ADDIS ABABA UNIVERSITY

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Assessment of factors affecting willingness to HIV counselling and testing among patients presenting with the conventional Sexually Transmitted Infections (STIs) in Addis Ababa.

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Declaration

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

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

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Acronyms

AAU	Addis Ababa University
AIDS	Acquired Immunodeficiency Syndrome
AOR	Adjusted Odds Ratio
ART	Anti-retroviral Therapy
BSS	Behavioral Surveillance Survey
CDC	Centers for Disease Control
CI	Confidence Interval
CSW	Commercial Sex Workers
CT	Counselling and Testing
DCH	Department of Community Health
DHS	Demographic and Health Survey
EPHA	Ethiopian Public Health Association
GUS	Genital Ulcers Disease Syndrome
HIV	Human Immunodeficiency Virus
HIV CT	HIV counseling and testing
HSV2	Herpes Simplex Virus type 2
IEC	Information, Education and Communication
LAPS	Lower Abdominal Pain Syndrome
MF	Medical Faculty
MOH	Ministry of Health
MTCT	Mother – to – child transmission
OPD	Out Patient Department
OR	Odds Ratio
PCR	Polymerase Chain Reaction
PHI	Primary HIV Infection
PIHCT	Provider Initiated HIV Counselling and Testing
PLWHA	People Living With HIV/AIDS
RNA	Ribonucleic Acid
SPSS	Statistical Package for Social Sciences
STI	Sexually Transmitted Infections

UDS	Urethral Discharge Syndrome
UNAIDS	Joint United Nations Program on HIV/AIDS
VCT	Voluntary Counselling and Testing
VDS	Vaginal Discharge Syndrome
WHO	World Health Organization

Abstract

There is ample scientific evidence that a person with an untreated STI, particularly those inducing ulcers or discharge, is at an increased risk of passing on or acquiring HIV during sexual intercourse. HIV CT for STI cases is thus an important tool in the public health response to HIV/AIDS. A descriptive, cross-sectional study, involving 422 STI cases, was conducted to assess factors affecting willingness towards HIV CT among patients presenting with the conventional STIs in Addis Ababa, from December 2006 to April 2007. STI patients were consecutively selected during an outpatient visit in ten government health centers which were purposively selected mainly on the basis of their high STI case load. A pre-tested, interviewer administered, structured questionnaire was applied for data collection. OR with 95% CI was used to measure the degree of association between associated factors and willingness towards HIV CT and, logistic regression analysis was done to identify predictors of willingness towards HIV CT.

Overall, 73.9% of STI patients said that they would be willing to undergo HIV CT at the time or 3 months after their STI diagnosis. Furthermore, 97.4% and 71.8% of STI patients had heard about HIV/AIDS and STIs, respectively. Nearly 93% of STI patients knew at least one prevention method, and 61.2% identified all the three major methods for preventing HIV/AIDS. Overall, 43.8% of the STI patients had at least one misconception, and 38% had comprehensive knowledge about HIV/AIDS. Moreover, 74% of STI patients said that they never used condoms during the previous 12 months. The proportion of those who reported ever had HIV test was 45%. More than half (61.5%) of the STI patients reported 'no or low chance' of acquiring HIV and the main reason they gave was they trusted their partner. One or more stigmatizing attitudes also prevailed in 33.3% of the STI patients. Ever tested for HIV, being in the age group of 15-34 years, and perceiving small or moderate chance of contracting the HIV infection were found out to be significantly associated with willingness towards HIV CT.

The findings of this study indicated the need for promotion and expansion of sustainable provider initiated HIV CT with subsequent follow up to STI patients as part of a continuum of services and support, and intensive patient-centered risk reduction counseling for STI cases during the initial visit to health care facilities.

I. Introduction

1.1: Background

1.1.1: Global and Ethiopian HIV/AIDS Situation

The HIV pandemic continues to spread with about 39.5 million people living with HIV worldwide (1). Globally, approximately 4.3 million new infections are believed to have occurred in the year 2006, corresponding to about 11,800 new infections per day. About 2.9 million people have died during the same period; and 380,000 of those were children.

