ADDIS ABABA UNIVERSITY
FACULTY OF MEDICINE
SCHOOL OF PUBLIC HEALTH

RISKY SEXUAL PRACTICE AND FACTORS RELATED AMONG PEOPLE LIVING WITH HIV/AIDS ATTENDING ART IN ADDIS ABABA PUBLIC HOSPITALS

BY:

YADETA DESSIE (BSc)

ADVISOR:

GAIL DAVEY (MBBChir, MSc, MD)

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER IN PUBLIC HEALTH

JUNE 2009

ADDIS ABABA, ETHIOPIA

ACKNOWLEDGEMENTS

My heartfelt thanks goes to Dr. Gail Davey who has been advising, supporting, me from the inception to culmination of this thesis work.

I am indeed grateful to the Ethiopian Public Health Association (EPHA) for funding this research.

I am also very much thankful to the supervisors and data collectors for their effective undertaking throughout data collection and to all my study participants, as without them the study would not be possible.

My acknowledgement also goes to Addis Ababa University, School of Public Health, and Addis Ababa Health Bureau Ethical Clearance Committee for their valuable supports in the research process.

Last but not the least, my appreciation extends to all my collogues, those who have been with me directly and indirectly in all the work of my thesis.

TABLE OF CONTENTS

Titles
Pages

ACKNOWLEDGEMENS ii
TABLE OF CONTENTS iii
List of tables and figures v
ACRONYMS iv
ABSTRUCT iii
1. INTRODUCTION 1
2. REVIEW OF RELATED LITRATURE 3
3. OBJECTIVES 12
3.1. General Objective 12
3.2. Specific Objectives 12
4. METHODS AND MATERIALS 13
4.1. Study Design 13
4.2. Study Area 13
4.3. Source and Study Populations 13
4.3.1 Source Population 13
4.3.2. Study Population 13
4.4. Sample Size Calculation 14
4.3.1. Quantitative Sample Size 14
4.3.2. Qualitative Sample Size 14
4.5. Sampling Procedure 14
4.5.1. Quantitative 14
4.5.2. Qualitative 15
4.6. Data Collection Instrument 15
4.7. Data Collection 15

4.7.1. Data Collector 15
4.7.2. Quality Control 15
4.8. Inclusion and Exclusion Criteria 16
4.8.1. Inclusion Criteria 16
4.8.2. Exclusion Criteria 17
4.9. Variables 17
4.9.1. Dependent Variables 17
4.9.2. Independent Variables 17
4.10. Data processing and analysis 20
4.11. Ethical Consideration 20
4.12. Operational Definition 21
4.13. Data Dissemination 22
5. RESULTS 23
5.1. Finding from Quantitative Study 23
5.2. Finding from Qualitative study 41
6. DISCUSSION 48
7. STRENGHTS AND LIMITATIONS 53
8. CONCLUSIONS 54
9. RECOMMENDATIONS 55
10. REFERENCES 56
11. ANNEXES 61
Annex 1. Conceptual Frame Work 61
Annex 2. Schematic Presentation of Proportional Sample Allocation from the Hospitals 62
Annex 3. Information sheet and consent Form (English Version) 63
Annex 4. Information Sheet and Consent Form (Amharic Version) 65
Annex 5. Survey Questionnaire (English and Amharic Version 67
Annex 6. Guide for the In-depth Interview 83

LIST OF TABLES

Table 1. Socio-demographic characteristics of the respondents ART in Addis Ababa public hospitals, 2009……..……24

Table 2. Sexual behavior of the respondents on ART in Addis Ababa public hospitals, 2009……26

Table 3.Socio-demographic characteristics and unprotected sex among the respondents on ART in Addis Ababa public hospitals, 2009…….....31

Table 4. Relationship factors and unprotected sex among the respondents on ART in Addis Ababa public hospitals, 2009…….....33

Table 5. Medical related factor, safer sex beliefs and unprotected sex among the respondents on ART in Addis Ababa public hospitals, 2009…….....35

Table 6. Psychosocial and behavioral correlates of unprotected sex among the respondents on ART in Addis Ababa public hospitals, 2009…….....37

Table 7. Multivariate explanatory variables with unprotected sex among ART attendants in Addis Ababa public hospitals, 2009…….....39-40

LIST OF FIGURES

Fig 1.Condom utilization before testing HIV positive and three months prior to the study period among respondents ART in Addis Ababa public hospitals,2009…….....27

Fig 2. Reasons mentioned for not using a condom among ART attendants in Addis Ababa public hospitals, 2009 ……28

ACRONYMS

AIDS	Acquired Immune Deficiency Syndromes
AOR	Adjusted Odds Ratio
ART	Antiretroviral Therapy
ARV	Antiretroviral
COR	Crude Odds Ratio
CI	Confidence Interval
HAART	Highly Active Antiretroviral Treatment
HIV	Human Immune Deficiency Virus
OR	Odds Ratio
PMTCT	Prevention of Maternal To Child Transmission
PLWHA	People Living With HIV/AIDS
SD	Standard Deviation
SNNP	Southern Nation Nationality People
STI (D)	Sexually Transmitted Infection (Disease)

ABSRACT

Background: The sexual behavior of HIV infected people has received little serious attention for a range of factors. Even though many of them avoid risky sexual behavior, a substantial number continue to engage in risky sexual practices that not only transmit the virus to others but also place themselves at risk of contracting secondary infection.

Objective: This study aimed to assess risky sexual practice and factors related among people living with HIV/AIDS (PLWHA) attending ART in Addis Ababa public hospitals

Methods: A cross-sectional quantitative study supplemented with a qualitative study was conducted among ART attendants in Addis Ababa public hospitals from February to March, 2009.

Results: The majority of the respondents were using condoms consistently; however, significant proportion (36.9%) had a history of unprotected sex in the three months prior to the study period. The major reasons given for not using condoms were partner's dislike of them, both partners being positive for HIV and need to have a child. Discussion about condom use and safe sex (AOR=7.23,95% CI: 4.14, 12.63), negative safer sex pleasure (AOR=2.39, 95% CI: 1.52, 3.76), multiple partnerships (AOR=2.67,95% CI:1.09, 6.57), negative partner serostatus (AOR=0.33, 95% CI:0.14,0.80), unknown partner serostatus (AOR=0.19 CI 95% CI: 0.09,0.39) and self-efficacy to use condom (AOR =3.29, 95% CI: 2.07, 5.23) are factors associated with unprotected sex.

Conclusion and Recommendation: Even if majority of ART attendants used condoms consistently, still considerable number engaged in unprotected sex with HIV positive, negative or unknown serostatus partner. This would have negative

effect in terms of reinfection with a new strain, other sexually transmitted infections and further transmission of the virus. So, interventions targeted to those factors related with unprotected sex practice were recommended to be addressed through counseling, teaching, encouragements and other possible approaches.

1. INTRODUCTION

Ethiopia is one of the Sub-Saharan countries which is worst affected by the HIV/AIDS pandemic. According to Ministry Of Health (2007) report, it was estimated that 977,394 people live with HIV resulting in 71,902 HIV related deaths. The national adult HIV prevalence was 2.1% and a total of 125,528 people are newly infected with HIV every year (1,2).The most common mode of transmission of HIV is through unprotected sex with infected, which contribute about 88% route of HIV transmission (3,4).

Until recently, the focus of HIV prevention effort worldwide was largely on people uninfected with HIV and for a long time, the sexual behavior of HIV-infected persons did not receive any serious attention for a variety of reasons. Initially, diagnosis of HIV-infection appeared to imply a death sentence. In this context, the sex life of those infected seemed a secondary issue making prevention focused on sexual behavior hard to imagine. Furthermore, the conviction that stigmatization should be avoided also precluded an interest in the sexual behavior of HIV-infected persons (5, 6).

Although many HIV-infected individuals avoid risky behaviors, substantial numbers of HIV-infected persons continue to engage in HIV transmission-risk behaviors and that lead them also to acquire re-infection by HIV of resistant strains to ARV drugs or acquiring other STD's which fasters AIDS progression (7,8)

A review of studies on sexual risk behavior among PLWHA by Crepaz and his colleagues showed that a considerable percentage, between 10 and 60 percent, depending on the specific sex act of seropositive individuals continue to engage in unprotected sexual behaviors that place their partners at risk for infection and place themselves at risk for contracting secondary infections (9). As more and more people with HIV live longer and healthier lives because of antiretroviral therapy, an increasing number of sexual transmissions of HIV may stem from those who know they are infected and engage in unprotected sex (10).

Antiretroviral therapy and sexual risk behaviors may be linked through several mechanisms. First, HIV-positive individuals who derive therapeutic benefit from HAART may attain improved quality of life and functional status with the alleviation of physiological, social, and psychological consequences of HIV disease. These gains may be accompanied by increases in sexual risk behaviors among individuals whose illness had previously inhibited those behaviors. Second, individuals may hold unrealistic beliefs about the impact of antiretroviral therapy on disease transmission rates, and thus may perceive the consequences of transmitting HIV as being less serious than in the past (7) and it is noteworthy that HIV infected patients who receive ART and who engage in HIV transmission risk behavior may harbor and spread drug resistant HIV which add considerable public treat (11).

In similar way, with the rollout of antiretroviral therapy in Ethiopia, where about 125,631 people are on antiretroviral treatment (12) and has potential to prolong the lives of HIV-infected individuals, it is exceedingly important to understand the factors promoting risky sex among the HIV positive person, so that behavioral intervention can be designed optimally for them in order to curb secondary HIV transmission and potential re-infection with different or drug resistant

strain of HIV. In few of previous studies in the country, which was focused on fertility preference, high risk sexual behavior and disclosure status, there were descriptions of the rate of risky sexual behavior among people living with HIV/AIDS. The current study tried to assess factors related to risky sexual practice besides the description of the prevalence rate of risky sexual practice among sexually active people living with HIV/AIDS those who are attending ART in Addis Ababa public hospitals.

2. REVIEW OF RELATED LITERATURE

2.1. Sexual behavior of people living with HIV/AIDS

More than 80% of the worlds HIV infected patients reside in Sub-Saharan Africa. The infectious pool is enormous and the potential for further transmission of HIV arising from the sexual behavior of those who already know their status cannot be overlooked (13)**.** Research has shown that many people who learn that they are infected with HIV alter their behaviors to reduce their risk of transmitting the virus (14,15). However, there are still men and women living with HIV/AIDS who experience difficulty maintaining safe sex practices and who place partners and themselves at considerable risk of sexually transmitted infections. Studies suggested that as many as one in three people living with HIV/AIDS engage in unprotected intercourse subsequent to knowing that they have HIV (7, 16).

A study conducted in South Africa among people living with HIV/AIDS in clinical care unit indicated that 30% reported one or more unprotected vaginal or anal sex events in the 3 months prior to the study with 27 different partners of which 39% of unprotected sex events were with partners perceived to be HIV negative or HIV status unknown and 5.6% sexually active participants reported having more than one sexual partner (17). Another study in the same country showed that, among 413 HIV-positive men and 641 HIV-positive women demonstrated that 90% of men and 81% of women reported being sexually active in the 3 months prior to the study and for the entire sample, 40% of men and 18% of women had two or more sex partners during that time (18). In a retrospective, cross-sectional study of HIV transmission risk behavior and HIV drug resistance data of 333 HIV-positive patients, 75 (23%) had unprotected sex during

the 3 months prior to the study, resulting in 1126 unprotected sexual events with 191 partners of whom 155 were believed by patients to be HIV-negative or of unknown status (19).

A study on sexual risk behaviors in a group of HIV-positive patients treated at public hospital HIV clinics in Santiago, Dominican Republic revealed that, among 129 participants, most patients (72.4%) had been sexually active since their HIV diagnosis. 72.8% of sexually active patients used condoms more frequently, 21.7% used condoms with the same frequency and 5.4% used condoms less often following their diagnosis of HIV (20). Findings from a study conducted in Jimma specialized hospital, Ethiopia, among 705 sexually active people living with HIV/AIDS in the last three months study period indicated that, 169 (24%) of the HIV-positive sample reported having unprotected sex (not using a condom) during their most recent sexual intercourse. Sixteen of the unprotected sex events (9.4%) were with partners perceived to be HIV-negative and 65 (38.5%) with partners unknown HIV status (21).

2.2. Socio-demographic characteristics and unprotected sex

Socio-demographic variables do not always explain variations in sexual behavior. A study in South Africa showed no effects of sex, ethnicity, socioeconomic status, education level, employment status on levels of risk behavior (17). These findings were not supplemented by research done in United States among heterosexual males neither where age, educational level, income nor duration test were significantly associated with unprotected sexual practice (22).

2.3. Partner related conditions, disclosure and unprotected sex

The results of a study conducted in Botswana indicated that among the 247 participants who had one sex partner in the 3 months before the study time, 168 (68%) identified that person as a steady/regular sex partner and 79 (32%) identified the person as a non-steady/casual partner. For the 62 participants with multiple sex partners, 66 of their 140 total partners (47%) were identified as steady/regular and the remaining 74 (53%) were identified as non-steady partners. Participants with one sex partner and those who had multiple sex partners did not differ in their unprotected intercourse in 3 months before the study time. For both groups, more than 80% of intercourse occasions were protected by condoms. However, groups differed significantly in their consistent use of condoms, with consistent condom use significantly more likely with steady partners of participants with only one partner than with steady partners of participants with multiple partners (23) and a study conducted among people living with HIV/AIDS in the United States on unprotected sex indicated that being with HIV-positive steady partner was significantly associated with unprotected sex (24).

The study from Santiago, Dominican Republic, found that sexually active patients who believed that their partner did not have HIV were much more likely to report using a condom at their last sexual encounter than those who did not know their partner's HIV status. They reported using condoms more frequently following their HIV diagnosis and were more likely to use a condom if they believed their partner did not have HIV (20). Finding from South Africa showed that both women and men who had not disclosed their HIV status to their partner were over twice as likely to have had unprotected sex in the last time they had sex, after controlling for the time since last

sexual encounter, partner type, HIV status of the partner and socio demographic characteristics (11).

Another study on disclosure of HIV status to sex partners and sexual risk behaviors among HIV-positive men and women who are sexually active in the three months prior to the study revealed that most of the participants had HIV-positive partners. However, 50% of men and 32% of women reported having HIV-negative partners, and 39% of both men and women had sex partners whose HIV status they did not know. Of the 903 participants who were currently sexually active, 378 (42%) indicated that they had had sex with a person they had not disclosed their HIV status to in the 3 months prior to the study. The study found a close association between not having disclosed HIV status to sex partners, unknown HIV status partner and engaging in practices with high risk of HIV transmission (18). In addition to this, other research has indicated that compared with those who used condoms; participants who did not use condoms were significantly less likely to know their partner's HIV status (20).

On the other hand, it is stated that disclosure by itself may be insufficient because it is a rather general type of communication that, by itself, does not focus specifically on a target behavior (i.e. safer sex). Instead, the most important aspect of interpersonal communication related to prevention of HIV transmission may be whether sex partners have explicitly discussed the issue of safer sex and reached agreement about it. Disclosure of one’s seropositive status was not significantly associated with safer sex. However, disclosure along with discussing types of sexual activity that would be safe, agreements can be reached about safer sex (25). Another study supported the idea that there was no association between disclosure and unprotected sex and

there were no significant differences in levels of unprotected sex by partner type or serostatus (22).

2.4. Barriers reported for not using condoms among HIV infected individuals

In the study conducted in Jimma, the most common reason for not using a condom was my partner is also HIV-positive (59, 40.7%) others mentioned, it makes my partner suspicious (29,20%), condoms take away the romance in sex (26, 17.9%), it is difficult to discuss using condoms (9, 6.2%), I did not have any with me (7, 4.8%),we do not want to use them (7, 4.8%), my partner refused to use one (5, 3.4%) (21).

