the thesis have been duly acknowledged.

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Signature----------

Place: Addis Ababa

Date of submission: May 4, 2005

This thesis has been submitted for examination with my approval as a university

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Name----------

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Date----------

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LIST OF ABBREVIATIONS

AIDS -Acquired Immuno Deficiency Syndrome

CSA; childhood sexual assault

FFI: Forced first intercourse

HIV-Human Immuno Deficiency Syndrome

IPV- Intimate partner violence

NIP: non intimate partner violence

STD-sexually Transmitted Diseases

UFI: Unwanted First Intercourse

WHO- World Health Organization

VAW: Violence against women

ABSTRACT

Background: HIV/AIDS and violence are among the major health problems affecting the lives of millions of women, worldwide. As women get increasingly infected by HIV/AIDS, violence and fear of violence are emerging as important risk factors contributing to their vulnerability to HIV infection, directly through forced sex and indirectly by constraining women's ability to negotiate safe sexual behavior. Few studies linked men's use of violence to their own high risk sexual behavior, hence, their own as well as their partner's risk of HIV infection. Despite the recognition of both problems of violence and HIV in Ethiopia, no study yet assessed gender based violence as a risk factor for women's HIV infection.

Objectives: This study was conducted: to measure the prevalence of various forms of gender based violence, including intimate partner physical and sexual violence and to assess associations between gender-based violence, HIV risk behaviors and HIV infection among women attending voluntary counseling and testing service in Addis Ababa City.

Methods: We did a cross sectional study among 743 women attending VCT service at six health institutions in Addis Ababa City. Women who ever engaged in steady heterosexual relationship interviewed and socio-demographic characteristics, risk behavior including multiple male partners, casual partners, transactional sex, condom use and alcohol/Khat use and experience of psychological, physical and sexual violence from intimate partner, childhood sexual assault, forced first intercourse and sexual assault by non partners were assessed using structured questionnaire and linked with women serostatus data.

RESULT: The prevalence of lifetime intimate partner physical and sexual violence was 54.6% and 41% respectively and 21.8% of women reported experiencing forced sex or rape at their first sex. At the date of interview 35.4% of women tested HIV positive. After adjustment for socio-demographic characteristics and women risk behavior, intimate partner violence was associated with HIV seropositivity. Childhood sexual assault, forced first intercourse and adult sexual assault by non partner were not associated with HIV serostatus. In our study participants, condom use, refusal of sex and demand for monogamous relationship was affected by intimate partner violence.

CONCLUSION: in our study participants, women partnered with violent men are at increased risk of HIV infection. Our data support the hypotheses that abusive partners are more likely to have HIV and place their female partners at high risk of HIV. HIV/AIDS intervention need to target male sexual risk taking and need to work at broader and societal level to challenge cultures of violence and male dominant norms of power relations.

1. INTRODUCTION

Victims of HIV/AIDS epidemic in sub-Saharan Africa are young and female. From an estimated 8.6 million young victims in the region, 5.7 million are young women. Worldwide, African women are the group most severely affected by the epidemic accounting 66% of those infected between the ages 15 and 24 years(1). In Ethiopia the prevalence of HIV is 5% in females and 3.8% in males and the number of females infected by HIV/AIDS is much higher than the number of males (2). As women get increasingly infected by HIV/AIDS, gender based violence and gender inequality have been increasingly cited as essential and major determinants contributing to the vulnerability of women for HIV infection (3).

A growing number of studies have documented the high prevalence of intimate partner violence and sexual violence against women worldwide. A recent study conducted in south central Ethiopia, reported that 49% and 59% of women physically and sexually abused by their partners at some point in their life respectively (5). Other studies conducted in different areas reported attempted rape ranging from 10-11.5% , including rape more than once and consequences like unwanted pregnancy, suicidal attempt, and abortion (6).

Violence has been linked to different health outcomes, both in short term and long term. Women who have experienced physical or sexual abuse, experience difficulties in physical functioning, psychological well being like depression, suicidal attempts, and face a number of reproductive health problems like infertility, pelvic inflammatory disease,

unsafe abortion and unwanted pregnancy. Violence during pregnancy not only affect the women but also the growing fetus and has been associated with miscarriage, still birth, premature labor and birth, fetal injury and low birth weight which is major cause of infant mortality in developing countries (4). Moreover, at the era of HIV/AIDS violence is contributing to women's increased risk of HIV infection both directly through forced sex and indirectly by constraining women's ability to negotiate the circumstances in which sex takes place and the use of condoms. Sexual abuse during childhood also seems to be associated with high-risk behaviors in later stages of life that may also increase the risk of HIV. Few studies also highlight that men's use of violence is linked to their own high risk sexual behavior, hence, their own as well as their partner's risk of HIV infection, (9).

As the epidemic of HIV and violence continue seriously affecting women, identifying the factors that place women at risk of HIV and violence is crucial to plan and implement effective prevention strategies (9). However, given that intimate partner violence is considerably more common than rape, the possibility that it could contribute to risk of HIV infection is an important, but largely unexplored area (9). Despite the recognition of problem of both violence and HIV in Ethiopia, yet no study examined violence against women as a risk factor for their HIV infection and no research assesed the impact of partner violence on women's ability to implement HIV preventive practices. Therefore, this study is conducted to understand the associations between different forms of violence, HIV risk behaviors and risk of HIV/AIDS infection among women attending VCT services in Addis Ababa City Administration.

2. LITERATURE REVIEW

2.1 HIV/AIDS IN Ethiopia

Ethiopia has one of the worst HIV epidemics in the world. There are an estimated 1.5 million HIV infected individuals. According to the MOH 2004 report the HIV prevalence estimate for Ethiopian adults in 2003 was 4.4%. The corresponding estimate for urban Ethiopia is 12.6% whereas that for rural Ethiopia is 2.6%. The HIV prevalence for Addis Ababa in 2003 was estimated at 14.6%. The 2003 estimated prevalence among female was 5% whereas among males was 3.8%. The estimated number of new AIDS cases in the adult population in 2003 was 98,000 of which 54% females and 46% males. This indicates that women are the group severely affected by the epidemic (2).

On one hand, AIDS awareness in Ethiopia is generally high, yet existing public health preventative and educational efforts have had limited success in curtailing the epidemic (10). Ethiopia Demographic and Health Survey (CSA 2001) reported high level of awareness of HIV/AIDS amongst the general population, specifically 96% of males 85% females reported high level of awareness about HIV/AIDS (11). On the other hand Ethiopian Behavioral surveillance survey showed that substantial proportion of the population did not use condom with their non commercial partners. Such lack of condom use between partners is problematic in a population out of which 33% practice extramarital sex in the past 12 months and 73% perceive no risk of HIV infection after having unprotected sex. (11).

Recently in Addis Ababa, much attention has been focused on the prevention of prenatal HIV transmission using antiretroviral drugs (12). Less attention has focused on the critical

issue of women's HIV risk although protecting the child bearing women from HIV infection provides clear and unquestionable effective up-stream prevention of pediatric cases, in addition to offering the opportunity to interrupt cycles of heterosexual transmission. Moreover, evidence suggests that women are more vulnerable than men to becoming infected through heterosexual encounters (3). It is therefore critical to develop a clearer understanding of the circumstances of Ethiopian women's lives which place them at risk of HIV infection and impact their ability to implement self protective strategies such as condom use mutual monogamy and abstinence. This information is necessary to identify possible strategies for interventions efforts, and to inform appropriate policy development within the health sector and within government (9).

2.2 Gender based Violence in Ethiopia

It is impossible to fully understand the life circumstances of Ethiopian women without considering the impact of gender-based violence. Gender-based violence includes, but is not limited to: acts of physical, sexual, and psychological violence by intimate partners, dating partners or family members; sexual assault and rape (including stranger rape, acquaintance/date rape and marital rape); childhood sexual assault of girls; sexual harassment; and forced prostitution. Violence perpetrated by an intimate male partner includes: Physical violence (e.g. slaps, punches, kicks, assaults with a weapon, homicide); Sexual violence (e.g. rape, coercion and abuse includes use of physical force, verbal threats, and harassment to have sex, unwanted touching or physical advances, forced degrading acts that often persist over time and are accompanied by threats on part of the perpetrator); Psychological violence (e.g. belittling the woman, preventing her

from seeing family and friends, intimidation, withholding resources, preventing her from working or confiscating her earnings)(4).

Good estimates of the incidence and prevalence of gender-based violence within a population are difficult to obtain. The most reliable data generally derive from surveys specifically designed to address the question of gender-based violence. A field research conducted in Meskan and Mereko district in south central Ethiopia found 29% prevalence of physical abuse by an intimate partner in the past 12 months and 49 % prevalence in their life time. Among pregnant women the history of physical violence during a pregnancy was 77%. Forty four percent of the women experienced sexual violence within the last 12 months and 59% experienced sexual violence by partner at some point in their lives. When severity of violence considered, 35% of women experienced at least one severe form of violence including hitting, kicking, choking or the use of weapon. The study also reported considerable overlap between sexual and physical violence. Among ever partnered women 42% experienced both physical and sexual violence over their life time. Among the study participants 7% reported sexual violence before the age of 15 year (5).

In a study conducted to assess the prevalence, outcome and awareness of sexual violence among high school female students in Debark, North West Ethiopia (6), The prevalence of performed and attempted rape was 8.8% and 11.5%, respectively. The age range of performed rape victims was between 12 and 21 years. Of the 19 (8.8%) who reported rape being performed on them, unwanted pregnancy, suicide attempt, vaginal discharge and abortion were the consequences in 21%, 15.8%, 10.5% and 5.3%,

respectively (6). One study conducted in Addis Ababa showed 15.6% prevalence of completed rape within three months among female street adolescents in Addis Ababa, including experiencing rape more than once and consequences like unwanted pregnancy, suicidal attempt, and abortion (7).

2.3. Overlaps between Violence and HIV Infection among women

Today, half or more of the 40 million people infected with HIV in the world are women. Young people aged 15-24 years account for half of all new infections worldwide. In sub-Saharan Africa, young women account for 75 % of HIV infections and are approximately three times more likely to be infected than young men of the same age (1). So, what makes women, especially girls and young women so disproportionately vulnerable to HIV and why have current AIDS control efforts largely failed to control the spread of the epidemic in women and girls? These high rates of HIV infection in women have brought into sharp focus the problem of violence against women and increasingly cited by researchers as one of major determinants contributing to the vulnerability of women for HIV infection (14).

Some studies indicated that HIV infection and other STDs are among the major consequences for women experiencing violence (4). HIV infected women reported more experience of physical and sexual violence from intimate and non intimate partners, including sexual assault, sexual coercion in their child hood, adolescent and adult life than non-infected women (9). Women who are raped are also found to be at high risk of a pre-existing sexually transmitted infection (STIs) and lower but substantial increased risk of STIs (14). Even though such studies are limited in Africa, a small but growing number

of studies have begun to explore the connections between gender based violence and risk of HIV infection among women and few studies provide valuable evidences (13). A study conducted in Uganda showed that, women who reported being forced to have sex against their will in the previous year had an eight fold increased risk of becoming infected with HIV(15). Another study conducted in South Africa reported that women who are in relationships with violent or controlling relationships were 50% more likely to contract HIV than women not involved in abusive relationships (13). Studies conducted in Rwanda (16), and Tanzania (also reported higher prevalence of HIV infection among women who experienced intimate partner violence than women living in non abusive relationship (20). A study conducted in south African identified significant association between women's subjective perception of relationship control, experience of intimate partner violence and HIV infection after adjustment for women's own high risk behaviors and socio-demographic characteristics (13).