Sub-Saharan Africa has just over 10% of the world's population, but is home to more than 60% of all people living with HIV. In 2006, almost two thirds (63%) of all persons infected with HIV are living in sub-Saharan Africa—24.7 million [21.8 million–27.7 million]. An estimated 2.8 million [2.4 million–3.2 million] adults and children became infected with HIV in 2006, more than in all other regions of the world combined. The 2.1 million [1.8 million–2.4 million] AIDS deaths in sub-Saharan Africa represent 72% of global AIDS deaths (1).

Ethiopia is one of the Sub-Saharan countries severely affected by the HIV/AIDS pandemic. Since the first two reported AIDS cases in 1986, the disease has spread at an alarming rate throughout the country (2). According to AIDS in Ethiopia Sixth Report 2006 (3), the overall modeled and adjusted (adjusted for differences in regional urban/rural population sizes) national HIV prevalence in 2005 was 3.5%; 3 % among males and 4% among females. The estimated prevalence in urban areas was 10.5% (9.1% among males and 11.9% among females) and 1.9% in rural areas (1.7% among males and 2.2% among females). The HIV prevalence rate for Addis Ababa remains high (where it has remained at 14%–16% since the mid-1990s) (1). Almost 91% of the reported AIDS

cases in adults are among the age group of 15 and 49 years, while ANC clients in the age group 15-24 years had the highest prevalence of 5.6% of all age groups, indicating early infection.

In 2005, it was estimated that a total of 1,320,000 people were living with HIV/AIDS. Of the total, 634,000 were living in rural areas and 686,000 in urban areas. In the age group 15-29 years, there were more women living with HIV/AIDS than men; in the age group 30+ years, there were more men living with HIV/AIDS than women. It was estimated that in 2005, a total of 137,500 new AIDS cases, 128, 900 new HIV infections (353 a day) including 30,300 HIV positive births, and 134,500 (368 a day) AIDS deaths (including 20,900 in children [<15 years]) occurred. In 2005, it was estimated that there were a total of 744,100 AIDS orphans ages 0-17; 529,800 were maternal, 464,500 paternal, and 250,200 dual orphans. The estimated total number of persons requiring ART in 2005 was 277,800 (including 43,100 children). AIDS accounted for an estimated 34% of all young adult deaths 15-49 in Ethiopia and 66.3% of all young adult deaths 15-49 in urban Ethiopia (3).

In Ethiopia, the urban prevalence appeared to have stabilized in the period 1996 to 2000 and has been slowly and gradually declining since 2001.The rural epidemic stabilized after reaching its highest level during 1999-2001. The overall HIV prevalence for Ethiopia has stabilized with the number of people newly infected and dying being almost equal. The overall HIV incidence estimate for Ethiopia in 2005 was estimated at 0.26% and is projected to remain stable until 2010 (3).

1.1.2: Global and Ethiopian conventional sexually transmitted infections

Sexually transmitted infections (STIs) include not only the common classical STIs (gonorrhea, syphilis, chancroid and lymphogranuloma venereum) but also about 20 infections caused by bacterial, viral, parasitic, protozoal and fungal agents. They are major public health problems in all countries, especially in developing countries, where access to adequate diagnostic and treatment facilities are very limited or non-existent. Despite the ability to cure many of the classical sexually transmitted Infections (STIs), they continue worldwide to be a major public health problem, causing serious health,

economic and social consequences. WHO estimated that globally as many as 340 million new cases of curable STIs (gonorrhea, syphilis, chlamydial infection and trichomoniasis) occurred in 1999 in men and women aged 15-49 years, of which 69 million occurred in Sub-Saharan African Countries (1). Thus, on average, an estimated 931, 500 people are infected everyday with STIs.

In developing countries, with three-quarters of the world's population and 90% of the world's STIs, such factors as high population growth (especially in adolescent and young-adult age groups), rural-to-urban migration, wars, and poverty create exceptional vulnerability to disease resulting from risky sexual behaviors (4).