In the study from the Dominican Republic; the most common reasons for not using condoms were that the sexual partner did not want to use a condom (61.0%), both participant and partner already had HIV (52.5%), that sex did not feel the same with a condom (47.5%), that a condom was not available (28.8%), the respondent was embarrassed to ask partner to use a condom, was scared their partner would leave if asked to use a condom (15.3%), that they wanted to have a baby (10.2%), and that they did not know condoms could reduce the risk of transmission (5.1%). Males were significantly more likely than females to say that they would not use condoms because sex doesn't feel the same with condom (70.0% and 35.9%), while females were significantly more likely than males to say they don't use a condom because their partner didn't want to use a condom (71.8% and 40.0%,) (20).

2.5. Psycho-social factors and unprotected sex

A study conducted in Croatia showed that alcohol use before sex was reported by 36 (23%) men in the previous six months, but only 6 (16%) reported use in greater than 50% of encounters. Six (17%) women reported alcohol use before sex and none reported use in greater 50% of encounters. Thirty percent of men reported illegal drug use before sex but only 3% of them reported it more than 50% of the time; none of the woman reported this behavior (5).

In a study on reproductive health needs of 454 PLWHA in Southern Nations Nationalities and Peoples, 53 of 454 of respondents (11.7%) reported that they consumed alcohol during the course of ARV treatment. Of these, 47.2%, had used it on a daily basis, and 28 (52.8%) had used it once in two weeks. Thirty two (7%) of the study subjects also reported that they use other substances like *khat, shisha* and smoking during the course of ARV treatment. Among those users the commonly used substances were cigarettes (84.45%), *Khat* (43.8%) and *shisha* (6.3%) and multivariate analysis revealed that those who reported alcohol use were found to have a six fold increased odds of practicing current risky sexual behavior compared to non-users (26). In the Dominican Republic, among 59 respondents who practiced unprotected intercourse, 6 (10.2%) of them were due to drink and didn't think of condom use (20).

There is also growing evidence that stigma and discrimination contribute to risky behaviours in HIV positive as that HIV negative individuals. Study from France based on a large representative sample of PLWHA shows that perceived stigma is associated with risky health behaviours such as unprotected sex (27). Another finding from the same country reported that discrimination from one's closest friends and relatives was an independent factor associated with non-systematic use of condoms (28). Supporting these evidences, study conducted in Jimma found

that, patients who perceive HIV as a highly stigmatizing disease were less likely to use a condom (21).

2.6. Medical and Behavioral correlates and unprotected sex

A range of studies have examined CD4 cell level and symptomatic status in relation to sexual risk behavior, but findings were very mixed. One study found that having an undetectable viral load was associated with increased unprotected sex (29), and another study found that a higher CD4 cell count was associated with increased sexual risk behavior (30). A similarly inconsistent picture emerged for symptomatic status, number of HIV illness symptoms, and length of time since testing seropositive. Different studies have examined whether beliefs about combination therapy are associated with unprotected sexual behavior. One found that having reduced concerns about engaging in unsafe sex because of the availability of combination therapy was significantly associated with risky sexual behavior (31). However, another study on heterosexual serodiscordant couples did not find support for such an association (32).

Comparisons for sexual behaviors and controlling for years lived with HIV, sex, and sexual orientation indicated that people who had missed their antiretroviral medications were significantly more likely to have engaged in unprotected anal or vaginal intercourse in the past 3 months prior to the study. People who had missed their medications also reported more sex partners, greater rates of unprotected vaginal intercourse, and proportionally less protected sex than people who had adhered to their medications (33)

A study on the correlates of unprotected sex among heterosexual males found that there were positive associations with CD4 count, and negative attitudes towards the pleasure and

effectiveness (22). Related to safer sex pleasure another among HIV-infected women indicated that, those who believed that condoms decreased their sexual pleasure had odds of consistent condom use only 0.33 as high as women expressing more favorable attitudes (34).

3. OBJECTIVES

3.1. General Objective

To assess risky sexual practice and related factors among people living with HIV/AIDS, those who are on ART in Addis Ababa public hospitals

3.2. Specific Objectives

1. To measure the prevalence of risky sexual practice among ART attenders
2. To describe socio-demographic factors related with risky sexual practice among ART attenders
3. To identify partner relationship factors related with risky sexual practice among ART attenders
4. To assess medical, psycho-social and behavioral correlates of risky sexual practice among ART attenders

4. METHODS AND MATERIALS

4.1. Study Design

A cross sectional quantitative study supplemented by a qualitative study was conducted among people living with HIV/AIDS, who were taking ARV treatment in Addis Ababa public hospitals from February to March 2009.

4.2. Study Area

The study was conducted in Addis Ababa, the capital city of Ethiopia. The total population of the city was 3,059,000(1). According to the 2007 national report, the HIV prevalence in the city was 7.5% with a total of about 156,577 people living with HIV/AIDS, among whom 150,480 were adults and the rest were children (1).There were fifty three public and private ART providing health institutions as per November 2008 report, of which, nine were public hospitals and twenty three public health centers and four public clinics. Overall, about 35,207 people living with HIV/AIDS were on antiretroviral drug treatments in Addis Ababa (12).

4.3. Source and Study Population

4.3.1. Source Population

The source population were adults living with HIV/AIDS, whom were on ART and visited the targetd hospitals ‘ART unit’ during the study period.

4.3.2. Study population

The study population was clients who had been on ART and at least three months since knowing their own HIV status and who had made a minimum of two visits (including the current episode)

for follow up care and treatment for HIV/AIDS, and who were sexually active in the three months prior to the study period.

4.4. Sample Size Calculation

4.4.1 Quantitative Sample Size

The Sample size for the study was determined by the following formula; with 95% Confidence Interval (CI), 0.04 Marginal Errors and an assumption of 50% unprotected sex practice.

$$n=\frac{z^2 x\ p(1-p)}{d^2}$$

$$n=\frac{1.96^2 x\ (0.5x0.5)}{(0.04)^2}=601$$

Assumptions;

n = calculated sample size

z=standard score corresponding to 95% CI

p =assumed proportion of unprotected sex

d= marginal error

4.4.2. Qualitative Sample Size

For qualitative study, in-depth interviews were undertaken and continued to the point of information saturation.

4.5. Sampling Procedure

4.5.1. Quantitative Data

The study was conducted in Addis Ababa public hospitals. Seven of the nine hospitals (Black Lion hospital, Minilik II hospital, Ras Desta hospital, St Paul hospital, St. Peter hospital, Yekatit 12 hospital, Zewditu hospital) were included for the study while two of them were not considered one because its service is primarily PMTCT (12) and the other because ethical approval time lay out of the data collection period. The data were collected by proportional allocation to the number of clients on ART at each hospital. All clients on ART coming for

services and fulfilled the inclusion criteria were interviewed consecutively until the required sample size was obtained.

4.5.2. Qualitative Data

For the qualitative in-depth interview, purposive samples of 13 clients not approached for the quantitative study were interviewed. The interviews were conducted by nurse counselors together with principal investigator.

4.6. Data Collection Instrument

A structured questionnaire containing different components derived from a range of behavioral constructs and study results (9, 20, 22, 35-38) was used. The questionnaire addressed socio-demographic characteristics, sexual behavior, relationship factors, illness related factors, psychosocial factors, and behavioral factors hypothesized to have relation with risky sexual practice. The questionnaire was first prepared in English version, then translated to Amharic and then Amharic version translated back to English to check the consistency. For the qualitative study, semi-structured open-ended questions prepared on: sexual behaviors before testing positive, sexual desire, reasons for engaging in sexual risky practice, importance of using condoms after becoming seropositive, status disclosure to their current partner(s), and medication history were used.

4.7. Data Collection

4.7.1. Data Collectors

For data collection, counselors working at the ART unit in each hospital were used. The data collectors and supervisors were trained for one day on the methods, objectives, and other technical procedures of the study before the data collection were commenced. Two BSc supervisors were used to supervise the data collection process.

4.7.2. Quality Control

Pre-testing was conducted with 5% of the total sample size and the questions were checked for clarity, completeness, consistency, and questions which posed difficulty or unclear were rephrased and corrected. Some unnecessary questions were excluded and some missed questions were incorporated. The supervisors along with the principal investigator checked for completeness of collected questionnaire on daily basis during the data collection period.

4.8. Inclusion and Exclusion Criterias

4.8.1. Inclusion Criteria

People living with HIV/AIDS who have had at least two or more visits, minimum of three months since testing HIV positives serostatus, on ART treatment, sexually active in previous three months and 18 years of age and above were included in the study.

4.8.2. Exclusion Criteria

Patients who were: mentally ill, unable to communicate, seriously ill, had made less than two visits, had known their HIV status for less than three months, less than 18 years of age, or not on ART were excluded from the study.

4.9. Variables

4.9.1. Dependent variables

The dependent variable for the study is risky sexual practice: sexual encounter(s) with inconsistent or non-use of condoms in the three months prior to the study.

4.9.2. Independent Variables

Socio-demographic characteristics: age, sex, ethnicity, education, religion, marital status, occupation and income status.

Relationship factors: number of partners, type of partner, discussion about condom use and HIV, HIV status of partner and disclosure status.

Medical related factors and safer sex beliefs: duration of diagnosis of HIV, duration of start of ART, disease condition, CD4 count, safer sex belief being on ART, safer sex knowledge, attitude and effectiveness.

Psycho-social factors: stigma, active substance and alcohol use, and

Behavioral factors: self-efficacy to use condom, general social support and general self-efficacy.

Descriptions of the measurement scales used in the study

General self-efficacy questions: General self-efficacy questions were derived from the scale developed by Schwarzer and colleagues (35). These addresses how individual confident to him/her self coping up different problems. Four items were used and responses were made on four Likert scale: 1. strongly disagree, to 4 strongly agree and score above the mean was taken as high general self efficacy.

Condom use self-efficacy: Condom use self-efficacy measurements were derived from scale developed by Brien and colleagues (36) and five items were used for this study that addresses how patients are able to make their partner use condom, remember to use condom while drunk and ability to wear and remove condom. Responses were made on a five-point scale, ranging from 1 (strongly agree) to 5 (strongly disagree) and a value of 3 as don't know. Thus, the score below the mean indicate good self-efficacy to use condom.

General social support measurement: General social support provision scale derived from scale developed by Cutrona and colleagues (37). For the current study five items were used. The items addressees social support that the patient gets from other people. Responses were made on a four points Likert scale:1 disagrees strongly to 4 strongly agree. Score above the mean total sum was taken as high perceived general social support

Safer sex belief: Safer sex beliefs were assessed using a series of items ascertaining **safer sex knowledge and attitudes (concerning safer sex effectiveness, pleasure),** the scale derived from a study among people living with HIV/AIDS in the United States (23)

- **Safer sex knowledge:** Assessed by a four-items scale that addresses knowledge related to reinfection with other strain of virus and STD. Responses were made on a five-points scale, ranging from 1 (strongly agree) to 5 (strongly disagree) with a value of 3 as don't know. Thus, the value above the median (because it is skewed in distribution) score indicate negative safer sex knowledge.

- **Safer sex effectiveness:** Assessed by three items that address how condom effective in preventing HIV and STD**;** Responses were made on a five-point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree) and a value of 3 as don't know. Thus, the value above the mean computed from the respondents' scores was taken as negative safer sex effectiveness.

- **Safer sex pleasure on condom use:** Assessed by three items that address how condoms change sexual pleasure. Responses were made on a five-point scale, ranging from 1 (strongly agree) to 5 (strongly disagree) with a value of 3 as don't know. Thus, the value above the mean computed from the respondents' scores was taken as negative safer sex pleasure.

Stigma measurement: Assessed by nine questions addressing Enacted Stigma (stigmas encountered since testing positive related to avoidance, social rejection and shame) with Yes/No response and seven questions addressing Perceived Stigma (any felt stigmas related to avoidance, social rejection, and shame) with **Yes or No** responses derived from study on predictors of stigma among people living with HIV/AIDS (38). **Yes** was coded as (1) and **No** as

(0). Each respondent's score was summed and those score high above the mean were considered as stigmatized and felt stigmatization.

4.10. Data Processing and Analysis

The data were entered and analyzed with Statistical Package for Social Sciences (SPSS) Software Version 15.0. Descriptive analyses like percentages and frequency distributions were used in the form of tables and graphs. Bivariate and multivariate logistic regression models were explored to check crude and independent effect of the variables by using Odds Ratio (OR) with a 95% Confidence Interval (CI). P-Value less than 0.05 were taken as statistically significant. For qualitative study, after in-depth interview was undertaken, transcription, translation and descriptive summery was made by the principal investigator.

4.11. Ethical Consideration

Ethical approval was obtained from Institutional Review Board Office of Addis Ababa University, Faculty of Medicine. After approval was made, a formal letter of support was taken from the School of Public Health to Addis Ababa Health Bureau and to the hospitals. On receipt of the letter of support, Addis Ababa Health Bureau Ethical Committee approved the proposal and then wrote a letter of support to hospitals. At the time of data collection, the purpose of the study was clearly explained to the study subjects and they were also told that confidentiality would be kept strictly. The respondents were told that they had the right to be involved or not to

be involved in the study, and that non-involvement would not affect the services they provided with in the institutions.

4.12. Operational Definitions

Casual partner: Include those individuals with whom he/she had once or few times sexual intercourse, other than regular partners/steady partner (spouse/boy/girl friend) with paying or non-paying.

Consistent use of condom: Male condom use reported to be always.

Enacted stigma: Is expressed when a person discriminates against those living with HIV/AIDS (whether in thought or in action) and sees those people as very different from himself.

Multiple partners: Having two or more sexual partner.

Perceived stigma: Is expressed when a person either experiences or fears discrimination due to being or becoming HIV-positive.

Risky sexual practice: Inconsistent use of condom or no condom protected sex with HIV-negative, positive or unknown-status partners in the previous three months.

Safe sex: Sexual encounter with consistent use of condom in the previous three months.

Sexually active: Those who have a partner and had engaged in sexual intercourse in the previous three months

Sexual desire: Expression of drawing one sex toward another.

Steady partner (regular partner): Partner with whom the respondent had regular sexual relationship and perceived by the respondent as spouse or regular boy/girl friend.

Substance use: Using of substances (drugs and chemicals) for any reason other than medical purposes

4.13. Data Disseminations

- The research defended for the fulfillment Master of Public Health at Addis Ababa University School of Public Health.
- The research will be submitted for the funding organization, Ethiopian Public Health Association (EPHA)
- If deemed necessary it will be also presented on different scientific conferences and workshops

5. RESULTS

5.1. Findings from Quantitative Study

5.1.1. Socio-demographic Characteristics

A total of 601 respondents participated in the study. The majority of the respondents, 331 (55.1%), were females while 271 (44.9%) were males. The mean age of the total respondents was 33.4±6.5(SD), and a large percentage of the respondents, 348 (57.7%), lay in the age category of 26-35 years, whereas 205 (34.1%) were above 36 years and the rest were below 25 years.

In their ethnicity, 264 (43.9%) were Amhara, 163 (27.1%) were Oromo, 92 (15.3%) were Tigrie 77 (12.8%) were Guraghe and the rest were other ethnic groups. More than half, 324 (53.9%), had attended grades 7-12, while 125 (20.8%) had completed above grade12. Orthodox followers were about 419 (69.7%) followed by Muslim 98 (16.3%) and the rest were Protestant and Catholic attendants.

Regarding their marital status, 384 (63.9%) were married, 142 (23.6%) never married and the rest were divorced, separated or widowed. In respect to their employment status, over half, 331 (55.1%), were unemployed. For 180 (30.0%) respondents, the average monthly income lay below 500 Eth. Birr, while 22.2% had no income of their own. The full versions of socio-demographic variables information were displayed in Table 1.