2.4. Connections between Gender Based Violence and HIV Infection

Gender-based violence can make women vulnerable to HIV through three main mechanisms. First, there is the possibility of direct transmission through forced or coerced sexual acts. Secondly, the trauma associated with violent experiences can impact later sexual behavior, by increasing the women's HIV risk taking behavior. Third, violence or the threat of violence may limit women's ability to adopt safer and HIV protective sexual practices within on-going relationships and may detract from using HIV related services such as STIs treatment, VCT and PMTC services (9, 26).

2.4.1 The Role of Forced Sex in HIV Transmission

Violence or forced sex can increase the risk of transmitting HIV. The biological risk of HIV transmission will be affected by the type of sexual exposure, the presence of STDs, exposure to vaginal excretions or blood and the degree of physiological trauma. When sexual intercourse is forced, abrasions and cuts are more likely to appear-thus facilitating the entry of the virus through the vaginal mucous. Adolescent girls are particularly susceptible to HIV infection through forced sex, and even through unforced sex, because their vaginal mucous membrane has not yet acquired the cellular density providing an effective barrier that develops in the later teenage years. In addition, condom use in such situations is unlikely. In such situations where all these coupled, the possibility or likely likelihood of contracting HIV/STDs is greater (9).

2.4.2 Connections between History of Violence and HIV Risk Behaviors

Increasing evidence from developed and developing countries indicates the links between a history of childhood/adolescent sexual abuse and high-risk behavior in later stages of adult life, which may increase the risk of HIV infection. Here, violence indirectly impact women HIV risk taking behavior through long-term by affecting women's emotional well-being and their subsequent HIV risk behavior (4).

Many study findings reported links between violence in childhood and adolescence to subsequent development of depression, post-traumatic stress disorder, other anxiety disorders, and low self esteem- these factors in turn found are associated with many of HIV risk behavior. Early age experience of sexual violence such as forced first sexual

intercourse and other forms of sexual assault have been associated with traumatic sexualisation, mental health problems, domestic violence and other problems in intimate relationships, including engaging in behaviors associated with excess HIV risk – such as early initiation of sexual activity, high number of sexual events within the last few months, high number of sexual partners, high number of sexual encounters with non-primary partners or casual partners, sex with a known risky partner, sex while intoxicated, receptive anal sex, low condom use, recent history of STDs, and engaging in sex work (13, 26).

Besides, some studies incriminated childhood abuse as a single most important determinant of high-risk sexual activity in adolescents, and forced first intercourse was found to be associated with increased risk of teenage pregnancy fourteen-fold times after adjustment for socio-economic characteristics and other factors. Moreover, studies also provided evidences linking experience of sexual abuse in childhood or adolescence with patterns of victimization during adult hood. In a national survey conducted in U.S.A women who were raped before age 18 years were twice as likely to be raped as adult, compared with those who were not raped as children or adolescents (4). Women who experienced physical and sexual violence in childhood or adolescence also found to be engaged in partnership with abusive men in their adult life more than women not experienced such violence (13).

Studies from developed countries have found associations between experience of gender-based violence as an adult and having multiple sex partners, multiple sexual

encounters, causal sex partners, low condom use, having a male partner with other female partners, contracting STD and, using alcohol and drugs, and engaging in commercial sex or trading sex for money or drugs. But the evidence is not conclusive whether having many sexual partners, engaging in a commercial sex or alcohol or drug problems are the causes or the consequences of violence (9).

2.4.3 Connections between Violence and HIV Prevention Practices

Experiencing violence in childhood or in adulthood is believed to lower women's self-esteem, which then affects self-perceived ability to negotiate and implement safer sex. Hence, both the fear of violence , treats of violence and actual violence affects women's expectations in relationships, their ability to negotiate terms and conditions of sexual intercourse, and whether condom is used (9).

While the evidence is not conclusive, women who experienced forced sex in intimate relationships often find it difficult to negotiate condom use –either because using a condom could be interpreted as mistrusting their partners or as admission of promiscuity, or else they fear experiencing violence from their partners. Studies have found that women with a history of violence, fear violent retaliation for requesting condom use, and are less likely to use condom. Likewise, attempts to use condom and access STD services are likely to lead to abuse (4). Women in Zimbabwe reported physical violence and forced sex as retaliation for attempts to refuse sex with their partners (24). Fearing violence or rejection, 58% of south African girls reported avoiding discussing condom use with their partners. Yet, in couples where only one partner is infected with HIV,

consistent and correct condom use provides the HIV negative person with a near zero risk of infection (23).

A review of over 40 studies from Sub-Saharan Africa indicated that a significant proportion of adolescent girls have sexual relations with men five to ten years older than themselves. While girls are able to initially choose the older sexual partner, once in the relationship, it is the older men who control the sexual relationship including condom use - in some situations through the use of violence (14). A study conducted among young women (16-23 years) in South Africa suggests that women with older partners (older than them three or more years) have 1.6 fold higher odds of being HIV infected and young women with older partners are 1.5 times more likely to experience physical and sexual violence than women with partners in the peer age group. The researchers suggest that partner violence may be a feature of relationships with older men and that age difference between partners increases young women's HIV risk because older men have a much higher prevalence of HIV (14).

Fear of violence also seems to limits women's ability to ask about their partners' other sexual partners and to implement monogamy as a means of HIV protection. Studies highlighted that men's use of violence is linked to their own sexual risk taking and hence, their own as well as their partner's risk of STI and HIV (14). In India, a study showed that men who had extramarital sex were six times more likely to report sexual abuse of their wives than men who remained faithful. And men who reported an STI were 2.5 times more likely to report abuse of wives than men who did not report an STI. In another study from South Africa, men who reported use of sexual violence against intimate partners

were nearly twice as likely to have multiple partners compared to those who did not use sexual violence. These evidences indicated that abusive men were more likely to engage in extramarital sex, acquire HIV or other STI, and impose more risky sexual practices on their partners and place their female partners at higher risk for HIV or other STIs possibly through sexual abuse (14).

An intersection between violence and economic vulnerability is the other dimension, which may increase women's HIV risk. Economically vulnerable women often depend on men's financial contributions and are less likely to successfully negotiate safer sex and less likely to leave relationships perceived as risky. Economic vulnerability also increases the likelihood that women will exchange sex for money or favors, and to engage in the sex industry and the economic vulnerability limits their ability to enter this exchange on equal basis (22, 26).

Even though the evidence is not conclusive, violence or fear of violence has been implicated as a barrier to women seeking HIV testing. In Uganda, research indicated that women were afraid to ask for money or permission from their husbands to attend HIV/AIDS facilities or seek information and in some cases explicitly forbidden from taking HIV tests (16). Violence or fear of violence was also implicated as a barrier to disclosure of HIV status among those women tested for HIV. Between 16 - 86 % of women in developing countries choose not to disclose their HIV status to their partners. On the other hand, disclosure of HIV status is considered to be important for ensuring that HIV positive individuals are able to access a range of services including prevention of mother

to child transmission (MTCT), anti-retroviral treatment (ART), and psychosocial support (20). For example, disclosure by HIV positive women to their sexual partners could enable couples to make informed reproductive health choices such as seeking family planning services to reduce unintended pregnancies or it could lead to changes in HIV risk behaviors. For discordant couples, disclosure of HIV status also provides an opportunity to the male partner to take additional measures not to be infected from his female partner (14).

Studies on disclosure suggest that for a majority of women, their partners' reaction was sympathetic and understanding. However, some studies identified increased risk of violence or negative outcomes on women tested for HIV and disclosed their HIV sero-status. Between 3 - 15 % women in most studies reported negative reactions including blame, abandonment, anger, and violence. In studies from Tanzania, South Africa, and Kenya, among those who do not disclose their status, between 16 - 51 % women reported fear of violence as one of the major barriers to disclose their HIV status. Generally, violence seems to challenge all available HIV prevention measures such as abstinence, monogamy and condom use and intervention strategies such as VCT, PMTCT, ART, and psychosocial support. In other words these major intervention strategies seem irrelevant or inapplicable to women living in violent relationships (14).

2.5 Rationale

Most of the studies to explore the link between violence and HIV were conducted in developed countries and due to low prevalence of HIV and violence, these studies had drawn samples from very high-risk groups extremely exposed to violence. Studies conducted in Africa were limited in number and limited in measuring the different forms, frequencies and severity of violence and measured experiences of violence after women knowing their serostatus, likely to introduce either recall or reporting bias and it is impossible to distinguish whether partners who learned of the women's HIV serostatus become violent as a result. In addition, these studies used self reported HIV risk behaviors and history of STDs as proxy indicators of HIV risk, potentially unreliable assumption that there is simple relation between risk behaviors and history of STDs and HIV risk.

Above all much of the studies to explore the link between violence and HIV have been conducted in developed countries and their application in different cultural and social context of Ethiopia is doubtful. (13, 17) Therefore, to fully understand the association between HIV infection and gender based violence in Ethiopian context this cross sectional survey was conducted among women attending VCT services in Addis Ababa city, specifically to explore the following questions. Did HIV positive women experience more intimate partner violence, than HIV negative women? Does self-reported HIV risk factors/behaviors such as number of male partners, transactional sex, and non-use of condom and alcohol use associated with experience of gender-based violence? Finally, does the association between violence and HIV sero-status sustain after adjustment for the effect of violence associated risk behaviors of women?

3. OBJECTIVES

3.1 General Objective

To assess the relationship between gender-based violence, HIV risk behaviors and HIV infection among women attending VCT services in Addis Ababa City.

3.2. Specific objectives

1. To measure the prevalence of various forms of gender based violence among women attending VCT services in Addis Ababa City.
2. To determine HIV infection among women attending VCT services.
3. To describe HIV risk factors/behaviors among women attending VCT services in Addis Ababa City.
4. To assess the relationships between gender-based violence and HIV risk behaviors
5. To assess the association between gender based violence and HIV infection among women attending VCT services in Addis Ababa city.

4. METHODS AND MATERIALS

4.1. Study Design: Cross-sectional survey

4.2. Study Setting

In Addis Ababa City, there are more than 30 governmental and non governmental health institutions provide VCT service. From these health institutions providing VCT service, six sites were selected to conduct the study based on their willingness, cooperation, availability of adequate clients and counselors (to conduct the study with out constraining the routine service). The selected VCT centers were Zewditu Hospital, Organization for Social Services in Aids Lideta VCT center, Kazanchis Health Center, Addis Ketama Health Center, Kirkos Health Center, and Kebena Health Center. Zewditu hospital and Organization for Social Services in Aids Lideta VCT center have free standing VCT clinics and the rest provide the service in integrated manner. The selected health institutions are used by the general population and they had the personnel, equipments and supplies and room to conduct the study. Therefore, the study participants were recruited from women attending voluntary testing and counseling services in these sites.

4.3 Study Population

The Study population was women attending VCT services in six health institutions in Addis Ababa city. From women who presented for VCT from December, 2004 to March 2005, women who were eligible to the study were enrolled in the study. In order to assess

socio-demographic characteristics of partners and their risk behaviors as perceived by the women and violence inflicted by intimate partners, women who were not engaged in regular sexual relationship with a male partner in their life time were excluded from the study.

Previous studies indicated that women's reporting experience of violence and risk behavior is affected by their knowledge of their serostatus. Besides, it makes impossible to distinguish whether partners who learned of women's status become violent as a result. It may also affect women's disclosure of risk behavior or introduce interviewee and interviewer bias (13). Therefore, to ensure that all participants would be unaware of their HIV status at the time of the interview, those women who had previously received their HIV test result were excluded from participation.

Prior research demonstrated that being commercial sex worker is a high risk factor for HIV infection and experiencing violence from intimate and non intimate partners . Besides commercial sex workers may not have regular partners (4). Therefore, our primary objective of assessing violence mainly from regular intimate partners may be affected by high prevalence of both violence and HIV infection among these groups. As result, women had ever been engaged in commercial sex work were excluded from participation.