In Ethiopia, STIs have increasingly been recognized among certain risk groups, such as commercial sex workers (5, 6, 7). Inspite of the high prevalence of STIs in the country, relatively little epidemiological research has been carried out on their prevalence and incidence. The problem of reporting STIs in Ethiopia is generally thought to be similar to those of other developing countries. During a national review meeting on STIs in 2003, a total of 451, 686 cases were reported from all regions except SNNPR for the period 1990 – 1994 E.C (1997/98 – 2001/02 G.C). In addition, in 1995 E.C (2002/03 G.C) the Integrated Disease Surveillance Team of the Ministry of Health compiled 27, 947 STI cases from all the regions in its routine quarterly report of 2002/03 (8). Record review of four government health centers by the principal investigator at the inception of this study in Addis Ababa also revealed that, a total of 326 STI cases (75 Urethral Discharge, 88 Vaginal Discharge, 146 Genital Ulcer, and 17 Other Syndromes) and other 108 STI cases were seen from January 2006 to March 2006 at Kazanchis and Woreda 23 health centers, respectively. Additional 78 STI cases were also seen at Arada health centre, while 43 STI cases were seen at Teklehaimanot health centre from December 2005 to February 2006. Nevertheless, STIs are grossly underreported in Ethiopia, since these infections have traditionally been stigmatized, many infections are asymptomatic and diagnostic and treatment facilities are scarce (9). As a result, many STI patients seek treatment elsewhere, including from traditional healers, private pharmacists, drug vendors, shops

and market places, none of which report to the Ministry of Health (9, 10). Since it is a known fact that the presence of other STIs increases the likelihood of HIV transmission and/or acquisition, the advent of HIV/AIDS has led to a new push to treat and prevent STIs in combination with CT for HIV.

1.1.3: HIV Counseling and Testing

As access to antiretroviral treatment is being scaled up in low and middle-income countries, including Ethiopia, there is a critical opportunity to simultaneously expand access to HIV prevention, which continues to be the mainstay of the response to the HIV epidemic. Without effective HIV prevention, there will be an ever-increasing number of people who will require HIV treatment. Among the interventions, which play a pivotal role both in treatment and in prevention, HIV CT stands out to be of paramount importance (11).

Historically, HIV testing has been promoted under the assumption that it facilitates HIV/AIDS prevention and care services. Over the years, HIV testing has been linked with counseling and has developed as an important entry point for a variety of program activities, including behavior change initiatives, interventions to prevent MTCT, and early treatment of opportunistic infections and HIV-related disease - all important program goals. Furthermore, the integration of HIV CT services into more comprehensive programs of HIV prevention and care helps to avoid narrowing the policy choices for supporting voluntary counseling and testing programs. However, the implementation of HIV CT programs also raises many challenges, including the need to respect individual choices and rights and to ensure access to care and support services for those who tested positive (12).

The current status of HIV Counseling and testing service remains poor; in low and middle-income countries, only 10 per cent of those who need HIV CT having access to it (11). Even in settings in which HIV CT is routinely offered, such as programmmes for prevention of mother-to-child transmission, the number of people who avail themselves of these services remain to be low in many countries. The reality is that stigma and discrimination continue to deter people from having HIV test. Moreover, it is estimated

that 95% of people who are HIV positive have not been tested and do not know that they are positive (13). Programs that wish to link up with HIV CT services need to be aware of the most common obstacles to testing and do what they can to help reduce or eliminate them. This helps to increase routine HIV screening of patients in health care settings, including STI cases; to foster earlier detection of HIV infection; to identify and counsel persons with unrecognized HIV infection and link them to clinical and prevention services; and to reduce further transmission of HIV in the community (14).

1.1.4: Stigma and discrimination

Sexually transmitted diseases are well known for triggering strong responses and reactions. In many societies, PLWHA are often seen as shameful. From the moment scientists identified HIV/AIDS it is associated with stigma and discrimination, as their families, their beloved ones and their communities rejected individuals affected by HIV and social responses of fear, denial, stigma and discrimination have accompanied the epidemic. Discrimination has spread rapidly, fuelling anxiety and prejudice against the groups most affected, as well as those living with HIV or AIDS (15).