Table 1: Socio-demographic characteristics of the respondents on ART in Addis Ababa public hospitals, 2009

5.1.2. Sexual behavior and partner's related characteristics

Characteristics	Frequency (N)	Percent (%)
Sex		
Male	270	44.9
Female	331	55.1
Total	601	100.0
Age		
≤25	48	8.1
26-35	348	57.7
≥36	205	34.1
Total	601	100.0
Ethnicity		
Amhara	264	43.9
Oromo	163	27.1
Tigre	92	15.3
Guraghe	77	12.8
Other	5	0.8
Total	601	100.0
Education status		
≤6	152	25.3
7-12	324	53.9
>12	125	20.8
Total	601	100.0
Marital status		
Married	384	63.9
Unmarried	142	23.6
Divorced	30	5.0
Separated	14	2.3
Widowed	31	5.2
Total	601	100.0
Employment status		
Employed	270	44.9
Not employed	331	55.1
Total	601	100.0
Income status		
Don't know	90	15.0
Have no own income	132	22.0
<=500	180	30.0
501-999	104	17.3
>1000	95	15.8
Total	601	100.0

Respondents were provided with questions about the number of sex partner(s) classified as either casual or steady; their partner's serostatus and pattern of condom use in the last three months (consistent, irregular (most of the time, some time, rarely/almost never) or did not use at all).

As displayed in Table 2, five hundred forty-one (90%) respondents reported a single partner and 60 (10%) reported as multiple partnerships. Of those who reported a single partnership, 488 (90.2%) of them were classified as steady and the rest 53 (10.8%) as casual. Among those reporting multiple partnerships, 36 were with casual partners and 19 were with a mix of both steady and casual partners. The majority, 492 (81.9%) of the respondents knew their partner's status while (17.5%) did not know and 4 (0.7%) of those with multiple partners reported both positive and unknown serostatus. Of those who knew their partner's status, 430 (87.5%) were seropositive partner(s) and 62 (12.5%) were seronegative partner.

Nearly two-thirds (63.1%) of all respondents used condoms in a consistent manner, while (15.1%) used them irregularly and 21.8% had never used a condom in the last three months. Overall, 222 (36.9%) had one or more sexual encounters without a condom and nearly one-third (29.6%) had not used a condom during their last sexual encounter. Among those who used a condom inconsistently or never, (77.0%) were with steady partner, (16.8%) with a casual partner and (6.3%) were with steady and/or casual partner(s). Again, among those using a condom inconsistently or never, (79.3%) had seropositive partners, (16.2%) partners of unknown serostatus and 4.1% seronegative partner.

Table 2. Sexual behavior of the respondents on ART in Addis Ababa public hospitals, 2009

Variables	Frequency	Percentage (%)
Condom use pattern in the last three months (N=601)		
Consistently used	379	63.1
Inconsistently used	91	15.1
Not used at all	131	21.8
Total	601	100.0
Number of partner(s) in last three months (N=601)		
Single	541	90.0
Multiple	60	10.0
Total	601	100.0
Type of partner for single (N=541)		
Steady	488	90.2
Casual	53	9.8
Total	541	100
Type of partners for multiple (N=60)		
Steady partners	5	8.3
Casual partners	36	56.7
Both	19	35.0
Total	60	100
Type of partner with whom unprotected sex engaged (N=222)		
Steady	171	77.0
Casual	37	16.2
Both	14	6.8
Total	222	100
Partner serostatus with whom unprotected sex engaged (N=222)		
Positive	176	79.3
Negative	9	4.1
Unknown	36	16.2
Unknown and positive	1	0.4
Total	222	100.0
Discussion about safe sex (N=601)		
Discussed	448	74.5
Not discussed/discussed partly	153	25.5
Total	601	100
Disclosure to partner (N=601)		
Disclosed	496	82.5
Not disclosed/disclosed partly	105	17.5
Total	601	100.0

Sexual behavior before testing positive

In respect to life sexual partnerships prior to testing positive, 293 (48.8%) responded they had one sexual partner, 162 (27.0%) two sexual partners and the rest 146 (24.3%) three or more partners. Before testing positive, 354 (58.9%) were married, 218 (36.3%) were unmarried, 30 (2.2%) were divorced, 10 (1.7%) widowed and the rest 6(1%) were separated.

In relation to their marriage before testing positive, most multiple sexual partnerships were among unmarried respondents (150), followed by those who were married (137) and the rest (21) were divorced, separated or widowed. With regards to condom utilization before testing positive, 0.8% reported as they used condoms in a consistent manner (always), while about 68.6% had never used a condom and the rest were irregular users.

When we see the condom utilization before testing positive in relation to three months prior to the study, the majority of them were reported more consistent usage of condoms (fig1)

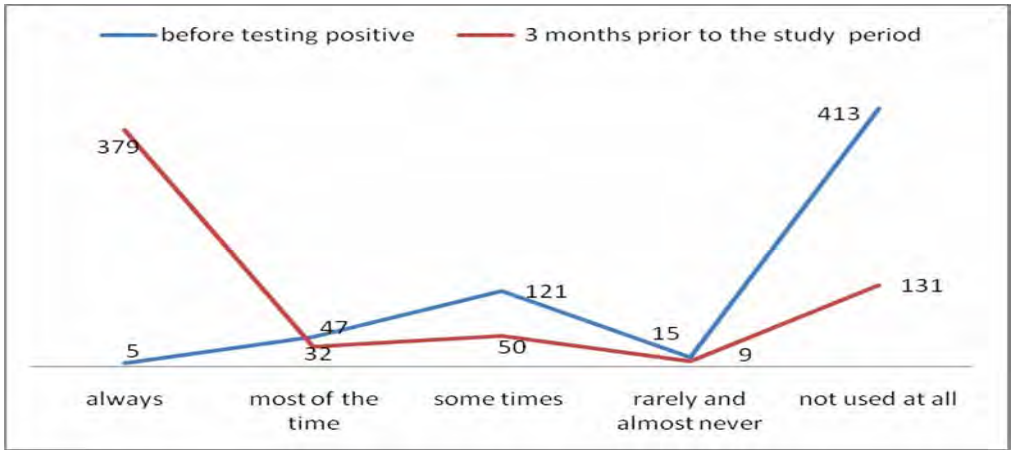


Fig 1.Condom utilization before testing HIV positive and three months prior to the study period among ART attendants in Addis Ababa public hospitals,2009

Reasons mentioned for not using condom during sexual encounter(s)

As depicted in Fig 2, the reasons for not using a condom during sexual encounters in the last three months with multiple responses possible includes: their partner did not want to use a condom 72 (25.1%), their partner was also HIV seropositive 70 (24.3%) and they wanted to have a child 52 (18.1%), sex doesn't feel the same with condom 26 (12.5%), didn't aware importance of condom in prevention of reinfection (positive partners) 20 (9.7%), was drunk and don't think condom use 12 (5.7%). Less common responses (one respondent each) were: because condom ruptured, her partner started ART treatment, because she was using other family planning and didn't want to use condom (fig 2).

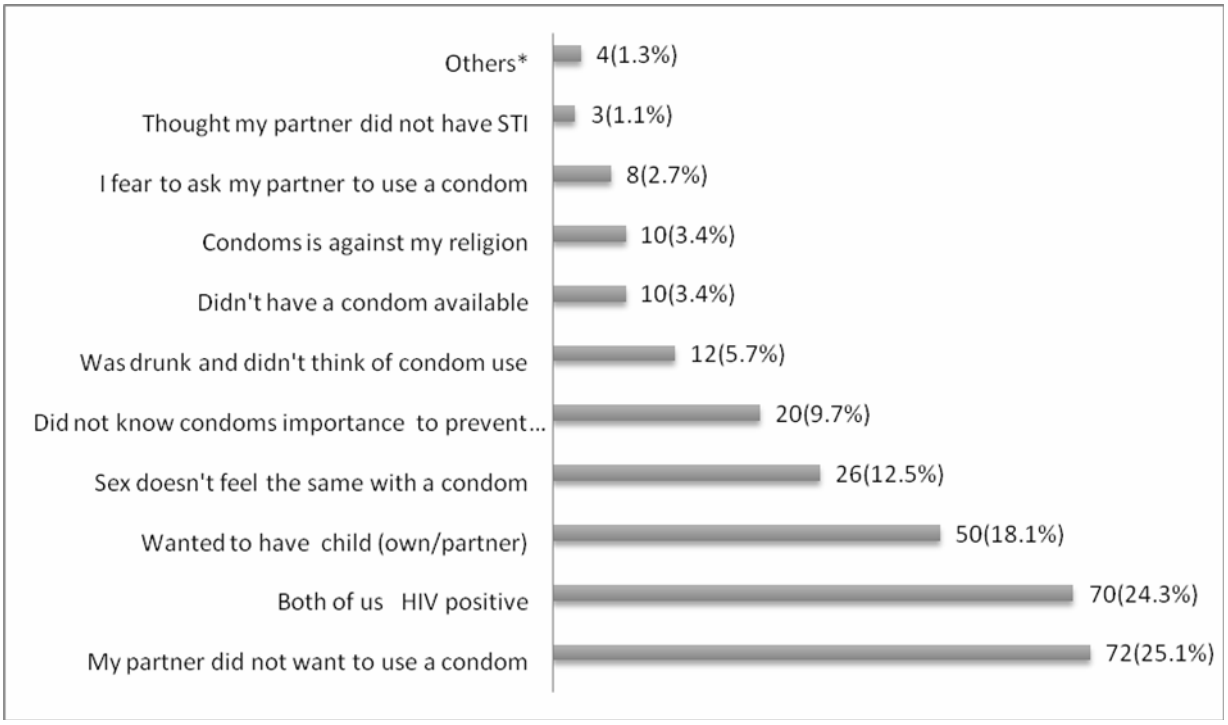


Fig 2. Reasons mentioned for not using condoms in the previous three months among respondents on ART in Addis Ababa (N=287), 2009

5.1.3. HIV diagnosis, treatment, and safer sex beliefs (knowledge, effectiveness and pleasure)

The majority of the study subjects (64.8%) had survived at least 24 months since testing positive, (18.3%) 12-24 months, and the rest were 12 months and less. With regard to ART medication, (38.9%) had started less than 12 months before, (37.1%) more than 24 months, and the rest were between 12 months and 24 months before.

Respondents were asked whether there 'is less concern to practice safe sex because of ART treatment' and about one fourth (23%) of them agreed and all the rest (except one who didn't respond) disagreed with the statement. Pertaining to their recent CD4 cell counts, almost three quarters (444 out of 489) had counts above 200 cells/mm^3 and the rest 200 cells /mm^3 or less. With regard to their disease condition at the time of interview, (32.8%) were symptomatic and (67.2%) of them were asymptomatic.

Scales for safer sex knowledge (Cronbach's Alpha= 0.67, median=8), safer-sex effectiveness (Cronbach's alpha= 0.88, mean=6.08) and safer sex pleasure (Cronbach's alpha=0.7, mean=8.5) showed that, (31.1%) had negative responses to safer sex knowledge, (28.3%) negative responses to safer sex effectiveness and (44.4%) negative responses to safer sex pleasure.

5.1.4. Psycho-social and behavioral characteristics

Based on the scales used for assessing condom use self-efficacy (Cronbach's Alpha= 0.7, mean= 12.05), general self-efficacy (Cronbach's Alpha=0.80, mean=12.33) and general social support (Cronbach's Alpha =0.79, mean=14.87); the majority of participants felt they have had self-efficacy in condom use (62.4%), have had general self-efficacy (61.1%) and had perceived social support (64.56%).

Provided with two categories of stigma questions addressing both enacted stigma since testing positive (Cronbach's Alpha=0.83, mean=1.4) and perceived stigma in the last three months prior to study (Cronbach's Alpha= 0.84, mean=2.85); about (30%) of the respondents had experienced a history of enacted stigma whereas about 49.1% had the perception of being stigmatized.

About one fifth of the respondents had a history of alcohol use in the last three months; the majority (68.9%) used two or fewer times per week and the rest three or more times. 7.2% had a history of substance use in week time and 40 used *khat* from which the majority (72.5%) used fewer than two times, 27 used cigarettes from which (44.5%) used three and above times, 6 used *hashish* and 9 used *shisha.*

5.1.5. Bivariate analysis of socio-demographic characteristics and unprotected sex

About (37.8%) of males and (36.3%) of females had unprotected sex in the previous three months of the study. Almost half (47.9%) of patients aged ≤25, and (40.5%) of those aged 36 and above had had unprotected sex. The odds of unprotected sex is (COR=0.54, 95% CI: 0.29, 0.99) for age 25-36 years and (COR=0.74, 95%CI: 0.39, 1.39) when compared with those age 25 years and before. Those who had attended grade 7-12 had an odds of (COR=0.65, 95% CI: 0.41, 0.97) as compared with those attended grade six and before.

Table 3. Socio-demographic characteristics and unprotected sex among respondents on ART in Addis Ababa public hospitals, 2009

Characteristics	Condom unprotected sex		COR(95%CI)
	No	Yes	
Sex			
Male	168 (62.2%)	102 (37.8%)	1.00
Female	211 (63.7%)	120 (36.3%)	0.94(0.67,1.31)
Age			
≤25	25 (52.1%)	23 (47.9%)	1.00
26-35	232 (67.0%)	116 (33.3%)	**0.54 (0.29,0.99)***
≥36	122 (59.6%)	83 (40.5%)	0.74 (0.39,1.39)
Education status			
≤6	86 (56.6%)	66 (43.4%)	1.00
7-12	216 (66.7%)	108 (33.3%)	**0.65 (0 .41,0.97)***
>12	77 (61.6%)	48 (38.4%)	0.81 (0.50,1.32)
Marital status			
Married	239 (62.2%)	145 (37.8%)	1.00
Unmarried	89 (62.7%)	53 (37.3%)	0 98 (0.66,1.46)
Divorced	19 (63.3%)	11 (36.7%)	0.95 (0.44,2.06)
Separated	11 (78.6%)	3 (21.4%)	0.45 (0.12,1.64)
Widowed	21 (67.7%)	10 (32.3%)	0.79 (0.36,1.71)
Employment status			
Employed	171 (63.3%)	99 (36.7%)	1.00
Not employed	208 (62.8%)	123 (37.2%)	1.02 (0.73,1.43)
Income status			
Have no income	89 (67.4%)	43 (32.6%)	0.87 (0.50,1.51)
Don't know	48 (53.3%)	42 (46.7%)	1.57 (0.87,2.83)
<=500	114 (63.3%)	66 (36.7%)	1.04 (0.62,1.74)
501-999	67 (64.4%)	37 (35.6%)	0.99 (0.55,1.77)
>=1000	61 (64.2%)	34 (35.8%)	1.00

*Statistically significant (P≤0.05)

5.1.6. Bivariate analysis of partner's related characteristics and unprotected sex

As depicted in Table 4, more than half (56.7%) of those with multiple partners had engaged in unprotected sex, compared to (34.8%) of those with a single partner, and the odds of unprotected sex among those with multiple partners was (COR=2.46, 95% CI: 1.43, 4.22) when compared to those with a single partner.

34.6% of those who use condom and 38.0% of those who did not use condom before testing positive had engaged in unprotected sex. The odds of engaging in unprotected sex among those not used at all was (COR =1.16, 95% CI: 0.81, 1.66) when compared with those who irregularly used.

With regards to type of current sexual partnership(s), those who had a mix of both casual and steady partners had a higher likelihood of unprotected sex than those with either casual partners or steady partners, and the odds of practicing unprotected sex was 4.7 times among those with a mix of partners than those who had steady partner (COR= 4.71, 95%CI: 1.79, 12.35).