Generally, eligible women were 18 years or older (VCT Policy), ever engaged in regular sexual relationship with a male partner in life time, never engaged in commercial sex work (in bars or as a street girl), never tested for HIV and received HIV test result, not

presented for VCT with their male partners, not present for VCT with partners, have common language with interviewer, mentally or physically capable to answer the study questions and gave written informed consent to participate in the study.

4.4 Sample Size

We use EPI6 statat calculator for cross sectional study design to calculate the sample size. To calculate the required sample size we used 25% of prevalence of physical and sexual abuse as exposure variable, and we use prevalence of HIV as an outcome variable and we assume 14% prevalence of HIV among Unexposed group (no physical and sexual violence). We calculated the sample size to identify 2 times odds of HIV among women exposed to physical and sexual violence. Confidence level of 95% and power 80% considered. The calculated sample size was 740 and by adding 10% for non response, the required sample size was 814.

4.5 Sampling

From the total women presented for VCT from December, 2004 to March 2005, women who were eligible to the study were enrolled in the study. All eligible women during the study period were included when the counselors had adequate time to interview them without affecting the routine work (convenience sampling).

4.6 Data Collection

4.6.1 Data Collection Instrument

The instrument used to collect data is structured questionnaires, which was first drafted in English and then translated to Amharic. Our primary tool for assessing the experience of intimate partner violence (IPV) was the WHO violence against women instrument, developed for a multi country study on women's health and domestic violence (19). After translating WHO questionnaire from English to Amharic we compared it with the WHO Amharic version particularly used by the Butajira Reproductive Health Project and further commented by lay persons, professionals in the field and further pre-tested and discussed with data collectors to ensure group consensus on meanings and appropriate use of local dialect in translation (5).

The questionnaire contained sections for assessing demographics of women and current or most recent regular partner, marital status and duration of relationship, risk behavior of women and current or most recent regular partner as perceived by the women, violence, women substance use, transactional sex and section to end the interview on positive note. More sensitive issues, including the nature and extent of partner and non partner violence and women's use of substance were explored in latter sections once rapport between interviewers and respondents had been established. To the extent possible, the questionnaire employed standard measures which had been tested and used in Ethiopia and/or tested and validated for use in Africa.

4.6.2 Data Collection Setting and Process

Data collection was done from December 2004 to March 2005 in six health institutions VCT centers found in Addis Ababa City Administration. Almost all data on socio-demographic characteristics of the respondent and eligibility criteria were part of the routine VCT risk assessment and counseling form. After completing the pretest counseling and establishing a good rapport with the potential participant and assessing the respondent for eligibility, the interviewers asked the women to participate in the study. Women who expressed interest in participation, and signed the informed consent document were included.

To obtain serostatus data we used the routine VCT testing procedures. In all health institutions after the pre test counselling, the counsellors were expected to collect specimens, provide code and submit to the laboratory. Women were interviewed after completing the pre test counselling and then the interviewers (counsellors) collected specimen, coded, submit specimens to the laboratory and finally collect the test results and communicate to clients. In our study the counsellors recorded the code - they provided for the specimen on the space provided on the questioner and when they obtain the test result they recorded or merge the serostatus data with the interview data. All specimens were tested using rapid test kits (Vironstika ® ETA) and positive results were confirmed by ELISA.

4.6. 3. Measurement and Variables

Assessing Socio-Demographic Characteristics

Data on socio-demographics included age, educational level, religion, occupation, of the respondent and her current or most recent partner; marital status, living arrangement and duration of relationship. We also asked women reason for testing and partner testing status.

Assessing HIV Risk Behaviour/Risk Factor

HIV Risk behaviours or risk factors were assessed using indictors such as number of regular and casual male partners, condom use, ever engaging in transactional sex, alcohol or drug (Khat use). To assess the risk behavior of current or most recent male partner all women were asked about their current or most recent regular partner risk behaviors, i.e. whether their current or most recent regular partner had sexual relationship with other women (other than the respondent) while they were in relationship with the respondent. Women were also asked whether their partners had sex with commercial sex workers prior to and during their relationship and partner use of alcohol and Khat and her perceived frequency of using alcohol and Khat.

Assessing History gender based Violence

We assessed experience of violence from any intimate male partner using the WHO violence against women instrument and our version contains 6 questions for emotional abuse, 4 questions for physical abuse and 4 questions for sexual abuse. To assess experience of emotional abuse the interviewer asked the participant whether a current (or most recent partner) or any other partner ever prevented her from seeing family or

friends; speaking with other men or gets angry if speak; ever controlled her movements; ever insulted; belittled or humiliated in front of other people; scare or threatened to hurt (19).

To assess the experience of physical abuse, women were asked whether they were ever slapped; pushed or something thrown at them could hurt ; Kicked , dragged, beaten, hit with fist ; Choked, strangled or burnt on purpose; threatened or hurt by gun, knife, or other weapon. Four items were inquired about sexual violence practices against women; being physically forced to have sex; having sex because of being afraid to refuse; forced to do something sexual which is degrading or humiliating and being forced to have sex after beaten by partner. All women who experienced the item in question were asked the perceived frequency (once, few times or many times) in the past 12 months and prior to the past one year and finally we asked the reasons for partner violence (19).

To asses women's experience of rape by non intimate partners we asked all women if they were ever physically forced by some one who has no sexual relationship with them to have sex when they do not want to. (4). To assess childhood sexual assault (before age 15), we asked all participants if they were forced to have any sexual contact or to do any other sexual contact or to have made sexual intercourse before age 15. For women who answered affirmatively we asked age of the women and the perpetrator at the time of the incidents and the frequencies of such events. To assess violence during women's experience of first sexual intercourse (first coitus), we asked women age at first intercourse and then asked how first sex happened and made to choose the statement which most accurately describe experience of first coitus; 1) 'I was willing/wanted to

have', 2) 'I Didn't want but tricked, persuaded, forced to marry or happened any way or 3) 'physically forced/raped'.

4.6.4 Data Collectors

The interviewers were female health workers (Nurses by profession) and previously they received standard training on counseling. Interviewers were aged 24 to 40 years and of at least three years of experience in providing clinical care for patients and they had more than 2 years of experience in counseling VCT clients. Data collectors were recruited in consultation with their immediate supervisors by considering their ability in establishing a good relationship with their clients, and their ability to record responses on questionnaire accurately. For this study they were trained for two days by the principal investigator and his assistance and a day on site support was given.

The first part of the training was devoted to sensitizing trainee interviewers on gender issues, helping them to develop basic understanding of gender based violence, its dynamics and causes and its impact on the health and wellbeing of women and children. During the sessions the subject of violence was openly discussed and participants were given the opportunities to discuss their own experience and feelings with others to help them identify women who may need support during the study and to help interviewers to reflect on the challenges and personal emotions associated with disclosing experience of violence and its implication for the study. Another focus of the training was developing skills to minimize any possible distress caused to respondents during the interview and to

learn skills for interviewing, taking into account safety and ethical guidelines. Interviewers received training on how best to ask questions about violence and how to respond if respondent did become distressed including how to become empathetic and supportive. At the end of the interview in which a woman had disclosed violence, the interviewer was trained to identify and reinforce the respondent's own copping strategies and to remind her that the information she had shared was important and would help other women. Different sources were used for the training (18, 21, and 27).

The other part of the training focused on familiarizing interviewers with the questionnaire and giving them the opportunity to practice using it. This includes holding discussion about different sections of the questionnaire, using question by question description of the questionnaire and using a guide developed for this purpose. Data collectors also conducted practice interviews to identify any possible future problems and to take remedial measures. Then the interviewers conducted pilot test the questionnaire and problems encountered summarized and discussed with each interviewer on the study site. The interviewers also suggested reducing the number of questions due to lack of time and we revised and reduced the number of questions.

4.6.5 Data Quality Control

In addition to the training of data collectors, quality control monitoring was also conducted by the supervisor and principal investigator to maintain data quality and to avoid wrongly higher or lower violence reports, missing values and appropriate remedies were taken in case of deviations. During the data collection, the principal investigator also held regular

meeting with interviewers for emotional debriefing and these meetings provided interviewers an opportunity to discuses their own feelings about the interviews.

4.7 Operational Definitions

Intimate Partner Violence (Broad IPV): For this study defined was as women's experience of any item from physical or sexual violence at medium frequency (reported by women 'few times') and high frequency (reported by women 'many times') or women experience of two or more types of violence (psychological or physical, psychological and sexual, physical and sexual or psychological, physical and sexual). Intimate partner include husband or regular male partner of women.

No or limited intimate partner violence; Defined as women experience of no intimate partner violence or only low frequency of physical or sexual violence or only one type of violence.

Childhood sexual assault: Defined as a sexual abuse experience that occurred before 15 years of age. Women categorized as having experienced childhood sexual abuse if they reported rape, forced first intercourse, forced marriage, or made to have sexual intercourse or experienced unwanted sexual contact before age 15.

Forced First Intercourse: defined as women's experience of forced or coerced penetration at first sexual intercourse (first coitus). Those women who reported use of physical force in their first coitus were considered to have experienced forced first intercourse. Women were considered as having experienced unwanted first sexual

intercourse if their first sex was unwanted or unexpected and It includes women made to have sex when they doesn't want, forced or had coerced penetration or tricked, persuaded, (forced marriage or cohabiting) at first sexual intercourse.

Adult sexual assault (Rape) by Non Intimate Partner (FSNIP): Defined as physically forced or otherwise coerced penetrative sex by any one apart from a husband or boy friend or some one who has no sexual relationship with the women before, since age of 15 years.

Current or most recent partner: is the last or the most recent regular male partner of a women.

Number of Male Partners: For this study the number of male partners was defined as the number of males with whom the women had penetrative sexual intercourse with or with out consent.

Number of regular partners: Defined as the number of males with whom the woman had penetrative sexual intercourse, lived with them in the same house or males with whom the woman had regular sexual relationship with them and perceived by woman as they were regular boyfriend.

Number of casual partners: was defined as the number of males with whom the woman had penetrative sexual intercourse with or with out consent. These include those males with whom she had once or few times sexual intercourse, other than regular partners.

Transactional Sex: is defined as exchange of sex with men for material gains and basic survival needs. It includes women who exchange sex for money, though they may not necessarily identify themselves as sex workers. We asked all women whether they had

ever engaged in sexual relationship with any one to support themselves or their family for exchange of cash, or food, cloth, cosmetics, fee for transportation, house rent, or school or for other items for the women or women's families. Women who responded yes for this question were classified as engaging in transactional sex.

Substance Use: is lifetime use of alcohol or Khat. All women who reported use of alcohol were asked about things which might happen to them after they had been drinking: got in to fight, got arrested, forced by anyone to have sex against their wishes, had sex with a men just they meet. Women who responded yes to any of these questions were classified as having history of problematic alcohol use.

4.8 Ethical Considerations

To conduct the study in an ethically sensitive and appropriate manner the following measures were taken (18).

Careful Recruitment and Training of Data collectors: all interviewers were women health workers with an educational level of a diploma or above and trained as counselors and had adequate experience in providing clinical services and counseling. The interviewers were trained for two days and conducted practice on how to interview for one extra day.

Informed Consent: Only those women who were interested to participate and provided written informed consent to access their HIV test result and link with the interview data with out using personal identifiers (names) by the counselors had participated in the study.

Interviewing: During the training of the interviewers, the importance of conducting the interview carefully was addressed with appropriate emphasis. The interviewers training

included how to introduce sections enquiring about violence carefully, forewarning the respondent about the nature of the questions, and how to help the participants to feel at ease as well as to give the opportunity to either stop the interview, or not to answer some of the questions. The interviewers also informed to tell all the participants that they were selected randomly and the interview had no connection with the testing and had no effect on the service they deserve to get from the health institution. They were also informed to tell the respondents that they could stop the interview at any time if the respondent they wish and need not answer all questions if they were not comfortable.