Although the great majority of Ethiopians have a basic knowledge about HIV/AIDS (16), partial and wrong information about HIV/AIDS transmission, together with fear about death and perceptions of deviant sex and breaking of religious codes are major factors in the perpetuation of HIV/AIDS stigma, discrimination and denial (9).

More than half a dozen of organizations, including the Ministry of Health and indigenous non- governmental organizations are addressing the discrimination and stigmatization problem through awareness creation and sensitization activities (9). The difficulty of eliminating HIV stigma in Ethiopia is indicated by the fact that STD and leprosy patients still suffer from discrimination after many years of health education and the increasing availability of chemotherapy (9).

1.2: Literature review

1.2.1: HIV/STI co-infection

There is tangible scientific evidence that untreated sexually transmitted infections (STIs), particularly those inducing ulcers or discharge, increase the risk of passing on or acquiring HIV during sexual intercourse. The presence of an STI means that there is more chance of broken skin or mucous membranes allowing the virus to enter or leave the body. The very same cells that the virus is seeking to infect will be concentrated at the site of the STI since these cells are fighting the infection. According to current thinking, the risk of becoming HIV infected from a single exposure is increased 10 to 300 fold in the presence of genital ulcer caused by syphilis, chancroid or genital herpes (HSV-2) (17).

According to a recent study, which was conducted by using nucleic acid amplification testing for detecting the human immunodeficiency virus (HIV) among STI clinic attendees, prenatal–obstetrical clinic attendees, clients of family planning clinics, and those who underwent HIV testing at freestanding HIV testing sites in North Carolina, more than two thirds of the acute HIV infection cases were detected among the one third of the study participants who attended the sexually transmitted disease clinics. There was also a significantly increased prevalence of both acute and recent HIV infections among persons tested for HIV infection as a result of having another sexually transmitted disease. This indicates that identifying persons with both acute and/or established HIV infection and acute cases of other sexually transmitted diseases, who are possibly representing co-transmission of HIV and classic sexually transmitted pathogens, creates new opportunities for HIV surveillance and prevention. Moreover, those highly contagious, dually infected individuals may be very likely to transmit HIV as a result of extreme viremia and HIV shedding in genital secretions (18).

Similarly, a review of twenty seven articles which examined whether the presence of active genital lesions or, more generally, a history of GUD is sufficient to increase the risk for HIV acquisition and/or transmission, around two-thirds of the analyses reported a statistically significant association between GUD and HIV infection. Applying the Bradford Hill's criteria to the literatures provided additional evidence that genital ulcers

are associated with an increased risk for HIV infection (19). Other similar studies in Malawi (20) and USA (21) have also shown that STI clinic attendees can have a surprisingly high prevalence of acute HIV infection. The prevalence of acute HIV infection in the Malawi STI clinic was found to be 4.9% (20). In the US study done in 28 STI clinics, HIV sero-prevalence by clinic ranged from 0.6% to 11.5% (median=4.7%) (21). Another study conducted in the Central African Republic also demonstrated marked association of HIV sero-positivity with presence of symptoms of sexually transmitted infections (22).

According to the review of the Ethiopian literature regarding the interaction of STIs and HIV infections by Wolday et.al (23), the prevalence of genital discharge syndrome, syphilis, genital warts, pelvic abscess in females, genital chlamydial infections, & HSV-2 infection were all associated with HIV. A very recent finding on STI-HIV co-infection also revealed that, HIV sero-prevalence rate was 33% in 2005 in patients presented with genital ulcer diseases, urethral discharge, and vaginal discharge with/or without abdominal pain (24). Moreover, diagnosis of syphilis (AOR, 9.2; 95% CI, 1.56, 54.67; p=0.01) was found to be an independent risk factor for Primary HIV Infection (PHI) in patients presenting with conventional STIs (24). Another recent study conducted in Ethiopia showed that a lifetime history of STI has a large and statistically significant odds ratio (OR, 2.71), indicating that the higher level of HIV infection is exhibited among clients that have a history of STI (25).