In relation to discussions about safe sex and condom usage with corresponding partner(s), about one fourth did not discuss with their partner(s) and more than three fourths of those who did not discuss engaged in unprotected sex. The likelihood of engaging in unprotected sex was about ten fold greater for those who had no experience of discussion (COR= 9.65, 95%CI: 6.29, 14.32). Having an HIV positive partner exposed the respondents to have unprotected sex when compared with those negative serostatus partner (COR=0.25, 95% CI: 0.12, 0.56)

Table 4. Relationship characteristics and unprotected sex among respondents on ART in Addis Ababa public hospitals, 2009

Characteristics	Condom unprotected Sex		COR (95% CI)
	No	Yes	
Number Current partner(s)			
Single	353 (65.2%)	188 (34.8%)	1.00
Multiple	26 (43.3%)	34 (56.7%)	**2.46 (1.43,4.22)***
Life Partner before testing positive			
One	192 (65.5%)	101 (34.5%)	1.00
Two	107 (66.0%)	55 (34.0%)	0.98 (0.62,1.47)
Three and above	80 (54.8%)	66 (45.2%)	**1.57 (1.04,2.35)***
Condom use before testing positive			
Yes	123 (64.4%)	65 (34.6%)	1.00
No	256 (62.0%)	157 (38.0%)	1.16 (0.81,1.66)
Types of current partner(s)			
Steady partner	322 (65.3%)	171 (34.7%)	1.00
Casual partner	52 (58.4%)	37 (41.6%)	1.33 (0.84,2.12)
Both	5 (26.3%)	14 (73.7%)	**4.71 (1.79,12.4)***
Discussion about safe sex with sex partner(s) [b]			
Yes	341 (76.1%)	107 (23.9%)	1.00
No	38 (24.8%)	115 (75.2%)	**9.65 (6.30,14.77)***
Disclosure to sex partner/s[b]			.
Yes	319 (64.3%)	177 (35.7%)	1.00
No	60 (57.1%)	45 (42.9%)	1.35 (0.88,2.07)
Partner's HIV status			
Positive	255 (59.3%)	175 (40.7%)	1.00
Negative	53 (85.5%)	9 (14.5%)	**0.25 (0.12,0.56)***
Unknown	70 (66.7%)	35 (33.3%)	0.73 (0.47,1.14)

[b] Three partly discussed and Eight of those who partly disclosed were categorized under "No" for analysis. *Statistically significant ($p<0.05$)

5.1.7. Bivariate analysis of medical factors and safer sex belief (knowledge and attitude) in relation to unprotected sex

The study tried to see the relation between medical conditions, negative safer sex beliefs (knowledge and attitude) and unprotected sex. As presented in Table 5, duration since testing positive categorized as 12 months and less**,** between 12 and 24 months and above 24 months didn't attain significance in bivariate analysis. Similarly, duration since start of ART did not show statistical difference for engagement in unprotected sex. Pertaining to the CD4 cell count, those who had CD4 count above 200 cells/mm^3 had an odds of (COR=1.43, 95% CI: 0.96, 2.14) when compared with those 200 cells/mm^3 and less CD4 count.

Negative safer sex knowledge, effectiveness and pleasure in relation to unprotected sex indicated statistical differences when compared with those who were not having of negative safer sex knowledge, effectiveness and pleasure in bivariate logistic regression. Those who had negative safer sex knowledge, safer sex effectiveness and safer sex pleasure had (COR=2.66, 95% CI: 1.86, 3.80), (COR=2.15, 95% CI: 1.49, 3.08) and (COR=3.6, 95% CI: 2.55, 5.11**)** times the likelihood of engaging in unprotected sex than those who had positive safer sex knowledge, safer sex effectiveness and safer sex pleasure respectively.

Table 5. Medical related characteristics, safer sex beliefs and unprotected sex among respondents on ART in Addis Ababa public hospitals, 2009.

Characteristics	Condom unprotected sex		COR (95%CI)
	No	Yes	
Time since testing positive(months)			
3-12 months	68 (67.3%)	33 (32.7%)	1.00
12-24 months	68 (61.8%)	42 (38.2%)	1.27 (0.72,2.24)
>24 months	243 (62.5%)	146 (37.5%)	1.24 (0.78,1.97)
Duration since start ART(months)			
≤12 months	144 (61.5%)	90 (38.5%)	1.00
12-24 months	91 (63.2%)	53 (36.8%)	0.93 (0.61,1.43)
>24 months	144 (64.6%)	79 (35.4%)	0.88 (0.60,1.28)
There is reduced concern to practice safe sex because of ARV Rx?			
Agree	68 (49.3%)	70 (50.7%)	**2.10 (1.43,3.09)***
Disagree	310 (67.1%)	152 (32.9%)	1.00
Recent CD4 (count/mm^3)[a]			
≤200	100 (69.0%)	45 (31.0%)	1.00
>200	270 (60.8%)	174 (39.2%)	1.43 (0.96,2.14)
Negative safer sex knowledge			
No	291 (70.3%)	123 (29.7%)	1.00
Yes	88 (47.1%)	99 (52.9%)	**2.66 (1.86,3.80)***
Negative safer sex effectivenes			
No	294 (68.2%)	137 (31.8%)	1.00
Yes	85 (50.0%)	85 (50.0%)	**2.15 (1.49,3.08)***
Negative Safer sex pleasure			
No	254 (66.0%)	80 (24.0%)	1.00
Yes	125 (46.8%)	142 (53.2%)	**3.61 (2.55,5.11)***

[a]total varies due to missing values *statistically significant (p≤0.05)

5.1.8. Bivariate analysis of psycho-social and behavioral characteristics in relation to unprotected sex

With regards to psychosocial and behavioral characteristic as displayed in Table 6, those with low perceived self-efficacy in using condom had 6.5 times the odds of unprotected sex than those with high perceived self-efficacy bivariate logistic regression.

In respect to stigma, respondents who had experienced enacted stigma (COR=1.52 95% CI: 1.06, 2.17) or perceived stigmatization (COR=1.58 95% CI: 1.12, 2.21) engaged in unprotected more than those who didn't respectively.

Where about one fifth admitted alcohols consumption in the three months prior to the study and 7.2 % other substances use in a week time and those who had used alcohol in the last three months were more likely to engage in unprotected sex (OR=1.35, 95% CI: 1.35, 2.97) than those who had not. Those who admitted substance in a week time also had more un protected sex (COR= 1.88, 95% CI: 1.02, 2.45) when seen with those who didn't.

Table 6: Psycho-social, behavioral characteristics and unprotected sex among respondents on ART in Addis Ababa public hospitals, 2009

Characteristics	Condom unprotected sex		COR(95% CI)
	No	Yes	
Self-efficacy to use condom			
Yes	296 (78.9%)	79 (21.1%)	1.00
No	83 (36.7%)	143 (63.3%)	**6.46 (4.47,9.32)***
General self-efficacy			
Yes	222 (39.5%)	145 (60.5%)	1.00
No	157(67.1%)	77 (32.9%)	0.75 (0.53,1.06)
General social support			
Yes	255 (65.7%)	133 (34.3%)	1.00
No	124 (58.2%)	89 (41.8%)	1.38 (0.98,1.94)
Enacted stigma			
Stigmatized	101 (56.1%)	79 (43.9%)	**1.52 (1.06,2.17)***
Not stigmatized	278 (66.0%)	143 (34.0%)	1.00
Perceived stigma			
Stigmatizing	170 (57.6%)	125 (42.4%)	**1.58 (1.12,2.21)***
Not stigmatizing	209 (68.3%)	9 7 (31.7%)	1.00
Alcohol use in the last three months			
Yes	65 (50.0%)	65 (50.0%)	**2.0 (1.35,2.97)***
No	314 (66.7%)	157 (33.3%)	1.00
Substance use in a week[a]			
No	357 (64.2%)	199 (35.8%)	1.00
Yes	22 (48.9%)	23 (51.1%)	**1.88 (1.02,2.45)***

a. Substances were *khat, cigarettes, shisha and hashish*. *Statistically significant ($p \leq 0.05$)

5.1.9. Multivariate analysis for the exploratory variables with unprotected sex

Factors that are independently associated with unprotected sex were explored by using multivariate analysis. Those variables that showed significant association with unprotected sex ($P \leq 0.05$) from each constructs (socio-demographic characteristics, partner related characteristics, medical and medical and safer sex belief characteristics, psychosocial and behavioral characteristics) in bivariate analysis were included for the multivariate analysis after checking for multicoliniarity. Type of partner and number of current partnerships were strongly correlated so that types of partner were not included for the multivariate analysis. Multiple partnership (AOR=2.67,95%CI:1.09,6.57), discussion on condom use and safe sex (AOR=7.23,95% CI: 4.14, 12.63) and negative safer sex pleasure (AOR=2.39, 95% CI: 1.52, 3.76), partner's negative serostatus (AOR=0.33, 95% CI:0.14,0.80) unknown partner serostatus (AOR=0.19 CI 95% CI: 0.09,0.39), and self-efficacy to use condom(AOR =3.29, 95% CI: 2.07, 5.23) are factors independently associated with unprotected sex in the multivariate analysis.

Table 7. Multivariate explanatory variables with unprotected sex among ART attendants in Addis Ababa public hospitals, 2009

Characteristics	Unprotected Sex n (%)	COR (95%CI)	AOR(95%CI)**
Age			
≤25	23 (47.9%)	1.00	1.00
26-35	116 (33.3%)	**0.54 (0.29,0.99)***	0.68 (0.31,1.47)
≥36	83 (40.5%)	0.74 (0.39,1.39)	0.75 (0.33,1.71)
Education status			
≤6	66 (43.4%)	1.00	1.00
7-12	108 (33.3%)	**0.65 (0 .41,0.97)***	0.80 (0.48,1.35)
>12	48 (38.4%)	0.81 (0.50,1.32)	1.55 (0.83,2.89)
Number Current partner(s)			
Single	188 (34.8%)	1.00	1.00
Multiple	34 (56.7%)	**2.46 (1.43,4.22)***	**2.67 (1.09,6.57)***
Life Partner(s) before testing positive			
One	101 (34.5%)	1.00	1.00
Two	55 (34.0%)	0.98(0.62-1.47)	0.874 (0.52,1.46)
Three and above	66 (45.2%)	**1.57(1.04,2.35)***	1.185 (0.68,2.05)
Discussion about safe sex with sex partner(s)			
Yes	107 (23.9%)	1.00	1.00
No	115 (75.2%)	**9.65 (6.30,14.77)***	**7.23 (4.14,12.63)***
Partner's HIV status			
Positive	175 (40.7%)	1.00	1.00
Negative	9 (14.5%)	**0.25 (0.12,0.56)***	**0.33 (0.14,0.802)***
Unknown	35 (33.3%)	0.73 (0.47,1.14)	**0.19 (0.09,0.391)***
There is reduced concern to practice safe sex because of ARV Rx?			
Agree	70 (50.7%)	**2.10 (1.43,3.09)***	0.84 (0.51,1.40)
Disagree	152 (32.9%)	1.00	1.00
Negative safer sex knowledge			
No	123 (29.7%)	1.00	1.00
Yes	99 (52.9%)	**2.66 (1.86,3.80)***	1.46 (0.89, 2.41)
Negative safer sex effectivenes			
No	137 (31.8%)	1.00	1.00
Yes	85 (50.0%)	**2.15 (1.49,3.08)***	0.61 (0.35,1.05)

Negative Safer sex pleasure	80 (24.0%)	1.00	1.00
No	142 (53.2%)	**3.61 (2.55,5.11)***	**2.39 (1.52, 3.76)***
Yes			
Self-efficacy to use condom			
Yes	79 (21.1%)	1.00	1.00
No	143 (63.3%)	**6.46 (4.47,9.32)***	**3.29 (2.07, 5.23)***
Enacted stigma			
Stigmatized	79 (43.9%)	**1.52 (1.06,2.17)***	0.85 (0.50, 1.43)
Not stigmatized	143 (34.0%)	1.00	1.00
Perceived stigma			
Stigmatizing	125 (42.4%)	**1.58 (1.12,2.21)***	1.05 (0.65,1.71)
Not stigmatizing	9 7 (31.7%)	1.00	1.00
Alcohol use in the last three months			
Yes	65 (50.0%)	**2.0 (1.35,2.97)***	1.56 (0.90,2.69)
No	157 (33.3%)	1.00	1.00
Other substances use in a week			
No	199 (35.8%)	1.00	1.00
Yes	23 (51.1%)	**1.88 (1.02,2.45)***	0.77 (0.32, 1.83)

**adjusted for socio-demographic characteristics, partner related, medical and safer sex beliefs related characteristic and psychosocial and behavioral characteristics *statistically significant ($\leq$0.05).

5.2. Findings from qualitative study

5.2.1. Socio demographic characteristics of the respondents

Thirteen purposively sampled in-depth interviews were held in four of the seven hospitals under study (Yekatit 12, Minilik II, and St. Petros, RasDesta hospitals). The mean age of the respondents was 32.3 ± 5.0 (SD). Three were above 35 years of age while the rest lay in the age category of 25-35 years. Eight of the respondents were females, nine married, one widowed and the rest were unmarried.

While two respondents were grade 4 and 5, all the rest had completed schooling between grades 7-12. Two were Muslim, two Protestant, and all the rest were Orthodox. Seven of the thirteen were unemployed, two self-employed (tailors), and three were merchants, government employees and private employees.

The duration of being diagnosed for HIV ranged from four months to seven years with mean of 31.5 months, and the duration being on ART ranged from one month to three years with mean of 21 months.

5.2.2. Life partner and condom use habit before testing positive

All the respondents experienced multiple life partners before testing positive. While two of the respondents claimed they had two partners and one who did not specify numerically, the rest had three or more partners. With regards to their condom use before testing positive, eight had used condoms irregularly while five were had no condom use history before testing positive.

A 28-year-old, unmarried lady respondent explained: *"…before I came to know myself as HIV positive, I was working as a bar lady. I had many partners, but two of them were regular, and I didn't use condom with them because they were my lovers, but I used condom with all the rest partners…."*

A 30-year-old married lady narrated her sexual behavior and life partner before being HIV positive as*: "Before I come to know my HIV status, I had two partners including my current husband, where the first one was my boy friend and he was the first person with whom I had a sex for the first time in my life. Because, I love him very much, most of the time we had sex without condom. Later, I learned from my friends that he also had another partner besides me and I have stopped the relation I had with him. With my current partner, husband, we used to use condom at the beginning, but later not."*

A 33-year-old, unmarried man said*: "Because I was young, I was with many partners and condoms were unappealing for me that I haven't used it in most of the sexual intercourses I had"*

5.2.3. ART and sexual desire

Respondents were provided with questions focusing on the impact of initiating ART brought on their sexual desire. Some of them mentioned improvement in their sexual desire while some others responded as their desire to have sex have been depressed since testing positive and then even after initiating ART.

A 34-year-old, grade 4, married man explained *"Before I knew myself, I was frequently sick and I didn't feel happy and so was my sexual desire. However, thanks to the drug now, I am feeling healthy and my desire to have sex is very nice and I regained it"*.

A 29-year-old lady said *"My sexual desire has been depressed since the date I knew myself...sexual desire is associated with internal health and conveniences. But I was having sex only to keep the interest of my husband"*.

5.2.4. Respondents partner status and condom use in the three months prior to the study

All the thirteen reported they only had one sexual partner. The majority was with their legal married partner and three of those unmarried or widowed were with a partner they consider as steady. With regards to their partner's serostatus three were reported as seronegative (but two of them were under suspicion) and ten of them were with seropositive partner. Pertaining to their condom use; three groups were identified, those who were consistently using condoms, those inconsistently using condoms and those not using condoms. Eight used condoms consistently, three had not used a condom and two used them inconsistently.

Responses from respondents who were consistently using condoms;

A 36-year-old-man who tested positive 3 years before and was living with his seronegative partner said: *"My partner was seronegative as we tested together last year and I have the responsibility to take care for her that at each of our sexual acts we used condom ……..even in case she is positive, it is our life, because, drug adaptation can occur as the viruses are different in different individuals and I will continue to use the condom"*

Another 38-year-old married women living with her HIV positive partner said*: "My husband is a truck driver, he comes once or twice in a month and each time we had sex we used condoms, because he is the prime person in supporting our life, I should care for him, as there can be drug adaptation of the virus if we don't use condom"*.

Yet another 28-year-old unmarried lady said*: "We both work in one faith based organization and he was the one who helped me in order to get employment there. He asked me for partnership and I disclosed myself as I am HIV positive and he told me that he is negative, but he accepted me. Even if we used condom consistently, I am not sure for he is negative as he feels free while having kiss with me"*.