Privacy and Confidentiality: The informed consent and interview procedures were conducted completely in a private setting or room. The importance of maintaining confidentiality was addressed with appropriate emphasis during training. Data collectors were told not to interview women they know previously. Translators were not used to maintain confidentiality. In addition, this study was introduced to other staffs as a study on women's health and life experiences.

Referral and additional information: For the study purpose, health institutions with trained nurse in psychiatry were identified and study participants or victims of violence referred to these health institutions. We have also identified and got the cooperation of Organization for Social Services in AIDS (OSSA), which provide psychological and social support and victims of violence and women requiring such services referred to the institution. We have also contacted Ethiopian women Lawyers Association and they agreed to provide legal support including representing in court if they were asked to do so by victims of violence. Participants requiring such service were referred to the association. In addition, a small information sheet, which lists the options and services

available for women experiencing violence, including address and other health referral information was prepared and provided.

Ethical Approval: Ethical approval for the study was obtained from Addis Ababa University, Department of Community Health and written permission to conduct the study was also obtained from Addis Ababa City Administration Health Bureau and from the health institutions. Generally, every effort was made to follow all WHO ethical and safety recommendations for research on VAW and on research using HIV test results.

4.9 Data Analysis

First all completed questionnaires were checked for inconsistencies and missed values. Questionnaires with significant problems were excluded from the analysis. Before data entry appropriate coding and editing was performed. Data were entered into Epinfo 6.04d (Center for Disease Control and Prevention 2001). After data entry random counter checking of already entered data with the hard copy was performed and data cleaning like correcting outlier entries was also performed and the analysis was performed using SPSS (Statistical Package for Social Sciences).

First we calculated descriptive statistics for socio-demographic variables, prevalence of violence, various risk behaviors and HIV infection using simple frequencies, proportions and ratios. We then analyzed patterns of overlap between different types of gender based violence and we proceeded to examine associations between socio-demographic characteristics, violence, risk behaviors and HIV infection using logistic regression model. Previous studies indicated that the more severe the abuse, the grater its impact on women's physical and mental health and the impact over time of different types of abuse

and of multiple episodes of abuse also appears to be cumulative (4). Because the type of violence (psychological, physical and sexual) and the frequency of violence are conceptually important as potential determinants of women reproductive health and women HIV risk, WHO recommended research to look not just the presence of violence and HIV/AIDS but how frequency and severity of violence related to HIV/AIDS. However, yet there is no agreement on measuring the severity of violence and previously only physical acts that are more severe than slapping, pushing throwing an object are generally defined as 'severe violence', however, some observers suggest that a focus on acts alone hide the atmosphere of terror that sometimes permeates violent relationship and qualitative studies reported that some women find the psychological abuse and degradation even more intolerable than the physical violence (4).. Therefore, to explore the presence of a possible dose response relationship between violence and women's serostatus and to develop a summary measure for analysis, we assessed the number of different types and frequency of intimate partner violence with respect to women's serostatus against the baseline category of no intimate partner violence. And in our analysis we also noted that overlaps of different number of types and frequencies of IPV were empirically associated with women's serostatus

Then, we constructed a summary measure which classified women as having broad experience of intimate partner violence (two or more types of abuse or mid to high frequency physical or sexual abuse) versus limited to no experience of IPV (Psychological abuse only, or low frequency physical or sexual abuse only). This summary measure was used in all multivariate analysis.

5. RESULTS

5.1 Participation

For this study 814 eligible women were approached regarding potential participation. Of these 17(2.1%) women refused to stay and participate in the study and 18 (2.2%) reported not having regular intimate partner at the middle of the interview and 36 (4.4%) participants do not provide usable data. Overall, from 814 eligible women were approached for the study and 743 (91.3%) women were interviewed.

5.2 Socio- Demographic Characteristics of Women and Partner

From the study participants 292 (39.3%) women were between age group 18 and 24 and 319(42.9%) were between the age group 25 to 34 (Table 1). The levels of completed education reported showed that more than 83% had formal education and most of them (54.6%) attended high school. About 104 (14%) of our study participants reported their first sex before age 15 and the majority 314 (42.3%) reported age 15 to 17 for their first sex. From all participants 253 (34%) women were currently married or living with a male partner, 282 (38%) had a steady boy friend with whom they were neither married nor living together, 153 (20.6%) were separated, divorced or widowed and the rest 55 (7.4%) women had no sexual relationship with a male partner at the time of the study. Overall, 61.2% of women were ever married and 38.8% were never married in their life time but had at least one regular male partner.

Table 1: Social- demographic characteristics of women and partner, among 743 women attending VCT services in 6 health institutions in Addis Ababa city, 2005.

Women's socio-demographic characteristics		Out of total Number (%)	HIV Positive Number (%)	OR (95%CI)
Age of women (in years)	15 – 24 Years	292 (39.3)	58 (19.9)	1.00
	25 - 34 Years	319 (42.9)	139 (43.6)	**3.1 (2.2, 4.5)**
	35 - 44 Years	103 (13.9)	55 (53.4)	**4.6 (2.9, 7.5)**
	45 and above Years	29 (3.9)	11 (37.9)	**2.5 (1.1, 5.5)**
Education of Women	Illiterate/ Elementary (1-6)	268 (36.1)	108 (40.3)	**2.7 (1.4, 5.0)**
	High school (7-12)	406 (54.6)	141 (34.7)	**2.1 (1.1, 3.9)**
	12 +	69 (9.3)	14 (20.3)	1.00
Age at First Sex	< 15 years	104 (14.0)	45 (43.3)	**2.0 (1.1, 3.8)**
	15- 17 years	314 (42.3)	101 (32.2)	1.2 (0.7, 2.2)
	18-20	218 (29.3)	78 (35.8)	1.5 (0.8, 2.6)
	Don't Know	31 (4.2)	18 (58.1)	**3.6 (1.5, 8.7)**
	21-33 YEARS	76 (10.2)	21 (27.6)	1.00
Current Marital Status	Married/live together	253 (34)	89 (35.2)	**1.5 (1.1, 2.2)**
	Boy friend/not live together	282 (38)	74 (26.2)	1.00
	Separated/divorced	83 (11.2)	27 (32.5)	1.4 (0.8, 2.3)
	Widow	70 (9.4)	55 (78.6)	**10 (5.5, 19)**
	Currently no partner/single	55 (7.4)	18 (32.7)	1.3 (0.7, 2.6)
Duration (length) of Relationship	< 1 year	77 (10.4)	16 (20.8)	1.00
	One year	102 (13.7)	21 (20.6)	1.0 (0.5, 2.1)
	2-4 years	269 (36.2)	93 (34.6)	**2.0 (1.1, 3.7)**
	5-7 years	133 (17.9)	66 (49.6)	**3.8 (2.0, 7.2)**
	8-10 years	75 (10.1)	37 (49.3)	**3.7 (1.8, 7.6)**
	>10 years	87 (11.7)	30 (34.5)	**2.0 (1.0, 4.1)**
Occupation of women	Professional/employed	90 (12.1)	26 (28.9)	1.00
	Pity trader/ service worker	95 (12.8)	34 (35.8)	1.4 (0.7, 2.6)
	Seasonal or daily laborer	154 (20.7)	61 (39.6)	1.6 (0.9, 2.8)
	House wife/household work	212 (28.5)	83 (39.2)	1.6 (0.9, 2.7)
	Student/ no job/Live with family	192 (25.8)	59 (30.7)	1.1 (0.6, 1.9)
Current/Most Recent Partner's Age(Years)	15 - 24	50 (7.00)	6 (12.0)	1.00
	25 - 34	350 (48.8)	101 (28.9)	**3.0 (1.2, 7.2)**
	35 - 44	202 (28.2)	93 (46.0)	**6.3 (2.6, 15)**
	45 +	115 (12.5)	51 (44.3)	**5.8 (2.3, 14)**
	Do not know his age	26 (3.5)	12 (46.2)	**6.3 (2.0, 19)**
Partner's Education	Illiterate	25 (0.3)	42 (50.0)	**2.5 (1.5, 4.4)**
	Elementary (1-6)	44 (6.0)	16 (36.4)	1.5 (0.7, 3.0)
	High school (7-12)	422 (59.5)	141(33.4)	1.3 (0.8, 1.9)
	12 +	204 (27.5)	41(28.3)	1.00
	Participant doesn't know	48 (6.5)	23 (47.9)	2.3 (1.2, 4.6)
Partner's Occupation	Professional/employed	206 (27.7)	55 (26.7)	1.0 (0.6, 1.7)
	Seasonal/Manual Worker	153 (20.6)	61(39.9)	**1.8 (1.0, 3.1)**
	Driver/Military/Police	120 (16.2)	53(44.2)	**2.1 (1.2, 3.7)**
	Trader/ Merchant	147 (19.8)	51(34.7)	1.4 (0.8, 2.5)
	Died	22 (3.0)	17(77.3)	9.0 (3.0, 27)
	Student/No job/retired	95 (12.8)	26(27.4)	1.00

Women were asked the duration of their relationship with their current or most recent partner and 39.7 % women reported relationship of five or more years. Only 11.6% of women were employed or had professional job and currently, 44.8% of women earn money and the rest 55.2% have no job in which they can get money.

The distribution of the men's age was generally higher than that of women's and more than 90% of women had relationship with older partner and of which more than half of the women were in regular relationship with partner older than them by five or more years(Table 1). Only 7% of women had regular relationship with a partner less or equal to their age. The levels of completed education reported for partners showed that more than 93% had formal education and most of them (59.5%) attended high school. The distribution of the men's education was generally comparable to the women's, but the men were far more likely to be earning money. Thirty percent of women were reported that their current or most recent partner has been a seasonal or daily worker, in the military, police, or driver.

5.3 Prevalence of Intimate Partner violence

From our study participants 576 (77.5%) women reported being emotionally, physically or sexually assaulted by intimate male partner in their life time with 524 (70.5%) of the overall sample reporting more than one incident (Table 2). Likewise, 427 (57.5%) participants reported being emotionally, physically or sexually assault by a male partner at least once during the past 12 months, with 406(35.7%) reporting more than one

incident. About 167 (22.5%) participants reported no abuse in their lifetimes and 316 (42.5%) reported no abuse in the past year.

Four hundred six (54.6 %) participants reported being physically assaulted by a male partner at least once in their life time, with 337 (45.4%) reporting more than one incident (Table 2). About 295 (39.3%) participants reported being physically abused by a male partner in the past 12 months with 236 (31.8 %) of the overall sample reporting more than one incident. The most common form of life time physical violence reported (52.9%) was moderate form of violence which is the male partner pushing, slapping or throwing some thing that could hurt the women. About 295 (37.7%) women were experienced at least one severe form of physical violence in their lifetime and 231 (31.1%) reported more than one incident including hitting, kicking, choking or use of weapon.

About 370 (49.8%) of participants reported that they experienced at least one form of sexual violence from their male partners in their life time, with 324 (43.6%) women experiencing more than one incident. Likewise, 265 (35.7%) women experienced one or more acts of sexual violence in the past 12 months, with 237 (31.4%) reporting more than one incident. The most common form of sexual violence reported was the male partner forcing the respondent to have sex and 188 (25.3%) of women reported being forced to have sex just after they were physically assaulted or beaten by male partner.

Table 2-: Prevalence of Intimate partner violence - Psychological, physical and Sexual violence in Lifetime and in the past 12 months among 743 women attending VCT services in 6 health institutions in Addis Ababa city, 2005.