Responses from respondents who were not using condom

A 32 year-old married lady stated that: *"I had sex only with my husband that we had it once in two weeks and that were without condom. He told me that he is seronegative even though not voluntary to be tested with me, but he didn't want to use condom. When I requested him to use condom, his reaction was not good and I felt bad with his reaction as it is me who is positive. He explained me that his blood and mine is quite different, so that the Virus cannot infect him, then I decided after all not to raise the issue of condom use with him".*

Another 25-year-old-married lady responded as*: "Similar to me, my husband is also positive and we didn't use condom, even before that (means before three months). If I had sex with someone else, I should use condom because I don't want to affect other people but now both of us are positive"*

Response from respondent reported inconsistent use of condom

A 39-year-old man who was recently diagnosed HIV positive said "*I felt fear to tell my partner to use condom on the first day of sexual intercourse after I tested positive and had sex without condom. But on next, I disclosed myself and she was also tested positive, and since then we have been using condoms regularly".*

5.2.5. Respondent's response pertaining to the importance of using condoms

Respondents mentioned different views on the importance of condom use after testing positive in the context of positive and negative partners. All of them stated that condoms are important in protecting against unwanted pregnancy. Ten respondents mentioned the use of condoms related to the risk of reinfection, risk of transmission and drug adaptation in addition to protecting against unwanted pregnancy. Seven also explained condom use is important in preventing other sexually transmitted diseases. One respondent explained that he was counseled by doctors that having sex without a condom is not good for his health, and was using condom consistently but was not able to specify what problem unprotected sex might bring on them other than protecting from unwanted pregnancy .

A 33-year-old married lady expressed that*: The virus in me may be different from the virus in my husband, because I am taking the drug, but he is not, so this can bring problem on us if we have sex without condom"*

Two of the respondents didn't know the importance of using condoms apart from protecting against pregnancy, both of them were with their respective HIV positive partners, one 33- year's old man explained as;

"I know Condom is important to prevent pregnancy for that my wife is using other family planning, and I don't know for other use of condom since both of us positive"

5.1.6. Ideas generated by respondents why HIV- positive persons do not use condoms

Four thematic points were raised concerning why people living with HIV/AIDS are not using condoms: lack of sexual pleasure with condom use, fear of disclosing to the partner, suspicion over the use of condoms (lack of confidence in condoms), lack of knowledge of the importance of condoms having tested positive.

A 42-year-old -widowed man currently with a HIV positive steady partner said "*stigma and discrimination still exist in the community, for example there are cases that people do not want to come your home if you are HIV positive. As a result of this, people fear to disclose themselves even to their partner, so they can have sex without condom even if she/he knew herself /himself.*

Another 28-year-old married lady mentioned that: "*People hate condoms and are not interested to use them.*"

6. DISCUSSION

Research has shown that many people who learn that they are infected with HIV alter their behaviors to reduce their risk of transmitting the virus (14, 15). However, there are still men and women living with HIV/AIDS who experience difficulty maintaining safe sex practices and who place partners and themselves at considerable risk of sexually transmitted infections (7). This study has tried to assess risky sexual practice and factors related among people living with HIV/AIDS who were taking ART and sexually active in the three months prior to the study.

In this study, it was found that 36.9% of the respondents had unprotected sex at least once in the three months prior to the study, while the rest consistently used condoms. This figure is high when with compared to the study conducted in South Africa and the United States where about 30% and 23% respectively reported one or more unprotected encounters in the previous three months (17, 19). 29.6% did not use a condom during their last sex act, which is higher than a study conducted on high-risk sexual behavior among people living with HIV/AIDS in Jimma hospital clinical care, where about 24% had not used a condom during their last sexual encounter (21).The high prevalence of unprotected sex in this study might be due to the high reported intention to have a child and majority of the study subjects were in marital relationship unlike the studies used for comparison.

The majority of the respondents had a single steady partner, which also holds true among those approached for the in-depth interview. Furthermore, there were also a considerable number of respondents who had casual partners, multiple partners or a mix of both casual and steady partners.

About 82.0% of the respondents reported steady partner/s, while the rest reported casual partner/s or a mix of both steady and casual. These results are in accordance with the research done in Botswana where the majority was with a single steady partner (23). Despite expectation, 10% of the respondents reported multiple partnerships and even though it is actually lower than the 20% reported in Botswana and the 40% among males and 18% among females reported in South Africa, but it is higher than the 5.6% reported from another study in South Africa (17, 18, and 23). These inconsistencies of reporting could be attributed to study setting differences.

Regarding to the type of partner and partner's serostatus, 77% of unprotected sex was among those who were with a steady partner and the majority of unprotected sex (79.3%) were with seropositive partner and the likelihood of practicing unprotected sex was higher among those who knew their partner's status as HIV positive, which is in agreement with study conducted in United States (24), but not with the other studies conducted in south Africa and Dominican Republic, where unprotected encounters were more likely occur with those unknown serostatus partners (20,18). What should not be overlooked here is that, 4.1% and 16.2% of the unprotected encounters were with partners perceived of seronegative and unknown serostatus respectively which possibly contribute for new acquiring infection with HIV.

In conformities with various studies done in South Africa and the United States, there was no significant difference in risky sex by gender, marital status, employments status or income level (17, 22).

With regard to the number of partners in relation to unprotected sex, the study indicated that those who had multiple partners had about two folds in risk of unprotected sex in bivaritate

logistic regression and multivariate analysis, but study conducted in Botswana found that participants with one sex partner and those who had multiple sex partners did not differ in their unprotected intercourse (23).

About 82.5% of the respondents fully disclosed to their partner, while the rest either did not disclose or partly disclosed and disclosure status was one hundred percent among the in-depth interview participants. Although disclosure is often assumed to allow for easier negotiation of safer sex, contradictory findings were found on the effect of disclosure on practice of safe sex; some literature suggested that disclosure by itself may be insufficient because it is a rather general type of communication that, by itself, does not focus specifically on a target behavior (i.e. safer sex) (25). In the current study, there is no significant difference between those who had disclosed and those who had not in practicing of unprotected sex , which is in agreement with a study in the United States (22), but not with the study reports from South Africa and Jimma, Ethiopia (18,21).

The most important aspect of interpersonal communication related to prevention of HIV transmission is whether sex partners have explicitly discussed the issue of safer sex and have reached agreement about it especially in discussing types of sexual activity that would be safe and in reaching an agreement about safer sex in predicting protected sex (25). Consistent with this, in the present study, those who reported discussion about condom use and safe sex with their sex partner/s were more consistently using condoms. Absence of discussion predicted engagement in unprotected sex in both bivariate and multivariate logistic regression analysis.

A range of reasons were mentioned by the respondents for why they did not use a condom. About twenty five percent reported that their partner did not want to use a condom, and twenty four percent reported that their partner was also positive (both positive), which were also raised in the in-depth interview. These reasons were also primarily reported in studies conducted in the Dominic Republic and Jimma (20, 21). The salient finding here is that, fifty two (18.1%) of the main reason for not using a condom was because of their or their partner's desire for a child.

In line with a study conducted in United States (22), the finding of the study indicated that the time since diagnosis and duration on ART was not associated with unprotected sex. It has been also reported that concerns about engaging in unsafe sex reduced with the availability of ART (31). This study also showed that those who agreed with the reduced concern were more likely to engage in bivariate even though failed to reach significance in the multivariate analysis.

The issue related to condom take away sex pleasure (romance) was what noted many times in both the quantitative and in-depth interviews. The finding of this study builds finding from the previous researches (22, 33) that negative safer pleasure in using condom was associated with unprotected sex, where those who have negative safer sex pleasure attitude had more unprotected sex. With the premises that some studies suggested many of the predictors promoting unprotected sex in general population also holds true for seropositive people, the current study assessed the self-efficacy in using a condom and it was found that, those who lacked self-efficacy in condom use were about three folds more likely to have unprotected sex than those who had good self-efficacy and this indicate need of intervention in making capable the patients in using condom.

With the growing evidence that stigma and discrimination contributes to risky behaviors in HIV positive (27), studies conducted in France and Ethiopia (Jimma) showed that perceived stigma was associated with risky health behaviours such as unprotected sex and those who perceive HIV as a highly stigmatizing disease were less likely to use a condom (28,21). In the present study, where about half of the respondents had perceived stigmatization, it was not found to be significant predictor for unprotected sex after controlling for the possible confounders.

In this study, about one fifth of the respondents admitted consumption of alcohol in the previous three months and those who used alcohol in the last three months had about two fold higher risk of unprotected sex than those who did not use alcohol in the bivariate analysis. This was also supported by research conducted in SNNP that those who reported alcohol use were found to have a six fold increased odds of practicing risky sexual behavior compared to non-users (27) which demand intervention.

7. STRENGTHS AND LIMITATIONS

Strengths

- The study addresses an important area, risky sexual practice and factors related among the HIV positives. The study findings give an insight for further research in this area and

may guide program planners in prevention of transmission and reinfection with HIV among those uninfected and infected respectively.

- The quantitative study was supplemented with a qualitative study.

Limitations

- The study was a cross sectional design and couldn't address the dynamic nature of sexual behavior that could be better addressed through longitudinal study.
- The research addressed the sensitive issue, and the possibility of social desirability bias is unavoidable.
- The lack of similar study in the local context to validate the tools and to make exhaustive comparisons in discussion.
- The study population consisted consecutive samples those fulfilled the criteria within the study period that may prone to selection bias and/or can limit generalizablity.

8. CONCLUSIONS

- Even though the majority of the respondents had changed their behavior in relation to condom use after finding out their status, still about (36.9%) continued to have unprotected sex.

- The majority of the respondents had a single steady partner and one in ten reported multiple partnerships. Having multiple partnerships is also one of the factors independently associated with unprotected sex. More unprotected encounters were practiced among respondents who had HIV positive partners, and there were also a considerable number of respondents who had unprotected sex with HIV negative and unknown serostatus partners.

- About seventy percents of the reasons given for not using condoms were partners' dislike, both partners being HIV infected and desire for a child.

- Those who had less discussion about safe sex, negative safe sex pleasure, and low self-efficacy to use condom were more likely to engage in unprotected sex.

- Significant numbers of respondents were admitted alcohol, *khat*, cigarettes, and other substances consumption.

8. RECOMMENDATIONS

- In all cases, whether unprotected sex is with a seropositive or with a seronegative or unknown partner, it is a threat to the patient and the corresponding partner; so counseling interventions to reduce unprotected sex should be tailored to each patient by their counselor.

- Free and explicit discussion safe sex and positive attitudes toward condom use among the partners should be encouraged through their counselors.

- Patients should be made capable of using condoms and also made to avoid the use of alcohol and other substances by counseling, education and other necessary interventions through their counselors.

- The results of this study should be interpreted cautiously in view of the limitations, and further research is recommended to replicate the findings.

10. RERERENCES

1. Ministry of Health: Health and Health related indicators. Addis Ababa, Ethiopia; 2007

2. Ministry Of Health Ethiopia & Federal HIV/AIDS Prevention and Control Office: Single Point HIV prevalence estimate. Addis Ababa, Ethiopia; 2007.

3. Central Statistical Agency: Ethiopia Demographic and Health Survey. Addis Ababa Ethiopia; 2005

4. Ethiopian Public Health Association: Identifying HIV/AIDS, Sexually Transmitted Infections and Tuberculosis Research Gaps, and Priority Setting Agenda in Ethiopia; 2005.

5. Zikan S, E.Novotny T, Bogava J. Unsafe sexual behavior, among HIV infected patients in Croatia, 2006. Prevalence and associated factors. AIDS Behavior, 2008 12:586-592.

6. Kalchman SC. Psychological and social correlates of high risk sexual behavior among men and women living with HIV/AIDS. AIDS Care, 1999, 4:415-427.

7. Wilson T, Gore E, Greenblatt R, Cohen M, Minkoff H, Silver S, et al. Change in sexual behavior among HIV infected women after initiation of HAART. American Journal of Public Health, 2004, 7:1141-1146.

8. Yousuf J. Assessment of risky sexual behavior for HIV infection with special focus on night markets and mobile people in Gummer Woreda, Gurage Zone. AAU; Master of Public Health Thesis, 2005.

9. Crepaz N, Marks G. Towards an understanding of sexual risk behavior in people living with HIV: A review of social, psychological, and medical findings. AIDS, 2002, 16(2):135-149.

10. Vittinghoff E, Scheer S, O'Malley P, Colfax G, Holmberg SD, Buchibinder SP. Combination antiretroviral therapy and recent declines in AIDS incidence and mortality. J Infec Dis. 1999, 179: 717-720.

11. Eisele T. Mathews T, Chopra T, Brown L, Silvestre E, Daries V, Kendall C. High Levels Risk Behavior Among people living with HIV initiating and waiting to start ART in cape Town South Africa. AIDS Behav. 2008, 12:570-577.

12. Federal HIV AIDS Prevention and Control (FHAPCO). Monthly HIV Care and ART Update of Tikimt, 2001 (November 9, 2008). Available at: www. HAPCO.GOV.et.

13.Bateganya MH, Kityo C, Mugyenyi P, Mayanja H, Serwadda D . Sexual behavior of HIV-positive patients attending an urban HIV/AIDS Clinic-Joint Clinical Research Center. Kampala, Uganda. http://gateway.nlm.nih.gov/MeetingAbstracts/ma?f=102280689.html.

14. Weinhardt L, Carey M, Johnson B, Bickham N. Effects of HIV counseling and testing on sexual risk behavior: a meta-analytic review of published research, 1985-1997. American Journal of Public Health 1999; 89:1397-1405.

15. CDC. High-risk sexual behavior by HIV-positive men who have sex with men16 sites, United States, 2000–2002. MMWR 2004; 53: 891-894.

16. Kalichman SC, Rompa D, DiFonzo K, Simpson D, Kyomugisha, F., Austin, J., & Luke, W. Initial Development of Scales to Assess Self-Efficacy for Disclosing HIV Status and Negotiating Safer Sex in HIV-Positive Persons. AIDS & Behavior 2001, 5291- 296.

17. Susan M , Kiene S, Christie S, Cornman D, Fisher W, Paul A, Pillay S, Friedland S , Fisher J. Sexual risk behavior among HIV-positive individuals in clinical care in urban KwaZulu-Natal, South Africa .AIDS 2006, 20(13): 1781-1784.

18. Simbayi L C, Kalichman SC, Strebel A, Cloete A, Henda N and Mqeketo A. Disclosure of HIV status to sex partners and sexual risk behaviors among HIV-positive men and women, Cape Town, South Africa. Sexually Transmitted Infections 2007; 83:29-34.

19. Michael J, Kozal, Amico. Antiretroviral resistance and high-risk transmission behavior among HIV-positive patients clinical care. AIDS Care 2004, 18(16):2185-2189.

20. Sears D, Cabrera-Rodriguez C, Mejia O, Andarson B, Stain M .Sexual Risk behavior among HIV positive patients at an urban clinic in Santiago Dominican Republic AIDS care; 2008, 20 (2):191-197.

21. Deribe K, Woldemichael K, Wondafrash M, Haile A, Amberbir A. High-risk behaviours and associated factors among HIV-positive individuals in clinical care in southwest Ethiopia. Tropical Doctor 2008; 38: 237-239.

22. Milam J, L. Richardson J, Espinoza L, and Stoyanoff S. Correlates of Unprotected Sex among Adult Heterosexual Men Living with HIV. Journal of Urban Health: Bulletin of the New York Academy of Medicine 2006, 83(4): 669-681.

23. Kalichman SC, Ntseane D Nthomang K, Segwabe M, Phorano O, CSimbayi L. Recent multiple sexual partners and HIV transmission risks among people living with HIV/AIDS in Botswana. Sexually Transm Infection 2007, 83:371-375.

24. Niccoli L.M, D'Enteromont D, Pritchett E.N and Wanger K. Unprotected intercourse among people ling with HIV/AIDS: the importance of partnership characteristics. AIDS Care 2006, 18 (7):801-807.

25. Crepaz N, Marks G. Serostatus disclosure, sexual communication and safer sex in HIV-positive men. AIDS Care 2003, 15(3): 379-387.

26. Debeko K. Sexual and reproductive health needs and preferences of people living with HIV/AIDS in Southern Nations Nationalities and Peoples Region. AAU; MPH Thesis 2007.

27. Pulerwitz J, Michaelis AP, Lippman SA, Chinaglia M, Diaz J. HIV-related stigma, service utilization, and status disclosure among truck drivers crossing the Southern borders in Brazil. AIDS Care 2008; 20 (2):198-204.

28. Spire B**,** de Zoysa I**,** Himmich H. HIV prevention: What have we learned from community experiences in concentrated epidemics? J Int AIDS Soc. 2008; 11: 5. Published online 2008 October 1. doi: 10.1186/1758-2652-11-5

29. Dukers NHTM, Goudsmit J, de Wit JBF, Prins M, Weverling G, Coutinho R. Sexual risk behavior relates to the virological and immunological improvements during highly active antiretroviral therapy in HIV-1 infection. AIDS Care 2001, 15: 369-378.

30. Scheer S, Chu PL, Klausner D, Katz M, Schwarcz S. Effect of highly active antiretroviral therapy on diagnoses of sexually transmitted diseases in people with AIDS. Lancet 2001, 357: 432-435.

31. Vanable P, Ostrow G, McKiernan J, Taywaditep K, Hope B. Impact of combination therapies on HIV risk perceptions and sexual risk among HIV-positive and HIV-negative gay and bisexual men. Health Psychol 2000, 19: 134-145.

32. Vander Straten A, Gomez CA, Saul J, Quan J, Padian N. Sexual risk behaviors among heterosexual HIV serodiscordant couples in the era of post-exposure prevention and viral suppressive therapy. AIDS 2000, 14: F47-F54.

33. Kalichman SC, Rompa D.HIV treatment adherence and unprotected sex practices in people receiving antiretroviral therapy Sexually Transmitted Infections 2003, 79:59-61.

34. Kline A, VanLandingham M. HIV-infected women and sexual risk reduction: the relevance of existing models of behavior change. AIDS Educ Prev. 1994, 6(5):390-402.

35. Jerusalem M, & Schwarzer R. (1992). Self-efficacy as a resource factor in stress appraisal processes. Available at http://userpage.fu-berlin.de/~health/selfscal.htm.

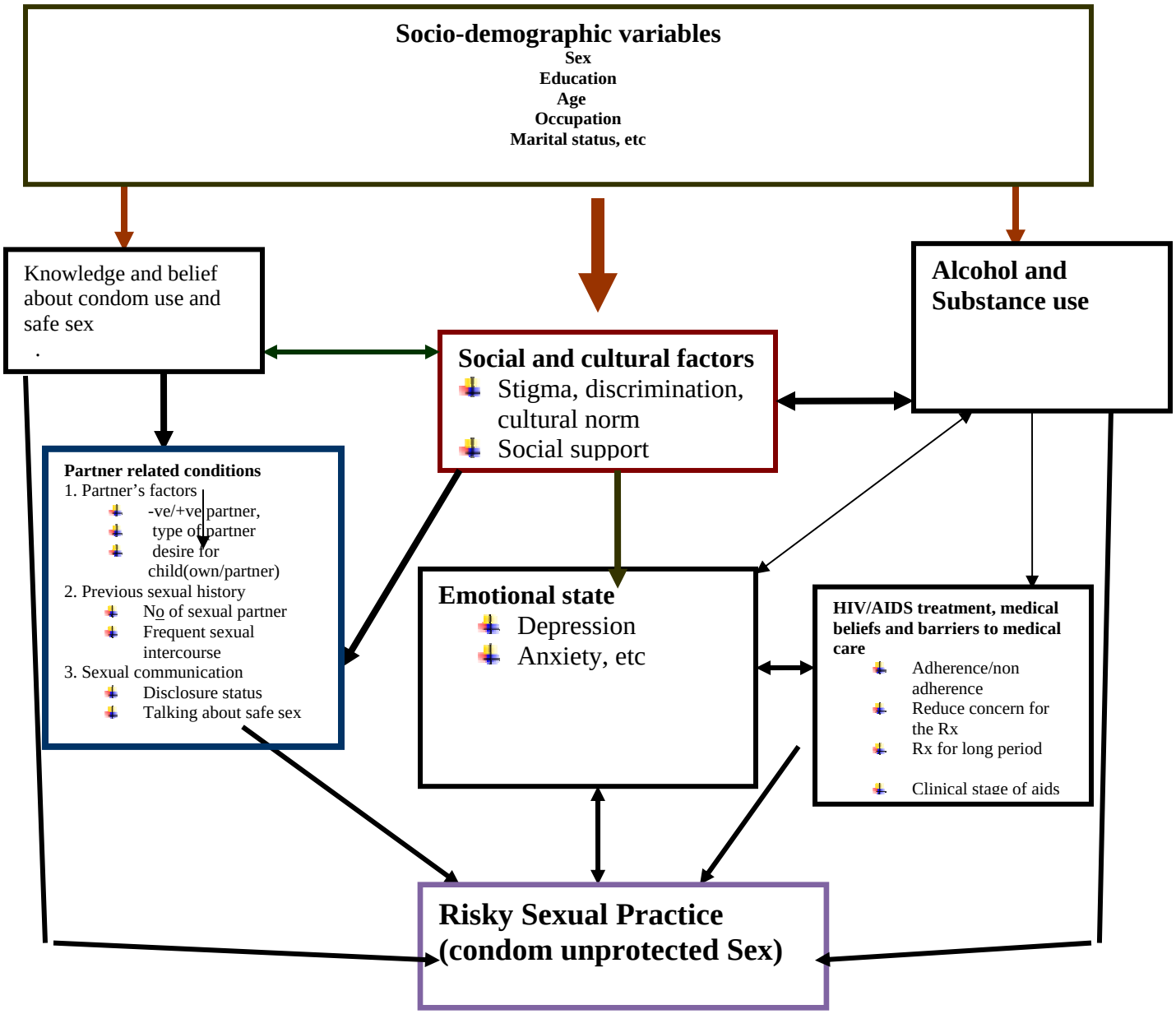
36. Brien T, Thombs D, Mahoney C Wallnau L. Dimensions of self-efficacy among three distinct groups of condom users. file:///C|/CHIPTS_local/Assessment_Instruments/Assessment_files_new/

37. Cutrona C, Russel D. The provisions of social relationships and adaptation to stress. Advances in Personal Relationships 198; 1: 37-67.

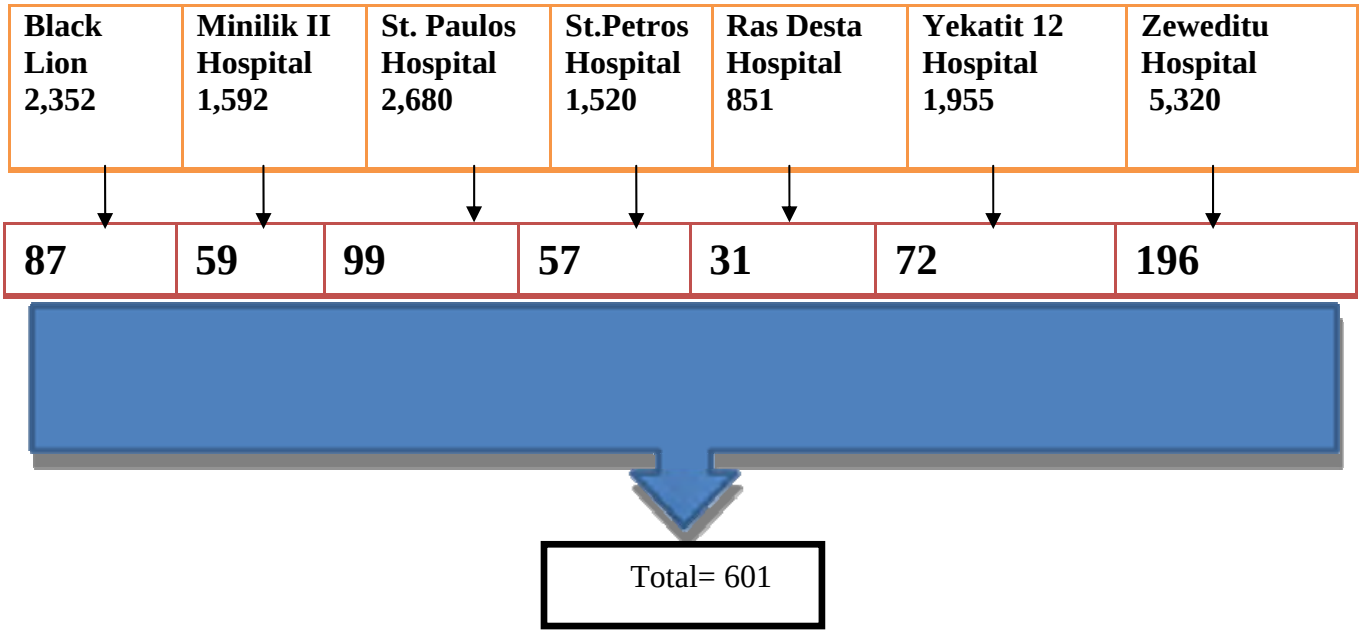
38. Swendeman D, Rotheram-Borus MJ, Comulada S, Weiss R, and Ramos ME. Predictors of HIV-related Stigma among Young People Living HIV/AIDS. AIDS and Behavior 2002; 6(4):309-319

11. ANNEXES

Annex 1: Conceptual frame work of the study



Annex 2.Schematic presentation of the proportional allocation of samples from the public hospitals (N=16,270)



Source: FHAPCO. **Monthly HIV Care and ART Update of Tikimt, 2001 (November 9, 2008).** Available at: www.HAPCO.GOV.et

Annex 3: Information sheet and consent form (English version)

General Information

Hello! How are you? My name is _____ I am here on the behalf of Addis Ababa University school of public Health in order to collect health information related to sexual behavior from ART follower clients. And this is a structured questionnaire prepared to assess sexual behavior of people living with HIV/AIDS who are sexually active and are on ART in selected public Hospitals in Addis Ababa. The main aim of the research is to provide basic information about the sexual behavior of people living with HIV/AIDS who are sexually active. The correct information's that you provide us in combination with information's we obtain from other clients have great importance in modifying and improving the service that are provided for the clients and in setting of effective prevention and intervention strategy for HIV/AIDS in the country. I strongly assure that your name and other identifier of your status will not be documented in the questionnaires and the information you provide us will be kept confidential and will not be used for anything other than research purpose. You are not forced to participate and you have the right to decline at any time in between. But we encourage you to respond to the questions and give us necessary information's. The questions will not take more than 30 minutes .You can ask any questions at any time.

Thank You!

Consent form

The researcher explained me all the necessary information about the objective of the study. In addition, I have been informed as I have the right to not participate and decline at any time. Based on the information, I confirm my agreement to participate on the study and provide necessary information.

Are you willing to participate in the study? Agree ☐ Disagree ☐

If the client agrees, thank and proceed the interview.

If the client disagrees, thanks and Proceed to the next eligible client

Interviewer signature_____ Date_____/_____/_____

Annex 4. Information sheet and consent form (Amharic Version)

አድስ አባባ ዩንቨረሲቲ
<u>የሕክምና ፋኩልቲ</u>
<u>የሕብረተሰብ ጤና ሳይንስ ክፈል</u>

ጤና ይሰጥልኝ ስሜ _____ ይባላል። በዝህን ሰአት እዝህ የተገኘዉት በአዲስ አበባ ዩንቨርስቲ ህብረተሰብ የጤና አጠባበቃ ትምህርት ቤት በኩል የፀረ ኤች አይ ቪ ኤድስ ህክምናቸዉን ክትትል ከሚያደርጉት ሰዎች ጥናታዊ መረጃ ለመሰብሰብ ነው። ይህ መጠይቅ የተዘጋጀው በአዲስ አበባ የመንግሥት ሆስፒታል ውስጥ የፀረ ኤች አይ ቪ ኤድስ ህክምናቸዉን ከምከታተሉት ሰዎች ስለወሲብ ሕይወታቸው ለመጠየቅ ነው። የጥናቱ ዋና ዓላማ ኤች አይ ቪ ፖዝተቭ ሰዎች የወሲብ ሕይወታቸው ምን እንደሚመስል መረጃ ለማግኘት ነው። ከተለያዩ ታካሚዎች የምናገኛቸው መረጃዎች አንድ ላይ ተዳምሮ እየተሰጠ ላለው ህክምና ለማሻሻል እና የተጠናከረ የኤች አይ ቪ ኤድስ መቆጣጠሪያና መከላከያ ዘዴዎች ለመዘርጋት ትልቅ አገዛ ያደርጋል። አንድ የማረጋግጥላችሁ ነገር በዚህ መጠይቅ ውስጥ ሥምምቶትንና እርሶን ለመለየት የሚያስችሉ ነገሮች አይፃፍም። የሚሰጡን መረጃ ከጥናታዊ ጽሑፍ ውጪ ለምንም አንጠቀምም። መመለስ ያልፈለጉትን ጥያቄዎች እንዲመልሱ አይገደዱም። በጥናቱ ላለመካፈል በማንኛውም ጊዜ መወሰን ይቻላሉ። ነገር ግን ትክክለኛውን መረጃ እንዲሰጡን እናበረታታለን። መጠይቁ ከ 30 ደቂቃ በላይ አይወሰድበትም። ግልጽ ያልሆነ ነገር ካለ በማንኛውም ጊዜ መጠየቅ ይቻላል።

አመሰግናለሁ!