Life Time IPV	**IPV, Yes**	**Medium/High Frequency**
	Numb (%)	Numb (%)
No Intimate Partner Violence	167 (22.5)	0(0.0)
Psychological violence	530 (71.3)	481 (64.7)
Physical Violence	406 (54.6)	337 (45.4)
Severe physical Violence	295 (39.7)	231 (31.1)
Sexual Violence	370 (49.8)	324 (43.6)
Any Physical or sexual Violence	477 (64.2)	403 (54.2)
Any intimate partner violence	576 (77.5)	524 (70.5)
Overlaps between types of IPV		
Only One type (Psychological, physical or sexual)	133 (17.9)	94 (12.7)
Psychological + Sexual Violence	50 (6.70)	47 (6.30)
Psychological + Physical Violence	94 (12.7)	90 (12.1)
Physical + Sexual Violence	12 (1.60)	7 (0.10)
Two types violence (of Psychological, physical, sexual)	156 (21.0)	144 (19.4)
All types (Psychological + Physical+ Sexual)	287 (38.6)	286 (38.5)
IPV In the past 12		
No Intimate Partner Violence		
Psychological violence	394 (53.0)	377 (50.7)
Physical Violence	295 (39.3)	236 (31.8)
Severe physical Violence	212 (28.5)	156 (21.0)
Sexual Violence	265 (35.7)	233 (31.4)
Any Physical or sexual Violence	339 (45.6)	286 (38.5)
Any intimate partner violence	427 (57.5)	406 (54.6)
Overlaps between types of IPV		
Only One type (Psychological, physical or sexual)	109 (14.7)	93 (12.5)
Only Two type (Psy+ Phy or Psy + Sex or Phy +Sex)	112 (15.1)	107 (14.4)
All types (Psychological + Physical+ Sexual)	206 (27.7)	206 (27.7)
OTHER SEXUAL VIOLENCES	**No**	**%**
Any Childhood sexual Abuse <15	221	29.7%
Unwanted FI or Rape at any age	297	40.0%
Unwanted first intercourse at any age	276	37.1%
Forced first intercourse at any age	153	20.6%
Raped by Non Intimate partner at any age	112	14.9%
Childhood sexual Abuse	**No**	**%**
Childhood sexual contact before 15	154	20.7%
Raped/forced at first intercourse <15	81	10.9%
Forced first intercourse < 18	114	15.3%
Rape/Unwanted/forced first intercourse < age 18	208	28.0%
Adult sexual abuse;(forced at first intercourse /raped ≥age 15)	220	29.6%

5.4 Overlaps between Different Types of Intimate Partner Violence

From all study participants 99(13.3%) reported lifetime psychological violence. Only 21 (2.8%) reported sexual violence only, 13 (1.7%) physical violence only and 94 (12.7%) reported experiencing psychological abuse with physical abuse, 50 (6.7%) reported experiencing psychological abuse with sexual abuse, and the great majority 127 (38.6%) reported experiencing psychological, physical and sexual abuse(Table 2). Other patterns of overlap were reported by 12 (1.6%) of participants

From different types of intimate partner violence (psychological, physical or sexual) 156 (21%) women experienced two of the three types and 287(38.6%) experienced all types of intimate partner violence. Considering different overlaps of types and frequency of intimate partner violence, 461 (62%) of women experienced two or more types of violence or medium to high frequency of physical or sexual violence (Broad IPV) in their life time.

5.5 Prevalence of Other sexual Violence

About 81 (10.9%) participants reported that they were physically forced in their first intercourse or experienced rape before age of 15 and a total of 221 (29.7%) of participants reported childhood sexual assault prior to age 15 years (either unwanted sexual contact, rape, forced first intercourse , or coerced to marriage) (Table 2). From the study participants 112 (14.9%) women reported experience of rape by non intimate partner.

A total of 153 (21.8%) women reported that they were physically forced or raped at their first sex. About 114 (15.3%) women were raped or forced at their first sex before they were 18 years old and 81 (10.9%) were raped or forced at their first sex before they were 15 years old(Table 2). Generally, 276 (37.1%) reported that their first sex was unwanted (i.e. physically forced, raped or tricked or coerced in to sex). Forced sex in adulthood and in childhood was most likely to be perpetrated by strangers (26.8%), employers or someone at work place (17%) (Data not shown in tables). Family members, friends of family members and neighborhoods, each account for 13.8% of the total perpetrators. Neighbors were sited as perpetrators for 35.7% of childhood sexual abuse (sexual contact).

With regarded to violence perpetrated by intimate partners, the most commonly cited reason for assault by intimate male partner was the jealousy of the partner or suspecting women's infidelity; this was cited by 48.4% of women reporting intimate partner violence. Other commonly cited reasons were the woman's refusal to have sex (44.3%), alcohol use by men (41.6%), suspected infidelity of partner by the woman (mistrusting partner) (35%), arguments over money (23.3%). Other reasons were less frequently cited as a reason for violence.

5.6 Reason for Seeking VCT Service and Prevalence of HIV Infection

During the pre test counseling, women were asked their main reason for seeking VCT service and 12.7% of participants reported that they seek VCT because they perceived having higher risk of HIV and 34.9% perceive that their partner had higher risk or risk

behavior. Of all participants only 6.6% , 4.2% and 3.4%, come to VCT for premarital or reunion, ANC and visa purpose respectively. Twenty participants (2.7%) reported that they come to VCT as a result of sexual violence. Of all participants 65.4% reported that their current or most recent partner was not tested for HIV. During the pre test counseling women were asked about their intention or plan to share their test result to current regular partner. Among women who were in regular relationship with a male partner at the time of the study, 380 (72%) has a plan to share their test result to their partner and 27% refused or were not sure about sharing their test result to their partner.

From the study participants 263 (35.4%) women were tested HIV-positive and 480 (64.6%) were tested HIV-negative on the date of the interview. The prevalence of HIV among women below age 25 was 19.9% and for age group 25 to 34 was 43% and for age group 35 to 45 was 53.4%. The prevalence of HIV among currently married women or women living with a partner was 35.2% and among widow was 78.6%. The prevalence of HIV among ever married and never married was 73.8% and 26.2% respectively.

5.7 Prevalence of High Risk Behavior

Study participants reported from 1 to 29 life time male partners with a mean of 3.54, and a median of 2. About 228 (37.6%) participants reported having only one male partner in their lifetime and 578 (62.4%) of participants reported less than five male partners in their life time (Table 3).Of particular note 335 (45.1%) of participants reported having at least one casual partner in their life time and 141 (19%) of participants reported casual

partners in the past 12 months. About 203 (28%) women reported that they had ever used condom with partner to avoid STDs. From those women who had casual partners only 28.1% reported as they used condom with at least one casual partner. From those women who had never used condom with current or most recent regular partner, 119 (19.4%) women reported requesting current or most recent regular partner to use condom, of which 84% of participants partners refused to use condom.

About 144(19.4%) of the women were engaged in transactional sex (sex for material or money gain or to support themselves and family) (Table 3). About 349 (47%) women reported lifetime (ever) use of alcohol and only 19% of women ever used Khat. From those who ever used alcohol 91(26.1%) women reported problems associated with use of alcohol like engaging in fight, having accident, injury, arrest, or having sex with some one just met or being forced to have sex.

We assessed women's perceptions about their current or most recent regular partners HIV risk behavior and substance use. About 418 (56.2%) women reported as they know or believe that their current partner had have sexual relationship with other women (other than the respondent) while they were in steady or regular sexual relationship. Likewise, 200 (27%) women reported that they know, believe or think that that their current or most recent partner ever had sex with commercial sex workers. Overall, 545 (74.1%) women reported that their current or most recent partner use alcohol, of which 180 (33%) women reported that their partners use alcohol four or more days per week. Besides, 270 (35.3%) women reported that their partners use Khat, of which 118 (43.7%) reported use of Khat by their partners four or more days per week.

Table 3: Prevalence of Substance use and risky sexual behavior and Crude odds ratios for testing HIV seropositive by substance use and sexual behavior among 743 women attending VCT service in 6 health institutions in Addis Ababa city, 2005.

WOMEN RISK BEHAVIOR	Numb.	Percent %	HIV positive No %	Crude OR OR	95% CI
Number of male Partners in life time					
1 male partner	228	(30.7)	71 (27.0)	1.0	
2 male partners	166	(22.3)	53 (20.2)	1.3	(0.8, 2.0)
3-4 male partners	184	(24.8)	72 (27.4)	2.0	**(1.1, 3.4)**
4-8 male partners	108	(14.7)	39 (36.0)	2.6	**(1.3, 5.3)**
≥ 8 partners	57	(7.7)	28 (49.1)	2.1	**(1.1, 4.1)**
Num. of Regular Male Partners, Lifetime				2.7	**(1.1, 6.7)**
1 Regular male partner	305	(41.0)	86 (28.2)		
2 Regular male partners	209	(28.1)	75 (35.9)	1.4	(1.0, 2.1)
3 Regular male partners	103	(13.9)	47 (45.6)	2.1	(**1.4**, **3.4**)
≥ 4 Regular male partners	126	(17.0)	55 (43.7)		(**1.3**, **3.0**)
Ever Casual partners life time	335	(45.1)	120 (35.5)	2.0	
Have Casual partner past year	141	(19.0)	145 (35.5)	0.6	(0.3, 0.9)
Never used condom	540	(72.7)	198 (36.7)	1.0	(0.7, 1.4)
Ever engaged transactional sex	144	(19.4)	53 (36.8)	0.7	(0.4, 1.1)
Alcohol or Substance Use				1.4	(1.0, 2.0)
Ever used alcohol	349	(47.0)	198 (36.7)	1.8	(**1.3**, **2.4**)
Problematic alcohol use	91	(12.2)	53 (36.8)	1.6	(**1.0**, **2.5**)
Women Ever used Khat	140	(18.8)	148 (42.4)	1.8	(**1.3**, **2.7**)

CURRENT OR MOST RECENT PARTNER RISK BEHAVIOR	No	%	No (%)	OR	95% CI
Partner has sex with other women (n=612)					
I think	224	(30.1)	94 (42.0)	**3.9**	**(2.6, 6.0)**
Yes	194	(26.1)	88 (45.4)	**3.0**	**(1.8, 5.1)**
Partner Had sex with CSWs (n=409)	200	(26.9)	101 (50.5)	**5.1**	**(3.2, 8.0)**
Partner use alcohol /drunk	545	(73.4)			
One day or less/week	204	(27.5)	58 (28.4)	1.1	(0.6, 2.1)
2-3 days/week	161	(21.7)	66 (41.0)	**2.1**	**(1.4, 3.2)**
4- 6 days or more/week	180	(24.2)	96 (53.0)	**4.1**	**(2.6, 6.4)**
Partner use Khat /chew Khat					
Less than 4 Days/Week	145	(19.5)	49 (33.8)	1.1	(0.7, 1.6)
Four or More Days/Week	118	(15.9)	62 (52.5)	**2.4**	**(1.6, 3.6)**

5.8 Relationships between Violence and HIV risk behaviors

Table 4 provides odds ratios from multiple logistic regression models for the association between intimate partner violence and each risk behaviors; To explore the presence of a possible ‘dose-response’ relationship between violence and risk, we modeled the number of different types of abuse reported against a baseline category of no IPV (counting psychological, physical and sexual). We then summarized partner violence as "broad" experience of IPV (two or more types of abuse or mid to high frequency physical or sexual abuse) versus "limited to no" experience of IPV (psychological abuse only, or low frequency physical or sexual abuse only) to address the observation that both frequency of abuse and number of types were associated with risk behaviors and HIV infection.