<u>የስምምነት ቅጽ</u>

አጥኚው ስለ ጥናቱ ዓላማና ሌሎች የሚያስፈልጉቲን መረጃዎች በትክክል አብራርቶልኛል፡፡ በተጨማሪም በጥናቱ ላይ ላለመካፈል መብት እንዳለኝ እና በሚያስፈልገኝ ጊዜ ማቋረጥ እንደምችል ተነግሮኛል፡፡ በዚህዚህ ላይ በመመስረት በጥናቱ ላይ ለመከፈልና የተጠየቀውን መረጃ ለመስጠት መስማማቴን አረጋግጣለሁኝ፡፡

በጥናቱ ላይ ለመሳተፊ ፍቃደኛኖት? አዎ ☐ አይደለም ☐

ተጠያቂው ከተስማማ ወደ ጥያቄዎቹ ይለፉ

ተጠያቂው ካልተስማሙ አመስግነው ወደ ሌላ ተጠያቂ ይለፉ

የጠያቂው ፊርማ_____ ቀን_____ /_____ / _____

Annex 5. Survey questionnaire (English and Amharic Version)

Questionnaire: English Version

1. Questionnaire on Sexual practice of HIV positive people who are on ART.

No	Question	
01	Name of the health facility	
02	Date of the interview	
03	Name of the interviewer	
04	Name and signature supervisor	
05	Date	
06	Code number	

Part I. Socio demographic information

No	Questions	Response
101	Age?	_____age in completed year
102	Sex of the respondent?	1.Male 2.Female
103	Educational status?	1.Unable to write and read 2.Write and read 3.Completed grade_____
104	Religion?	1.Orthodox 2.Muslim 3.Protestant 4.Catholic 88.Other_____
105	Ethnicity?	1.Oromo 2.Amahara 3.Tigre 4.Guraghe 88.Others _____

106	What is your current occupation?	1. Government employee 2.Private employee 3.House wife 4.Daily laborer 5.Housemaid/servant 6.Merchant 7.Comercial sex worker 88.Other (specify)_____
107	What is your average monthly Income?	_____**Eth. Birr** 2.No income 3.Don't know 88. Other (specify**)**_____

Part II. Sexual behavior before tested positive, time of tested and of started for ART

No	Questions	Response (Coding categories)
201	Where were you tested when you first discovered you were HIV positive?	1.In this health facility 2.Other(specify)_____
202	By which HIV counseling and testing approach was you tested?	1.VCT 2.PIHCT 3.Other____
203	How long is it since you tested positive for HIV/AIDS?	_____(months, years)
204	How long is it since you have started ARV therapy?	_____(months, years)
205	What was your marital status by the time you knew your HIV status?	1.Married 2.single 3.divorced 4.separated

		5.widowed
206	How many sexual partner/s did you have before you tested posting positives for HIV?	1.one sexual partner 2.two sexual partner 3.three or more sexual partner
207	Did you use condom before you testing positive?	1.Yes 2.No
208	If your answer is **Yes For Q 207,** How frequently did you use condoms?	1.always 2.almost always 3.about half of the time 4.not very often 5.almost never

Part III. Questions assessing sexual behavior of patients currently on ART

No	Questions	Coding categories
301	What is your current marital status?	1. Married 2. Single 3.Divorced 4. Separated 5. Widowed.
302	With how many partners did you have sex in the last **three** months?	1.one 2. two 3.three 4.four 5.five 6. more than five

303	If your answer is **one,** for **Q 302** identify the kind of partner you have had *steady-wife, husband, girl/boy friend* *casual-not steady partner/s*	1.primary/steady partner/s 2.casual partner/s	
304	If your answer **is 2** and above for **Q 302,** identify the kind of partners whom they are?	1 steady partner/s_____ 2. causal partner/s_____	
305	How long have you stayed with your current regular partner? (**for those who have steady partner**)	_____(months or years)	
306	What has your sexual desire seem after you started ART treatment?	1. Desire is improved compared to before 2.Desire is normal as before 3.Desire is decreased as compared to before	
307	Did you used condom in the last three months?	1.Yes 2.No	If **2** Skip to 309
308	If yes to Q207, how often you used condom?	1.Always 2.Almost always (more than half) 3.Sometimes (Half) 4. Almost never/never	If **1** Skip to 312
309	If Your answer is either of **2, 3, or 4 for Q 308 and 2 for question 307** with whom you didn't use condom? **(more than one answer is possible**)	1.casual partner 2.steady partner 3. in both type of partners	
310	If your answer is either of 2**, 3, 4, and 5** for **Q 308, and 2 for question 307** what were the	1. My partner/s did not want to use a condom 2. My partner/s already had HIV 3. Sex doesn't feel the same with a condom	

<table>
<tr><td></td><td>reasons for not using condom always? [multiple responses are possible]</td><td colspan="3">4. Didn't have a condom available
5.I fear to ask my partner to use a condom
6. Thought my partner did not have STI
7. Was drunk and didn’t think of condom use
8. Wanted to have a child (own/partner)
9. Did not know condoms could reduce the risk of reinfection.
10. condom is against my religion
11. I didn’t use because I am infected
88.other(specify) ----------</td></tr>
<tr><td>311</td><td>Have you used a condom at your last sexual encounter?</td><td colspan="3">1. Yes
2. No</td></tr>
<tr><td>312</td><td>Did you discus about using condoms and safe sex with your partner</td><td colspan="3">1.Yes
2. No
3.Partly</td></tr>
<tr><td rowspan="2">313</td><td rowspan="2">What is/are the HIV serostatus of the person/s with whom you had sex in the last three months? [interviewer will check for the Q 303 response]</td><td>For one partner</td><td colspan="2">For more than one partner/s</td></tr>
<tr><td>1.negative
2. positive
3. not known</td><td>with condom
1.negative/s
2. positive
3. don’t known [more than one answer are possible]</td><td>without condom
1.negative/s
2.positive/s
3. don’t known [more than one answer are possible]</td></tr>
<tr><td>314</td><td>Have you disclosed your serostatus to your partner</td><td colspan="3">1.Yes
2.No
3.partly</td></tr>
</table>

401	**Safer sex beliefs and Medical Factors**

IV. Safer sex beliefs [Safer sex knowledge and attitudes concerning safer sex effectiveness pleasure.

A	**Safer sex knowledge**	**Strongly agree**	**Agree**	**Don't know**	**Disagree**	**Strongly disagree**
1	Getting infected with another strain of HIV would cause little additional harm to my health (R)	1	2	3	4	5
2	It would be more difficult to treat my HIV disease if I got another strain of HIV	1	2	3	4	5
3	If my viral load is very low, I do not need to be concerned about infecting a person I have sex without using a condom (R).	1	2	3	4	5
4	Getting infected with a sexually transmitted disease would cause little additional harm to my health (R).	1	2	3	4	5
B	**Safer sex effectiveness**					
1	Condom as protection is an effective method for preventing the spread of HIV and other sexually transmitted disease	1	2	3	4	5
2	Condoms is an excellent means of protection from HIV infection	1	2	3	4	5
3	Condom as protection is unreliable (R).	1	2	3	4	5
C	**Safer sex pleasure**					
1	The use of condoms as protection makes sex more stimulating;	1	2	3	4	5
2	Condoms as protection decrease(ruin) the sex act (R)	1	2	3	4	5
3	Condoms as protection is uncomfortable for both partners (R)	1	2	3	4	5
	Medical related questions					
1	There is reduced concern to practice safe sex because of ARV Rx	**1. Yes 2 . No**				
2	The patient current/recent CD4 count?	_____				
3	Is there any missing of your tablets of medication in the last three months	1 Yes 2.No				
4	Respondents HIV/AIDS status at the time of data collection? ([**data collector assessed any sign and symptoms by clinical staging and other related disease conditions reported by the patient)**	1.Symptomatic 2. Asymptomatic				

V. Questions assessing, general self efficacy. I will read for you the following questions respond to each of them as you feel and perceive them

501	General self efficacy	Strongly disagree	disagree	agree	Strongly agree
1	I can always manage to solve difficult problems if I try hard enough	1	2	3	4
2	It is easy for me to stick to my aims and accomplish my goals	1	2	3	4
3	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
4	If I am in trouble, I can usually think of a solution	1	2	3	4

VI. Social support. I will read for you the following questions respond to each of them as you feel and perceive them

502	General social support	Strongly disagree	disagree	agree	Strongly agree
1	There are people I know will help me If I really need them.	1	2	3	4
2	I have close relationships that make me feel good.	1	2	3	4
3	I lack a feeling of intimacy with another person(R)	1	2	3	4
4	I have someone to talk to about decisions in my life.	1	2	3	4
5	There are people who value my skills and abilities.	1	2	3	4

VI. **Self efficacy to use condom. I will read for you the following questions respond to each of them as you feel and perceive them**

503	Self efficacy to use condom	Strongly agree	agree	Don't know	disagree	Strongly disagree
1	I feel confident in my ability to discuss condom usage with any partner I might have.	1	2	3	4	5
2	I feel confident in my ability to suggest using condoms with a new partner.	1	2	3	4	5

3	If I were to suggest using a condom to a partner, I would feel afraid that he or she would reject me. (R)	1	2	3	4	5
4	I feel confident I could gracefully wear and remove condom when we have intercourse	1	2	3	4	5
5	I feel confident that I would remember to use a condom even after I have been drinking.	1	2	3	4	5

VII. Question assessing the enacted and perceived stigma among PLWHA

Sr. No	**Questions for stigma(enacted and perceived)**	**Yes_____1 NO_____0**
601	**Enacted type of stigma in their life**	
1	Because you are HIV positive Someone refused to eat with you	
2	Because you are HIV positive Someone refused to hug you	
3	Because you are HIV positive children kept away from you	
4	Because you are HIV positive you had to move from your place	
5	Because you are HIV positive you beaten up	
6	Because you are HIV positive you verbally threatened	
7	Because you are HIV positive you lost a friend	
8	Because you are HIV positive you heard AIDS joke	
9	Because you are HIV positive , you shut out by a family member	
602	**Perceived stigma in the last three months**	**Yes_____1 NO_____0**
1	Because you are HIV positive you felt others were uncomfortable	
2	Because you are HIV positive you felt people avoided you	
3	Because you are HIV positive you feared family rejection	

4	Because you are HIV positive you feared losing friends	
5	Because you are HIV positive you felt blamed by others	
6	Because of you are HIV positive you thought HIV was punishment	
7	Because of you are HIV positive you felt ashamed	

Part IX. Information on Substance use among the HIV positives ART attendants

701	During the last three month have you ever drunk alcohol?	1=Yes 2=No				
702	if you answer is ,**yes,** how many times per week have you consumed in the last week	1.once per week 2.twice per week 3.three times per week 4.four times per week 5.five times per week 6.times per week 7.seven times per week 8.above seven times per week				
703	Which of the following substances have you tried, if any?	1=once or less per week all 2=twice per week 3=three times/week 4.Four times per week 5.Above four times per week				
704	Khat	1	2	3	4	5
705	Smoking	1	2	3	4	5
706	Hashish	1	2	3	4	5
707	Cocaine	1	2	3	4	5
708	Other(specify)_____	1	2	3	4	5

Questionnaire: (Amharic version)

1. Questionnaire for Quantitative Study on Risky Sexual practice among PLWHA

ተ/ቁ	ጥያቄዎች (Questions)	መልስ (Response)
01	የጤና ተቋሙ ስም	
02	መጠይቁ የተሞላበት ቀን	
03	መጠይቁን የሞላ ሰዉ ስም	
04	የተቆጣጠረ ስምና ፊርማ	
05	ቀን	
06	ኮድ(Code)	

<u>ክፍል አንድ:</u> ስለማህበራዊና ዲሞግራፊያዊ መረጃዎች (Socio Demographic information)

ተ/ቁ	ጥያቄዎች	መልስ (Response)
101	ዕድመዎት ስንት ነው?	_____ በዓመት ይጻፉ
102	የተጠያቂው ፆታ?	ወንድ ---------- 1 ሴት ---------- 2
103	የትምህርት ደረጃ?	ማንበብና መጻፍ የማይችል ---------1 ማንበብና መጻፍ የሚችል ----------2 የትምህርት ደረጃ በክፍል _____
104	ሐይማኖትዎ ምንድን ነው?	ኦርቶዶክስ ----------1 ሙስሊም ----------2 ፕሮቴስታንት ----------3 ካቶሊክ ----------4 ሌላ (ይጠቀስ) ----------88
105	ብሔርዎት ምንድን ነው?	ኦሮሞ ---------- 1 አማራ ----------2 ትግሬ ---------- 3 ጉራጌ ----------4 ሌላ (ይጠቀስ) ----------88
106	በአሁኑ ጊዜ ሥራዎ ምንድን ነው?	የመንግሥት ሠራተኛ ----1 የግል ተቀጣሪ ----------2 የቤት እመቤት ----------3 ቀን ሠራተኛ ----------4 የቤት ውስጥ አገልጋይ ---5 ነጋዴ ----------6 የቡናቤት ሠራተኛ----------7 ሌላ (ይጠቀስ) ----------88
107	አማካይ የወር ገቢዎ ስንት ነው?	_____ ብር ምንም ገቢ የለዉም ---------2 አላውቅም ----------3

<u>ክፍል ሁለት፡</u> የኤች አይ ቪ ታካሚዎች ኤች አይ ቪ በደማቸዉ ውስጥ ከመገኘቱ በፍት ወሲባዊ ህይወታቸዉ ምን እንደሚመስልና የፀረ ኤች አይ ቪ ሕክምና አጀማመርና ጊዜን በተመለከተ።

ተ/ቁ	ጥያቄዎች (Questions)	መልስ (Response)
201	ለመጀመሪያ ጊዜ HIV ደምዎት ውስጥ ሲገኝ የት ተመረመሩ?	በዚሁ ጤና ተቋም ---------- 1 በሌላ ጤና ተቋም ----------2 ሌላ (ይጠቀስ)_____88
202	በየትኛው የምክርና ምርመራ አገልግሎት ተመረመሩ?	VCT----------1 PICHT----------2 ሌላ (ይጠቀስ)----------88
203	ኤች አይ ቪ በደሚዎት ዉስጥ መገኘቱን ካወቁ ስንት ጊዜ ሆነዎት?	_____ (በወር, በዓመት)
204	ፀረ ኤች አይ ቪ ከጀመሩ ስንት ጊዜ ሆነዎት?	_____ (በወር, በዓመት)
205	ኤች አይ ቪ ፖዝቲቭ መሆንዎን ሳያውቁ የጋብቻ ሁኔታ እንዴት ነበር?	ያገባ ----------1 ያላገባ----------2 የተፋታ ----------3 የተለያዩ----------4 ባል የሞተባት----------5 ሌላ (ይጠቀስ)----------88
206	ኤች አይ ቪ ፖዝቲቭ መሆንዎን ሳያውቁ በፊት ምን ያህል የወሲብ ተጓዳኛ ነበርዎት?	አንድ ----------1 ሁለት ----------2 ሦስትና ከዚያ በላይ ---------3
207	ኤች አይ ቪ ፖዝቲቭ መሆንዎን ሳያውቁ በፊት ኮንዶም ይጠቀሙ ነበር?	አዎ----------1 አልጠቀምም----------2
208	ኤች ኤይ ቪ ደሞዎት ዉስጥ ሳይገኝ በፊት ኮንዶም ምን ያህል ይጠቀሙ ነበር?	ሁል ጊዜ ----------.....--1 አብዛኛውን ጊዜ (ከግማሽ በላየይ)---2 አልፎ አልፎ (ግማሽ)----------3 ጥቅት ግዜ----------4 በጣም ጥቂት ጊዜ ----------5

<u>ክፍል 3</u>፡ የፀረ ኤች አይ ቪ ኤድስ ክትትል የሚያደርጉት የወሲብ ህይወታቸዉ የምመለከት መጠይቆች።

ተ/ቁ	ጥያቄዎች (Questions)	መልስ (Response)
301	በአሁኑ ጊዜ የጋብቻ ሁኔታ ምንድን ነው?	ያገባ ----------1 ያላገባ----------2 የተፋታ ----------3 የተለያዩ----------4 ባል የሞተባት----------5 ሌላ(ይጠቀስ)----------88
302	ባለፉት ሶስት ወራት ውስጥ ከምን ያህል ሰዎች ጋር የግብረ-ስጋ ግንኙነት ፈጽመዉ ያዉቃሉ?	አንድ ----------1 ሁለት ----------2 ሦስት ----------3 አራት ----------4 አምስት----------5 ከአምስት በላይ----------6
303	ለጥያቄ 302 መልስዎ <u>**አንድ**</u> ከሆነ ከምን ዓይነት ጓደኛ ጋር ነው? **መደበኛ**- (ባል፣ምስት፣ አብሮ የቆዩ የሴት/የወንድ ጓደኛ) **አጋጣሚ** - (ከመደበኛ ተጋዳኝ ዉጪ የተፈፀመ ወሲባዊ ግንኙነት)	መደበኛ ጓደኛ ----------1 መደበኛያልሆነ----------2

304	ለጥያቄ 302 መልስዎ ***<u>ሁለትና ከዛ በላይ</u>*** ከሆነ የተጓደኝዎ ዓይነትት ይገለጽ?	መደበኛ የወሲብ ተጓዳኝ _____ ድንገተኛ የወሲብ ተጓደኝ _____	
305	ከአሁኑ መደበኛ የወሲብ ተጓዳኝዎት ጋር ምን ያህል ጊዜ ቆይቷል?	_____ (ወር, ዓመት)	
306	የፀረ HIV መድኃኒት መጠቀም ከጀመሩ ወድህ የወሲብ ፍላጐትዎ እንዴት ነዉ?	የወሲብ ፍላጐት ከበፊቱ ጨምሯል----------1 የወሲብ ፍላጐት ከበፊቱ ጋር አንድ ነው----2 የወሲብ ፍላጐት ከበፊቱ ቀንሷል ----------3	
307	ባለፉት 3 ወራት በነበሮዎት ግብረስጋ ግንኙነት ዉስጥ ይጠቀሙ ነበር	አዎ----------1 አይደለም----------2	2 ከሆነ ወደ ጥያቀ 309
308	መልሶዎት 1 ከሆነ አጠቃቀምዎት እንደት ነበር?	ሁል ጊዜ ----------1 አብዛኛውን ጊዜ --------2 አልፎ አልፎ ----------3 ጥቂት ጊዜ----------4 በጣምጥቂት ጊዜ -------5	1 ከሆነ ወደ ጥያቀ 312
309	ለጥያቀ **308 መልስዎ <u>2፣3፡4 ወይም 5</u> ከሆነ** ከየትኛው የወሲብ ተጓዳኝ ጋር ኮንዶም አልተጠቀሙም? **(ከአንድ ጓደኛ በላይ ላለው ከአንድ በላይ መልስ ይቻላል)**	መደበኛ የወሲብ ተጓዳኝ ጋር ----------1 ድንገተኛ የወሲብ ተጓዳኝ ጋር ----------2 ሁለቱም----------3	