After adjustment for age, education and occupational status, childhood sexual abuse was associated with having three or more male sex partners in one’s lifetime (because of its association with women serostatus), having casual partners, engaging in transactional sex, and alcohol or Khat use, but not with condom use. Women experience of FFI or rape (before age 18) was associated with all risk behaviors except never use of condom and alcohol or Khat use. Women’s experience of rape as adult also associated with all risk behaviors except transactional sex and never use of condom. After accounting for various women socio-demographic characteristics and factors supposed to influence women risk of violence such as having multiple partners, casual partners, engaging in transactional sex and substance use, women experienced childhood sexual abuse or had forced first intercourse were more likely to be abused in adult life by intimate partners

(tables4). Women's experience of rape by non intimate partner as adult was associated with a 2 fold elevation in risk for lifetime IPV and significantly associated with increased risk of IPV in the past year than women not raped by non intimate partner.

After adjusting for socio-demographic characteristics and current or most recent regular partner risk behavior, having four or more male partners in life time was associated with women life time experience of intimate partner violence and having five or more male partners was associated with women's experience of IPV in the past 12 months. Use of Khat was also associated with partner violence. Having casual partners, engaging in transactional sex, life time use of alcohol and condom use were not associated with IPV. Likewise, after adjustment for socio-demographic characteristics and for women risk behavior, women whose partner consumed alcohol four or more days per week faced risks of lifetime IPV 5 times higher than those whose partners never drank (Table 4). Women whose partners consumed alcohol one to three days per week was also significantly reported partner violence than those with partners in the non–drinking reference group. Women who knew or believe that their partner might have had sex with other women while they were in relationship were 4 times likely to report intimate partner violence in. Likewise women who believed or suspected that their partners had sex with commercial sex workers were also 2 times more likely to report intimate partner violence.

Table 4: Odds ratios for associations between IPV and risky behaviors, among women attending VCT service in Addis Ababa city, 2005.

Risk Behavior and Substance Use	Life Time Intimate Partner Violence				12 months IPV	
	Crude Odds Ratio		Adjusted Odds Ratio		Adjusted Odds Ratio	
Women Risk Behavior/Subst. Use	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
3 Male Partner	**2.6**	**(1.6, 4.1)**	2.0	(0.9, 4.1)	1.8	(0.9, 3.7)
4 Male Partners in life time	**4.4**	**(2.3, 8.2)**	3.1	(**1.1**, **8.4**)	2.4	(0.9, 6.2)
≥5 Male in life time	**5.7**	**(3.3, 9.9)**	4.7	(**1.7**, **12.9**)	3.5	(**1.4**, **8.6**)
Casual partner, lifetime	**2.7**	**(2.0, 3.7)**	1.1	(0.6, 2.1)	1.4	(0.8, 2.4)
Ever Transactional Sex	**1.8**	**(1.2, 2.6)**	0.4	(0.2, 0.9)	0.7	(0.4, 1.2)
Never used condom	1.4	(1.0, 1.9)	1.2	(0.7, 2.0)	1.7	**(1.0, 2.8)**
Women Alcohol Use	**4.5**	**(2.6, 8.0)**	1.2	(0.6, 2.8)	1.1	(0.6, 2.2)
Women use of Khat	**3.3**	**(2.0, 5.5)**	2.6	(**1.2**, **5.3**)	1.5	(0.8, 2.8)
Partner Risk Behavior						
Partner has sex with other women	**8.5**	**(5.8, 12.)**	4.2	**(2.4, 7.4)**	3.1	(**1.7**, **5.6**)
Partner has sex with CSWs	**10.9**	**(6.7, 18)**	2.0	**(1.0, 4.1)**	2.1	(**1.1**, **4.1**)
Partner Alcohol Use 1-3days/week	**3.3**	**(2.3, 4.8)**	1.8	**(1.1, 3.1)**	1.5	(0.9, 2.5)
Partner Alcohol Use ≥ 4days/week	**14.1**	**(8.0, 24.9)**	5.0	**(2.3, 11)**	2.4	(**1.3**, **4.7**)
Partner Khat use ≤ 3days/week	**1.8**	**(1.2, 2.7)**	1.3	(0.7, 2.1)	1.2	(0.7, 1.9)
Partner Khat use ≥4 days/week	**6.9**	**(3.8, 12.)**	1.4	(0.6, 3.1)	1.7	(0.7, 3.4)
Childhood Sexual Assaults	**1.9**	**(1.4, 2.7)**	1.7	(**1.1**, **2.9**)	1.3	(0.8, 2.1)
Forced First Intercourse	**2.3**	**(1.6, 3.5)**	2.0	(**1.1**, **3.6**)	1.3	(0.7, 2.2)
Adult Rape by NIP	**2.5**	**1.7, 3.5)**	2.4	(**1.4**, **4.1**)	1.7	(**1.1**, **2.8**)

NB; The logistic regression models is adjusted for women age, education, occupation, marital status, duration of relationship, age difference with partner, and for partner age and education

After adjusting for women's age, education, current marital status, age difference and duration of relationship with current or most recent partner, partner age and education, women in violent relationship were significantly more likely to report not using condom with current or most recent partner (OR=1.79, 95% CI: 1.18, 2.73) than women living in non violent relationship, and significantly more likely to report to have had requested current or most recent partner to use condom to avoid STDs (OR=1.98, 95% CI: 1.25, 3.12) and reported partner refusal to use condom (OR=2.56, 95% CI: 1.53, 4.28) (Data not shown in tables). From women who reported medium or high frequency of physical or sexual violence or two or more types of abuse, 238 (51.6%) women mentioned refusal of sex as one of the reasons for assaulting them.

5.9 Association between gender based violence, and HIV after adjusting for Risk Behavior and Socio-demographic Characteristics

We have shown that different forms of gender-based violence are associated with increased risk behavior. We turn now to a broad consideration of the connections between various types of violence and risk of HIV infection (Table 5) presents crude and adjusted odds ratios for prevalent HIV infection associated with various types of intimate partner violence.

The occurrence of a single type or only two types of intimate partner violence (psychological, physical or sexual) was not associated with increased odds of being HIV positive. But the co-occurrence of all three types of violence and increasing frequency of physical and sexual violence associated with increased odds of HIV. Only small proportion of women reported single or two types of violence and these women were less

likely to report higher frequency. When the number of types of partner violence summarized nearly identical effect was observed for two or three types versus none or one. Therefore, to explore the presence of possible dose response relationship between violence, risk behavior and women's serostatus, we developed a summary measure which considered both the number of types of IPV and frequency of IPV. We summarized women's experience of intimate partner violence as "Broad" experience of IPV (two or more types of violence or medium to high frequency physical or sexual violence) versus 'limited to no' experience of IPV (Psychological violence only or low frequency of physical or sexual violence). Our summary measure yielded a point estimate for HIV risk (OR=3.54, 95% CI: 2.28, 5.50).

Table 5: Odds ratios for testing HIV seropositive by experience of IPV among women attending VCT services in Addis Ababa City, 2005.

Intimate Partner Violence, life time	**HIV Serostatus**					
Types of IPV	**Positive**		**Crude OR**		**Adjusted**	
	No	%	**OR**	**95% CI**		
Psychological violence (no versus yes)	314	(59.1)	**2.5**	**(1.7, 3.6)**	0.9	(0.5, 1.5)
Physical Violence (no vs yes)	212	(52.2)	**3.6**	**(2.6, 4.9)**	**2.2**	**(1.3, 3.6)**
Severe physical Violence (no vs yes)	138	(46.8)	**2.9**	**(2.1, 4.0)**	**2.7**	**(1.8, 4.3)**
Sexual Violence (no vs yes)	181	(48.9)	**4.2**	**(3.1, 5.9)**	**3.4**	**(2.2, 5.4)**
Frequency of Physical or sexual violence						
No physical or Sexual Violence	218	(82.0)	1.0		1.0	
Low frequency	68	(90.7)	0.5	(0.2, 1.1)	0.4	(0.2, 0.1)
Medium frequency	62	(58.5)	**3.2**	**(2.0, 5.3)**	**3.3**	**(1.8, 6.0)**
High frequency	132	(44.6)	**5.6**	**(3.8, 8.3)**	**5.3**	**(3.2, 8.7)**
Overlaps/number of types of IPV						
No IPV	134	(80.2%)	1.0		1.0	
One of Psychological, physical or sexual	108	(81.2%)	0.9	(0.5, 1.7)	0.9	(0.5, 1.7)
Two of Psychological, physical, sexual	115	(74.2%)	1.5	(0.9, 2.4)	1.2	(0.7, 2.3)
All types (Psychol+ Physical+ Sexual)	123	(42.7%)	**5.4**	**(3.5, 8.5)**	**6.1**	**(3.4, 10.8)**
Summary Measure for IPV, Lifetime						
No or Limited IPV	232	(82.3%)	1.0		1.0	
Broad IPV*	448	(55.8%)	**4.0**	**(2.8, 5.7)**	**3.5**	**(2.3, 5.5)**
IPV in the past 12 months						
Frequency of Physical or sexual violence						
No physical or Sexual Violence	291	(72.0%)	1.0			
Low frequency	45	(84.9%)	0.5	(0.2, 1.0)	0.6	(0.3, 1.5)
Medium frequency	57	(57.0%)	**1.9**	**(1.2, 3.1)**	**3.1**	**(1.8, 5.5)**
High frequency	87	(46.8%)	**2.9**	**(2.0, 4.2)**	**3.6**	**(2.2, 5.9)**
Overlaps/number of types of IPV						
No Vs Two of Psychol, physical, sexual	87	(77.7%)	0.6	(0.4, 1.0)	0.9	(0.5, 1.7)
No Vs All types	87	(42.2%)	**3.0**	**(2.1, 4.3)**	**5.1**	**(3.0, 8.8)**
Summary Measure for IPV, past 12 months						
No or Limited IPV	296	(72.0%)	1.0			
Broad IPV*	184	(55.4%)	**2.1**	**(1.5, 2.8)**	**2.6**	**(1.7, 4.0)**

NB: adjusted for women age, educational level, occupation, current marital status and duration of relationship with current or most recent regular partner and for current or most recent regular partner age, education and risk behaviors.

Table 6: Crude odds ratios for testing HIV seropositive by experience of various forms of sexual violence among women attending VCT services in Addis Ababa City, 2005.

EVER/NEVER COMPARISONS	HIV Positive		HIV Negative		Crude OR	
	No	%	No	%	OR	95% CI
Childhood sexual Abuse (before age 15)*	86	38.9%	135	61.1%	1.2	(0.9, 1.7)
Forced at first intercourse at any age	65	42.5%	88	57.5%	1.5	(1.0, 2.1)
Unwanted first intercourse at any age	110	39.9%	314	67.2%	1.4	(1.0, 1.9)
Rape/FFI/UFI < 18	87	41.8%	121	58.2%	1.5	**(1.1, 2.0)**
Raped by Non Intimate at any age	36	32.1%	76	67.9%	0.8	(0.6, 1.3)
MULTI-LEVEL COMPARISONS						
Childhood sexual Abuse						
Limited IPV or No GBV**	33	19.0%	141	81.0%	1.0	
CSA alone	12	19.7%	49	80.3%	1.1	(0.5, 2.2)
IPV + CSA	74	46.3%	86	53.8%	**3.7**	**(2.3, 6.0)**
Forced at first intercourse						
Limited IPV or No GBV	33	19.0%	141	81.0%	1.0	
FFI alone	6	16.7%	30	83.3%	0.9	(0.3,2.2)
IPV + FFI	59	50.4%	58	49.6%	**4.4**	**(2.6,7.3)**
Forced First Intercourse before age 18						
Limited IPV or No GBV	33	19.0%	141	81.0%	1.0	
FFI before age 18 alone	7	16.3%	36	83.7%	0.8	(0.3, 2.0)
IPV+ FFI before age 18	80	48.5%	85	51.5%	**4.0**	**(2.5, 6.5)**
Unwanted first intercourse at any age						
Limited IPV or No GBV	141	81.0%	33	19.0%	1.0	
Unwanted FI alone	56	87.5%	8	12.5%	0.6	(0.3, 1.4)
IPV + Unwanted FI	110	51.9%	102	48.1%	**4.0**	**(2.5, 6.3)**
Any CSA, Rape, FFI , UFI						
Limited IPV or No GBV						
CSA/Rape /FFI/UFI at any age **only**	17	15.7%	91	84.3%	0.8	(0.4, 1.5)
Intimate Partner Violence only	84	45.4%	101	54.6%	**3.6**	**(2.2, 5.7)**
IPV+ CSA/Rape /FFI/UFI at any age	129	46.7%	147	53.3%	**3.8**	**(2.4, 5.9)**

***** include unwanted sexual contact, forced first sex and rape before age 15 years

** women reported no CSA, FFI, Adult sexual Assault (rape) by NIP or no IPV or reported only limited IPV

Women experience of forced or unwanted first intercourse seems associated with increased odds of HIV infection, with out considering the effect of IPV (table 6). However, neither child sexual assault, forced first intercourse, nor adult sexual assault by non partners were associated with increased odds of being HIV positive when they occurred in absence of partner violence. Women who had experienced both forced first intercourse and partner violence had slightly increased HIV risk.

Except alcohol use all other women risk behavior such as number of partners, having casual partners, engaging in transactional sex, never used condom were not associated with women's risk of HIV infection. Women who knew or believed that it is very likely their partners to have had sex with other women while they were in relationship were 4.19 (OR=4.19, 95%CI; 2.37, 7.42) times more likely to have experienced IPV in lifetime (Table 4) and such women were almost two times (OR=1.97 95%CI: 1.06, 3.65) more likely to have a positive test result (Table 7). Women who knew or believed it very likely for their partners to have had sex with commercial sex workers were 2 times more likely (OR=2.01, 95%CI; 1.0, 4.1) to have experienced IPV in their life time and in the past year (OR=2.07, 95%CI; 1.05, 4.06) and they were also 2 times more likely (OR=2.20, 95% CI: 1.09, 4.42) to have positive test results. Besides, women reported current partner use of alcohol four or more days per week were 5 times more likely (OR=5.01, 95%CI; 2.33, 10.8) to report IPV and 2 times more likely (OR=2.02, 95%CI; 1.06, 3.86) to have positive test result.

Table 7: Multiple logistic regression model, showing association between risk behavior, and women HIV serostatus a) after adjustment for socio-demographic characteristics, and risk behavior of women and partner, b) ajested for socio-demographics, and Intimate Partner Violence among women attending VCT services in Addis Ababa City, 2005.

	HIV Positive Serostatus					
	Crude Odds Ratio		Adjusted for SDCX& RB[a]		Adjusted for SDCX, RB & IPV[b]	
	OR	95% CI	OR	95% CI	OR	95% CI
Broad IPV	**3.99**	**(2.79, 5.69)**			**3.54**	**(2.28, 5.50)**
Women risk behavior						
Number of Male partners in life time						
1 Male Partner	1.0					
2 Male Partners	1.3	(0.8, 2.0)	0.9	(0.5, 1.6)	1.1	(0.7, 1.9)
3 Male Partners	**2.0**	**(1.1, 3.4)**	1.1	(0.5, 2.1)	1.5	(0.8, 2.9)
4 Male Partners	**2.6**	**(1.3, 5.3)**	1.2	(0.5, 3.0)	1.7	(0.7, 3.8)
5-8 Male Partners	**2.1**	**(1.1, 4.1)**	0.9	(0.4, 2.1)	1.4	(0.6, 3.2)
≥9 Male Partners	**2.7**	**(1.1, 6.7)**	1.8	(0.6, 5.4)	2.4	(0.8, 7.0)
Casual partner, lifetime	0.6	(0.3, 0.9)	0.8	(0.4, 1.3)	0.8	(0.5, 1.4)
Ever Transactional Sex	0.7	(0.4, 1.1)	0.5	(0.3, 0.9)	0.6	(0.4, 1.1)
Never used condom	1.4	(1.0, 2.0)	0.7	(0.4, 1.1)	0.9	(0.5, 1.3)
Women Alcohol Use						
1-3days/week	**2.0**	**(1.2, 3.3)**	1.4	(0.8, 2.6)	**1.9**	**(1.1, 3.4)**
≥ 4days/week	**4.7**	**(1.2, 18.9)**	**7.9**	**(1.5, 41.)**	**10.9**	**(2.3, 51)**
Women use of Khat						
≤ 3days/week	1.4	(0.9, 2.2)	1.6	(0.9, 2.78)	1.6	(1.0, 2.7)
≥4 days/week	2.0	(0.8, 5.3)	2.0	(0.6, 6.4)	2.6	(0.9, 7.6)
Partner Risk Behavior [c]						
Partner has sex with other women					1.0	
Yes, I know /I think/may be	**3.9**	**(2.6, 5.9)**	**2.0**	**(1.1, 3.7)**	1.9	(1.0, 3.8)
Don't Know	**3.0**	**(1.8, 5.1)**	**2.0**	**(1.0, 3.9)**	1.5	(0.7, 3.2)
Partner has sex with CSWs	**5.1**	**(3.2, 8.0)**	**2.2**	**(1.1, 4.4)**	**2.1**	**(1.0, 4.6)**
Partner Alcohol Use						
< 1day/week	1.1	(0.6, 2.1)	1.6	(0.8, 3.4)	1.5	(0.7, 3.3)
1-3days/week	**2.1**	**(1.4, 3.2)**	1.3	(0.8, 2.3)	1.2	(0.7, 2.2)
≥ 4days/week	**4.1**	**(2.6, 6.4)**	**2.0**	**(1.1, 3.9)**	1.5	(0.8, 3.0)
Partner Khat use						
≤ 3days/week	1.1	(0.7, 1.6)	0.9	(0.5, 1.5)	0.9	(0.5, 1.5)
≥4 days/week	**2.4**	**(1.6, 3.6)**	1.4	(0.7, 2.6)	**2.0**	**(1.1, 3.9)**

[a] NB: multiple logistic regression models are adjusted for respondent age, education, current marital status, duration of relationships, occupation and partner age and for women and partner risk behavior.

[b] also adjusted for the above mentioned and broad intimate partner violence

[c] Adjusted for the above mentioned variables and partner risk behavior; because of high correlation between partner risk behavior and IPV, when partner risk behavior included in the model the strength of association between IPV and HIV infection reduce to (OR= 2.95, 95% CI: 1.76, 4.93)

6. DISCUSSION

We assessed the prevalence and associations between newly diagnosed HIV infection and experience of intimate partner violence, childhood sexual assault, forced first intercourse and adult sexual assault by non partner among 743 women seeking VCT services in six health institutions in Addis Ababa. After adjustment for the women's social and demographic risk factors and women's risk behavior, intimate partner violence was associated with HIV seropositivity. Childhood sexual assault, forced first intercourse and adult sexual assault by non partner were not associated with HIV serostatus.

From 743 women who participated in the study 263 (35.4%) tested positive for HIV. The prevalence of HIV observed among study was higher than the prevalence observed in 2003 among VCT clients in Ethiopia (2). The possible reasons for higher prevalence may be due to our eligibility criteria, which exclude women who have no steady sexual relationship seem contributed for the elevated prevalence. To address ethical and safety issues, we excluded those women who come to these VCT centers with their partners (couples), the majority for premarital purpose, which probably represent lower prevalence groups (2). Even if we tried to exclude those women who come to confirm positive result and women who previously worked as commercial sex worker, it is difficult to assume genuine response from all participants.

This study also documented high prevalence of intimate partner violence. The life time and recent intimate partner physical violence reported in this study was higher than rates reported by women in rural district, Butajira- in south central Ethiopia (lifetime 54.6% versus 49% and in the past year 41% versus 29%) (5). However the prevalence of life time and 12 months sexual

violence was lower than that reported from women in Butajira (lifetime 49.8% vs 59% and past year 37.3% vs 44%).

In our study, 127 (38.6%) of the women were suffered from all three types of abuse (psychological, physical and sexual). This high prevalence and overlap of different types, severity and frequency of violence is of particular concern, given previous studies linked IPV to different health outcomes, both in short term and long term. Many studies documented that those women who experienced violence faced ill health more frequently than women with out such histories with regard to physical functioning, psychological well being like depression, suicidal attempts, and gynecological disorders, infertility, pelvic inflammatory disease, and unwanted pregnancy, unsafe abortion, miscarriage, still birth, premature labor and birth, fetal injury and low birth weight (4). We also observed that most of the women who experienced violence were still living with the abusive partners in an atmosphere of terror, treats and frequent physical and sexual abuse.

Even though, childhood sexual abuse is commonly unreported or known to be difficult to achieve openness from respondents (4), we identified high prevalence of childhood abuse (29.7%) and 10.9% of women were either raped or forced at their first sex before age of 15. This finding is higher than the prevalence rates reported from a community survey in Ethiopia (7% prevalence) (5), and comparable to the prevalence rates reported from a study conducted in Debark, North West Ethiopia (6), where the prevalence of performed and attempted rape were 8.8% and 11.5%, respectively. But, our finding was lower than the prevalence observed

among street adolescents in Addis Ababa city (15% prevalence within three months), (7) and comparable to the prevalence rates reported in other countries (4, 9).

About 153(21.8%) study participants reported as they were physically forced or raped at their first intercourse. Overall, 266(39.3%) women reported that their first sex was forced, coerced, unwanted, or unexpected. This result is comparable with studies done in Cameron (37.3%) Peru (40%), and with nine Caribbean countries (47%) (4). Although, no significant association found between forced first intercourse and women seropositive status, these results can not be considered definitive since reported frequency of such types of violence was low. However, the reported high prevalence of forced first sex is of particular concern, since it is known to affect the biological transmission of HIV and to lead to early pregnancy, affect sexual life course and longer the risk and exposure to HIV(9). This finding has important implication for HIV prevention, as it indicated the possibility that violence or coercion limit a young girls ability to chose when to be sexually active and implement 'abstinence' as a means of HIV prevention and condom use (since it is less likely to use condom at such incidents) (9).

While the evidence is not conclusive, some studies suggested that women in violent relationship do not usually discus or request condom use. Our finding contradicts this hypothesis, but support findings reported less condom use by women in abusive relationship (9, 13, 19, and 21). In our study, women reported intimate partner violence were more likely to request partners to use condom, though, the request refused by partners. Those women who reported IPV also perceived their partner risk behavior or reported that their partners have had extra marital or extra-relational sex with other women while they were in relationship. From

these women who reported IPV, 255 (44.3%) women mentioned refusal of sex as one of reasons for intimate partner violence. A plausible explanation is that women who perceive their male partner to be at significant risk of HIV infection may be reluctant to engage in sexual relations with this partner or request condom use; this resistance may be met, in turn, with physical violence or coercion into sex by the male partner (15). Overall, this study provide evidence that, condom use, women's refusal to sex perceived risky was affected by violence, and they were not in a position to demand and implement mutual monogamous relationship as a means of HIV protection (9) .

During the pre test counseling from women currently married or living with a partner or women in a regular partnership, 145 (26.7%) were either refused or were not sure to disclose their serostatus. Moreover these women were significantly more likely to report intimate partner violence and to have positive test result. This is a source of concern since disclosure of HIV status is considered to be important for protecting sero-negative partner and for ensuring that HIV positive individuals are able to access a range of services including prevention of mother to child transmission, anti-retroviral treatment, and psychosocial support. We also know that disclosure by HIV positive women to their sexual partners could enable couples to make informed reproductive health choices such as seeking family planning services to reduce unintended pregnancies or it could lead to changes in HIV risk behavior (9, 13, and 22).