310	ኮንዶም ያልተጠቀሙበት ምክንያት/ቶች ምንድን ነው/ናቸዉ? **(ከአንድ በላይ መልሶች ይቻላል)**	1. ተጓዳኜ ኮንዶም መጠቀም ስላልፈለገ/ች 2. ተጓዳኜ ፖዝቲቭ ስለሆነ/ች 3. ኮንዶም መጠቀም የወሲብ ስሜትን ስለሚቀይር 4. ኮንዶም ስላላገኘን 5. ተጓዳኜ ኮንዶም እንድጠቀም(ንጠቀም) ለመጠየቅ ስለተሰቀቀሁ/ፈራሁኝ 6. ተጓዳኝ የአባለዘር በሽታ የለውም ብዬ ስላሰብኩኝ 7. ጠጥተን ስለነበር ኮንዶም ለመጠቀም አላሰብንም 8. ልጅ እንዲኖረኝ/ እንዲኖረውን/ ስለፈለገ (ስለፈለኩኝ) ፈለግን 9. ከዚህ በኋላ ኮንዶም ኤች አይ ቪን በይበልጥ እንደሚከላከል ስለማላውቅ 10 ኮንዶም በሐይማኖት ተቀባይነት ስለለው 11.አንዱ ስለተያዝኩኝ ኮንዶም አልተጠቀምኩም 88.ሌላ ካለ ይጠቀስ ----------
311	በመጨረሻ የወሲብ ግንኙነትዎ ጊዜ ኮንዶም ተጠቅመዋል?	አዎ----------1 አልተጠቀምኩም----------2
312	ስለ ኮንዶምና ጥንቃቄ ስለተሞላበት ከወሲብ ተጓደኛዎ ጋር ይወያያሉ?	አዎ ----------1 አንወያይም ----------2 ከሁለት መልስ በላይ ይቻላል

313	በባለፉት ሶስት ወራት ውስጥ የወሲብ ግንኙነት አብረዉ የፈጸመቡትን ሰው HIV ሁኔታ ምንድን ነዉ?	ለአንድ ተጓዳኝ ላላቸዉ	ከአንድ በላይ ተጓዳኝ ያላቸዉ	
			ያለኮንዶም	በኮንዶም
		ፖዝቲቭ-- 1 ነጋቲቭ -- 2 አላዉቅም--3	ፖዝቲቭ-- 1 ነጋቲቭ - 2 አላዉቅም--3 **ከሁለት መልስ በላይ ይቻላል**	ፖዝቲቭ-- 1 ነጋቲቭ - 2 አላዉቅም--3 **ከሁለት መልስ በላይ ይቻላል**

3115	ቫይረሱ በደምዎት ውስጥ መኖሩን ለ ወሲብ ተጓዳኝዎ ገልፀው ነበር?	አዎ ----------1 አይደለም ----------2 ከሁለት መልስ በላይ ይቻላል

<u>ክፈል 4</u>፡ ጥንቃቄ የተሞላበት ወሲባዊ ግንኙነት ላይ ያላቸዉ አመለካከት እና የጤና ሁኔታን የተመለከተ መጠይቅ

401	Safer sex belief & Medical Factors					
A	safer sex knowledge	በጣም እስማማለሁ	እስማማለሁ	አላውቅም	አልስማማም	በጣም አልስማማም
1	በሌላ HIV ዝርያ መጠቃት በእረሶዎ ጤና ላይ ሚያመጣው ጉዳት ጥቂት ነው(R)	1	2	3	4	5
2	በተጨማሪ HIVኤች አይ ቪ ዝርያ መጠቃት ሕክምናዎትን አስቸጋሪ ያደርገዋል	1	2	3	4	5
3	በደምዎት ውስጥ ያለው ቫይረስ ብዛት በጣም ትንሽ ከሆነ ያለ ኮንዶም ወሲብ የፈፀሙበትን ሰው ኤች አይ ቪ ይይዛል ብሎ መጨነቅ አያስፈልግም(R)	1	2	3	4	5
4	በአባለዘር በሽታ መጠቃት በጤናዎት ላይ የሚያመጣው ጉዳት ጥቂት ነው	1	2	3	4	5
B	Safer sex effectiveness					
1	ኤች አይ ቪ ና ለላ አባለዘር በሽታን ለመከላከል ኮንዶም አስተማማኝ ዘዴ ነው	1	2	3	4	5
2	ኮንዶም ኤች አይ ቪን ለመከላከል እጅግ በጣም ጥሩ የሆነ ዘዴ ነው	1	2	3	4	5
3	የኮንዶም መከላከያነት አስተማማኝ አይደለም(R)	1	2	3	4	5
C	Safer sex pleasure					
1	በወሲብ ግንኙነት ጊዜ ኮንዶም መጠቀም ያነቃቃል	1	2	3	4	5
2	በወሲብ ግንኙነት ጊዜ ኮንዶም መጠቀም ወሲባዊ ስሜትን ይቀንሳል(R)	1	2	3	4	5
3	በወሲብ ግንኙነት ጊዜ ኮንዶም መጠቀም ለሁለቱም ተጓዳኞች ምቹ አይደለም(R)	1	2	3	4	5
D	Medical factor					
1	የፀረ ኤች አይ ቪ መድኃኒት በመምጣቱ ምክንያት ጥንቃቄ የተሞላበት ወሲባዊ ግንኙነት አመለካከት ቀንሷል?	1.አዎ	2. አይደለም			
2	ባለፉት 3 ወራት የፀረ HIV መድኃኒትዎን አንድም ሳያቋረጡ ይጠቀሙ ነበር?	1.አዎ	2. አይደለም			
3	በአሁኑ (ቅረብ) ጊዜ የ CD4 ብዛት ስንት ነው? (also bechecked from the card)					
4	በአሁኑ ጊዜ የበሽተኛው **ኤች አይ ቪ ኤድስ** ሁኔታ ምን ይመስላል	1.ምልክት	2.ምልክት			

		ይታይበታል	አይታይበት

ክፍል 5.

501 የምከተሉትን ጥቀዎች በጣም አልስማም፣አልስማም፣እስማማለዉ ወይም በጠም አልስማም ብለዉይመልሱልኝ

501	**አጠቃላይ በራስ መተማን ብቃትን በተመለከተ**	በጣም አልስማማም	አልስማማም	እስማማለሁ	በጣም እስማማለሁ
1	ጠንክራዉ ከሠሩ አስቸጋሪ ነገሮችን መቅረፍ ይችላሉ	1	2	3	4
2	በአላማየዎት መንገዝና ግብዎትን መምታት ለእርሶ ቀላል ነው	1	2	3	4
3	ችግር ቢያጋጥሞት እንዴት እንደምወጡ ስለሚያዉቁ መረጋጋት ይችላሉ	1	2	3	4
4	ችግር ውስጥ በምሆንበት ሰዓት ብዙን ጊዜ ለመፍትሄዎቹ ያስባሉ	1	2	3	4

502.የምከተሉትን ጥቀዎችን በጣም አልስማም፣አልስማም፣እስማማለዉ ወይም በጠም አስማማለዉ ብለዉ ይመልሱልኝ

502	Social support questions	በጣም አልስማማም	አልስማማም	እስማማለሁ	በጣም እስማማለሁ
1	ስያስፈልግዎት ሊረዱዎ የሚችሉ የምያዉቁት ሰዎች አሉዎት	1	2	3	4
2	ጥሩ ስሜት እንዲሰማዎት የምየደርግ ከሰዎችጋረ ጥሩ ቅርርብ አለዎት	1	2	3	4
3	ከሌሎች ሰዎች ጋር ጥሩ ቅርርብ ማድረግ ከብደዉታል(R)	1	2	3	4
4	ስለ ሕይወት ውሳነዎ የማወያዩ ሰው አለዎት	1	2	3	4
5	ያለዎትን ዕውቀትና ጥበብ ዋጋ የሚሰጡ ሰዎች አሉ	1	2	3	4

503.የምከተሉትን ጥቀሶች በጣም አስማማለሁ፣ እስማማለዉ አላዉቅም አልስማም፣ ወይም በጠም አልስማም ብለዉ ይመልሱልኝ

503	ኮንዶም የመጠቀም ብቃትን በተመለከተ	በጣም እስማማለ	እስማማለ ሁ	አላውቅም	አልስማማ	በጣም አልስማማ
1	ከማንኛውም ተጓዳኝ ጋር ስለ ኮንዶም ለመወያየት እርግጠኛ እንደሆን ይሰማዎታል	1	2	3	4	5
2	ለአድስ ተጓዳኝ ኮንዶም እንድጠቀም ለማሳሰብ ድፍረት ይሰማዎታል	1	2	3	4	5
3	ለተጓዳኝዎት ኮንዶም እንድጠቀሙ ባሳስቡ ኖሮ እንዳይተዎ/ትተዎትይፈሩ ነበር(ሪ)	1	2	3	4	5
4	ግብረ-ስጋ ግንኙነት ስፈጽሙ ኮንዶሙን ለማውለቅና ለማስገባት ብቁ ኖዎት	1	2	3	4	5
5	ጠጥቶም ቢሆን ኮንዶምን ለመጠቀም እንደምያስታውሱ እርግጠኛ ኖዎት	1	2	3	4	5

<u>ክፍል ስድስት</u> የኤች አይ ቪ ታካሚዎች ያጋጠማቸውና የሚያስቡት አድሎዎች::

601 የምከተሉትን ጥያቀዎች አዎ ዌም አይደለም በማለት ይመልሱልኝ

ቁጥር	ያጋጠማቸውና የሚያስቡት አድሎዎች (since testing positive)	
601	ኤች አይ ቪ.ፓዝቲቭ ከሆኑ ወድህ ያጋጠማቸዉ አድሎዎች	1 አዎ 0 አይደለም
1	ኤች አይ ቪ.ፓዝቲቭ በመሆኖዎ ከእርስዎ ጋር ለመመገብ ፍቃደኛ ያልሆኑ ነበሩ	
2	ኤች አይ ቪ.ፓዝቲቭ በመሆንዎ እርሶን ማቀፍ የማይፈልጉ ሰዎች ነበሩ	
3	ኤች አይ ቪ.ፓዝቲቭ በመሆኖዎ ከእርስዎ የሚሸሹ ልጆች አሉ	
4	ኤች አይ ቪ.ፓዝቲቭ መሆኖዎ ከምኖሩበት ቦታ ሸሽተዋል	
5	ኤች አይ ቪ.ፓዝቲቭ በመሆኖዎ ምት ደሪሰዉበት ያውቃሉ	
6	ኤች አይ ቪ.ፓዝቲቭ በመሆኖዎ ስድብ ደርሶብዎት ያውቃል	
7	ኤች አይ ቪ.ፓዝቲቭ በመሆኖዎ ጓደኛዎትን አጥተዋል	
8	ኤች አይ ቪ.ፓዝቲቭ በመሆኖዎ ስለ ኤድስ ሲቀለድብዎት ሰምተዋል	
9	ኤች አይ ቪ.ፓዝቲቭ በመሆኖዎ በቤተሰብ አባላት ተገለዋል	

602	**Perceived stigma in the last three months**	1 አዎ 0 አይደለም
1	ኤች አይ ቪ ፖዝቲቭ በመሆኖዎ ለሌሎች ሰዎች ምኞት የማይሰማቸዉ ይመስለዉታል	
2	ኤች አይ ቪ ፖዝቲቭ በመሆኖዎ በሌሎች ሰዎች የሚጠሉ ይመስሎታል	
3	ኤች አይ ቪ ፖዝቲቭ በመሆኖዎ ቤተሰብ እንዳያገሉ ይሰጋሉ	
4	ኤች አይ ቪ ፖዝቲቭ በመሆኖዎ ጓደኞዎትን አጣለዉ ብለው ይሰጋሉ	
5	ኤች አይ ቪ ፖዝቲቭ በመሆኖዎ በሰዎች የሚነቀፉ ይመስሎታል	
6	ኤች አይ ቪ ፖዝቲቭ መሆኖዎን ቁጣ(ቅጣት) ነው ብለው ያስባሉ	
7	ኤች አይ ቪ ፖዝቲቭ በመሆኖዎ ሐፍረት ይሰማዎታል?	

<u>ክፍል ሰባት</u>፡ አልኮል እና እጽ አጠቃቀምን በተመለከተ የተዘጋጁ መጠይቆች።

ቁጥር	ጥያቄ	መልስ				
701	ባለፈት 3 ወራት ውስጥ አልኮል ተጠቅመው ያውቃሉ?	አዎ 1	አይደለም 2			
702	**አዎ** ከሆነ በሳምንት ምን ያህል ጊዜ ይጠቀማሉ?	አንድ 1 አራት 4 ሰባትና ከዚያ በላይ 7	ሁለት 2 አምስት 5	ሦስት 3 ስድስት 6		
703	የትኛውን **እጽ** (እሰብስታንስ) ተጠቅመው ያሉቃሉ?	1 አንዴ በሳምንት 2 ሁለቴ በሳምን 3 ሦስቴ በሳምንት 4 አራቴበሳምንት 5 ከአምስት እና ከዚያ በላይ				
704	ጫት	1	2	3	4	5
705	ሲጋራ	1	2	3	4	5
706	ሀሺሽ (Hashish)	1	2	3	4	5
707	ኮኬይን (Cocaine)	1	2	3	4	5
708	ሸሻ(Shisha)	1	2	3	5	5
709	ሌለ(ይጠቀስ)-------	1	2	3	4	5

Annex 6.Guide for in-depth Interview

Part I- Socio demographic information

1. Age in completed years?
2. Sex of the respondent?
3. Marital status?
4. What is your current occupation?
5. What is your Religion?
6. What is the highest educational level?

Part II - Information on sexual behavior

1. What was your sexual practice before you became infected with HIV?

   Prob for,

   a. *Condom use and how frequent to use condom in last six month,*
   b. *Sexual partner and kinds of sexual partner*

2. How do you explain your sexual desire after you tested positive for HIV/AIDS?

   a. *Prob for what the sexual desire look like as to (decreased, increased, or no change*

3. In your last six month sexual practice, did you use condom?
4. If you used, how frequent you used?

   a. *Prob for the frequency as to almost no, some time, almost always, always*
   b. *If you are not used frequently, what are the reasons for not using frequently and with whom she/he did not use condom*?

   If she/he didn't use at all,

   - *Prob the reasons for not using condom at all,*

5. Have you disclosed your status to your sexual partner?

   - *Prob for reasons if not disclose and what was the reaction of the partner if disclosed?*

6. What do you think are the reasons PLWHA do not use condom always?
7. Any question and other idea you want to add?

Thank you for your cooperation

Declaration

I, the undersigned, declare that this is my original work and has not been presented in this and any other university and all sources of materials used for this thesis have been duly acknowledged.

Name: **Yadeta Dessie**

Signature: _____

Date: **June 24, 2009**

Place: **Addis Ababa University**

This thesis has been submitted for examination with my approval as University advisor

Dr.Gail Davey (MBBChir, MSc., MD)

School of Public Health

Addis Ababa University

Signature_____

Date_____

Place: **Addis Ababa University**