In agreement with previous researches women experience of childhood sexual assault or forced first intercourse was associated with having multiple partner, casual partners, transactional sex, and life time use of alcohol or Khat (13,17). Even though, the cross sectional design limit us to establish temporality between early age experience of abuse and later

development of risk behavior, we expect that childhood abuse would have preceded alcohol or Khat use or sexual interactions with many partners. Therefore our data support the hypothesis of continuum of risk – that early abuse leads to increased risk behavior that may leads to HIV infection (17).

Our study did not show an association between childhood sexual abuse and HIV sero-positive status. However, childhood sexual assault or forced first intercourse, and adult sexual assault by non-partners were associated with intimate partner violence and intimate partner violence was associated increased number of male partners and women use of Khat. However, these risk behaviors (having multiple partners and use of Khat) were not associated with increased risk of HIV infection in our study participants. Taken together, the result suggests that increased risk behavior subsequent to experience of violence is not the key mechanism by which violence increases risk of HIV.

Perhaps, the only risk factor for our study participants to have HIV seropositive test result was alcohol use, but those women who reported use of alcohol were not at increased risk of partner violence. Even if alcohol use associated with increased risk of HIV infection in our study participants, this does not account for or explain the association between intimate partner violence and HIV infection. Previous studies suggested that although experience of violence may lead to risk behavior (or vice versa), and risk behavior to HIV infection, there is also the possibility that women in abusive relationship to be directly infected by their abusive partners, as some studies on men linked men's use of violence to their own sexual risk taking and to their own as well as their female partners risk of HIV (14). In our study participants,

accounting for women's risk behavior and other potential confounders, partner violence, partner's sexual risk behavior and alcohol use were associated with both women's risk of violence and women's risk of HIV infection.

Hence, the observed association between partner violent behavior, partner HIV risk behavior, and HIV infection, suggest that abusive partners were more likely to take sexual risk or practice risk behavior, and to have HIV. It seems that perpetration of intimate partner violence, as captured in this study, serves at least partially as a proxy indicator of HIV risk in men, since unprotected sex with a partner cannot result in HIV infection unless that partner is HIV positive Therefore, our study supported the hypothesis that women in relationship with violent male partners might be at increased risk to be directly infected with HIV by abusive partner or in other words abusive partners seems to have HIV and impose risky sexual practice on partners (13).The evidence with regard refusal to condom use also supports the hypothesis that abusive partners impose risky sexual practice on partners and constrain women's ability to implement safe sexual behavior. Further support comes from the finding that refusal of sex by the women was one of the most commonly cited reasons for IPV (cited by 280 (44.3%) women (table 5).).

Results from a previous studies which showed a strong association between perceptions of the partner's perceived HIV risks and sexual coercion, provide indirect support for this hypothesis (16). For example, in India, a study showed that men who had extramarital sex were six times more likely to report sexual abuse of their wives than men who remained faithful. Moreover, men who reported an STI were 2.5 times more likely to report abuse of wives than men who did not report an STI (14). The researchers concluded that abusive men were more likely to

engage in extramarital sex, acquire STI, and place their wives at higher risk for STI possibly through sexual abuse. In Cape Town, South Africa, men who reported use of sexual violence against intimate partners were nearly twice as likely to have multiple partners compared to those who did not use sexual violence. (14)

Finally, the reported high prevalence of forced sex or unwanted first sex indicated that violence limited women's ability to chose when to be sexually active and implement 'abstinence' as a means of HIV prevention. More over women in abusive relationship are not in a position to refuse unsafe sex, to negotiate condom use, demand and implement monogamous relationship as a means of HIV prevention and to get benefits from using VCT services and by disclosing test results. Overall, our research suggests that intimate partner violence play a very important role in women's risk of HIV infection and this study clearly shows the extent violence constrained women's ability to protect themselves from HIV infection.

Strengths and Limitations of the study

These results point towards the extent to which intimate partner violence and early childhood abuse, forced first intercourse are a realities in the lives of women, but several limitations must be noted. The direction of causal associations between childhood sexual abuse, forced first intercourse, adult sexual abuse by non intimate partner, risk behavior and acquisition of HIV infection is difficult to resolve with cross-sectional data.

The prevalence intimate partner violence may have been underestimated as a result of under–reporting of violence by respondents, given the culturally sensitive nature of this behavior and

the possible reluctance of many respondents to acknowledge its occurrence. However, several features of the study and the setting are likely to have increased reporting, including the close interaction and rapport between interviewers and respondents, the demonstrated expertise of interviewers in eliciting sensitive information and the known privacy and confidentiality of responses in institutions providing VCT services. We also relied on self reported data on participation in HIV risk behavior. However, since women were unaware of their serostatus at the time of the interview, we expect any under reporting to be non deferential, thus biasing our results towards rejecting our hypothesis. More importantly we assessed the risk behavior of current partner's from women and it is difficult to relay on such information, but most likely it could be under reporting.

We didn't collect data about attendants who were not sampled for interview and we can not determine how our study sample represents women attending VCT services in the city. Our primary tool for assessing the experience of intimate partner violence (IPV) was the WHO violence against women instrument, developed for a multi country study on women's health and domestic violence, which helps us to conduct standard assessment of violence and facilitate comparison with other studies. However, assessment of frequency of violence is based on women's' perception whether it was few times or many times, as well as relying on women memory. Despite these limitations, our results provided comprehensive information to date on the prevalence and nature of intimate partner violence among women attending VCT services in Addis Ababa City. Our results indicated the magnitude of the problem of intimate partner violence in Ethiopian urban setting and its overlap and interaction with HIV infection and prevention efforts.

8. CONCLUSIONS AND RECOMMENDATIONS

This study examined gender-based violence as a possible risk factor for HIV infection among women attending VCT services in Addis Ababa City. More than over half of the 743 women interviewed reported physical or sexual assault from intimate partners at some point during their lives, and more than one third of them had experienced such violence in the past 12 months.

Broad lifetime experience of intimate partner violence in life time as well as in the past 12 months associated with significantly increased odds of HIV seropositivity, even after adjustment for risk behaviors known to increase women risk to experience violence from intimate partners. Women who reported child sexual assault, forced first intercourse or adult sexual assault by non-partners also reported higher levels of risk behavior than those who not, but were not at increased risk of being HIV seropositive. Taken together, results strongly suggest that increased risk behavior subsequent to experience of violence is not the key mechanism by which violence increases risk of HIV. Our data support the hypothesis that women in abusive are likely to be directly infected by male partners, and that child sexual assault and forced first intercourse seem increase HIV primarily through increasing the risk of partner violence.

Identifying women who experience violence, providing support and considering implications of these experiences for their health is seem very important for the health service. This study also showed that women currently in violent relationship were significantly have no intention to

disclose their test results to their partners, possibly due to fear of violence. This suggest the need to develop culturally appropriate screening instrument and VCT services need to consider women experience of violence in order to provide appropriate counseling services.

Therefore we recommend developing culturally appropriate screening instrument and introducing in to VCT services and further research need to be undertaken to monitor its introduction and assess the benefits for women. Research also needed on women experience of first sex, men's violent behavior and sexual risk taking behavior, condom refusal. Most importantly, our findings point to the need for intervention efforts in HIV prevention that target male sexual risk taking, condom refusal, and violent behavior, as well working towards broader community and societal level transformations to challenge cultures of violence and male dominant norms of power relations.

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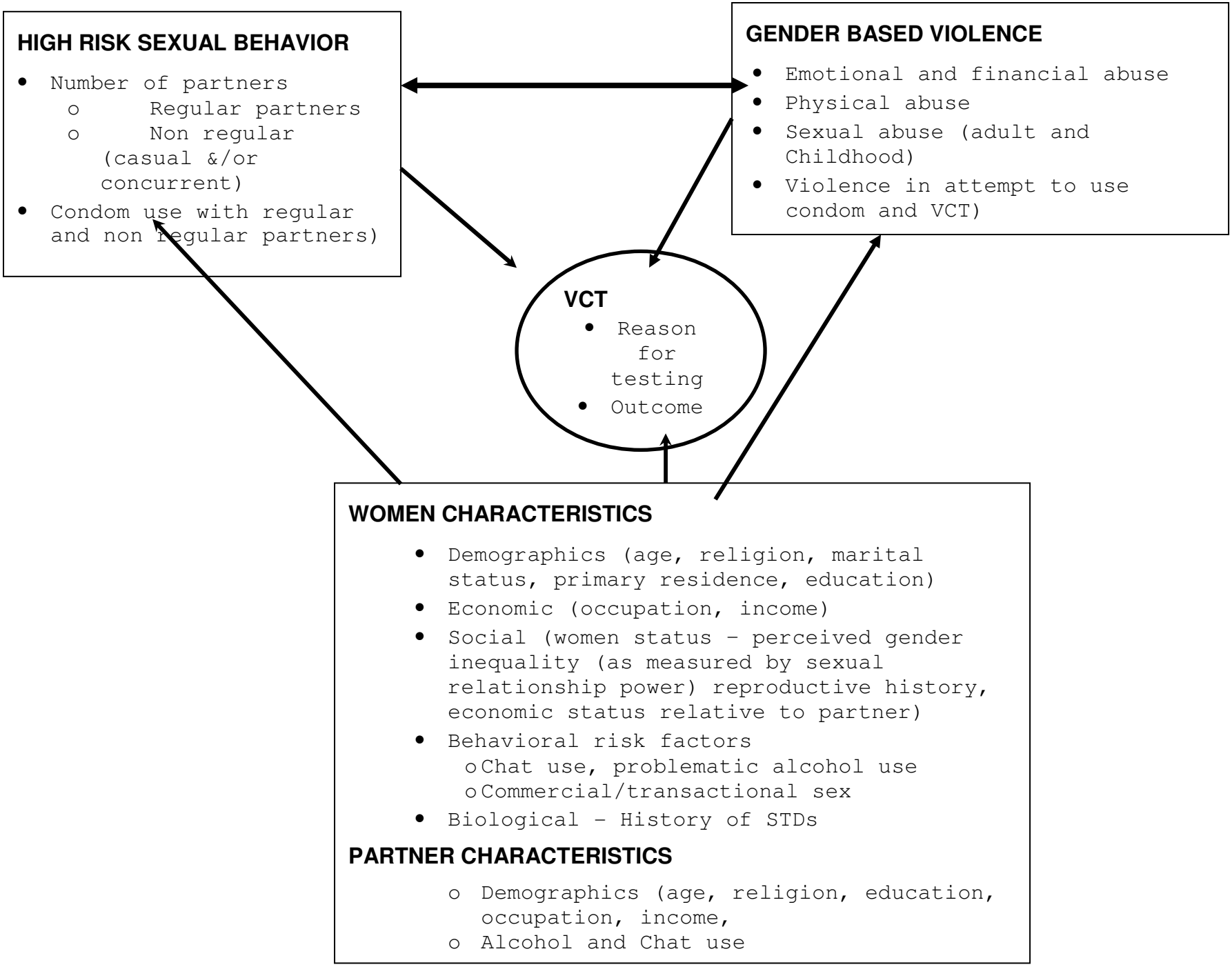
HIGH RISK SEXUAL BEHAVIOR
• Number of partners
o Regular partners
o Non regular (casual &/or concurrent)
• Condom use with regular and non regular partners)
GENDER BASED VIOLENCE
• Emotional and financial abuse
• Physical abuse
• Sexual abuse (adult and Childhood)
• Violence in attempt to use condom and VCT)
VCT
• Reason for testing
• Outcome
WOMEN CHARACTERISTICS
• Demographics (age, religion, marital status, primary residence, education)
• Economic (occupation, income)
• Social (women status – perceived gender inequality (as measured by sexual relationship power) reproductive history, economic status relative to partner)
• Behavioral risk factors
o Chat use, problematic alcohol use
o Commercial/transactional sex
• Biological – History of STDs
PARTNER CHARACTERISTICS
o Demographics (age, religion, education, occupation, income,
o Alcohol and Chat use