1.2.2: Willingness to HIV counseling and testing

Many approaches to HIV prevention and care require people to know their HIV status. The primary aim of HIV counseling and testing is preventive - to help people change their sexual behavior so as to avoid transmitting HIV to sexual partners if sero-positive, and to remain sero-negative if negative (26). Therefore, many studies have demonstrated that most HIV-infected persons substantially reduce their sexual behaviors that might transmit HIV after they become aware that they are infected. In a meta-analysis of findings from 8 studies, the prevalence of unprotected anal or vaginal intercourse with uninfected partners was on an average 68% lower in HIV-positive persons aware of their status compared to HIV-positive persons unaware of their status (14). Other studies also

showed that HIV counseling and testing is effective in promoting sexual behavior change in people attending HIV CT centers. A small descriptive study from Nigeria stated that the counseling service for young people increased uptake of condoms and decreased incidence of STIs (27). Additional study among Rwandan women recruited from antenatal and pediatric outpatient clinics also demonstrated that HIV CT was associated with reduced rates of gonorrhea (the prevalence of gonorrhea decreased from 13% to 6%, P <0.05) among sero-positive women following VCT (27). The greatest reduction in gonorrhea was among those who reported that they used condoms (16% to 4%, P<0.05). In the United States, a study from a STI clinic in Miami also showed a decrease in STI rates following HIV CT for those who tested sero-positive (26).

Another advantage of people knowing their HIV status is that it allows sero-positive people and their families to benefit from social support services at an earlier stage. This may help them to cope with their HIV infection and to have a better quality of life. For example, in the Central African Republic, out of the 350 sero-positive clients attending a VCT centre, 80% were referred for social support (26).

According to a health facility-based cross sectional survey, which was conducted to establish factors influencing utilization of voluntary HIV counseling and testing services among pregnant mothers in Kawempe division, Kampala district, Uganda, the majority of study subjects (73%) expressed their willingness to take an HIV test. The major reasons for not utilizing VCT services were; lack of money to pay for the test (35%), fear of HIV positive results (35%), unfriendly health workers (18%), and refusal by husband to take an HIV test (11%) (28).

By 2002, an estimated 38% to 44% of all adults in the United States had been tested for HIV, and 16-22 million persons aged 18-64 years are tested for HIV annually (14). However, of the more than one million persons living with HIV in the United States at the end of 2003, about one quarter (252,000 to 312,000 persons) are unaware of their infections and therefore do not benefit from clinical care to reduce morbidity and mortality. Moreover, the United Kingdom sero-prevalence rates indicate that up to 50%

of HIV positive patients in genitourinary medicine clinics remain undiagnosed, despite marked association between STIs and HIV infection (29).

Anonymous, unlinked surveys of HIV sero-prevalence and medical chart abstractions were conducted in 28 STI clinics in 14 US cities in 1997. Among the total study subjects included in the anonymous HIV sero-surveys, voluntary HIV testing rates by clinic ranged from 30% to 99% (median = 58%). Patients who were HIV infected were equally or more likely to receive new diagnoses of gonorrhea, primary or secondary syphilis, or genital ulcer disease than were patients who were HIV negative, regardless of testing status. Overall, 43% of the patients who were HIV infected received an STI diagnosis, compared with 35% of the patients who were HIV negative (30).

In the United Kingdom, a study conducted to analyze the uptake of HIV testing among attendees who had a genitourinary screen at St Thomas's Hospital genitourinary medicine department between 1 and 31 December 1999, compared the uptake of HIV testing, either at the index visit in December or deferred to within the ensuing 3 months, between patients diagnosed with an STI (gonorrhoea, chlamydia, herpes simplex virus, and trichomoniasis (study group)) and patients receiving a negative STI screen (control group). Of 318 attendees, only 18% of patients tested for HIV on the initial visit. Significantly fewer of the study group tested for HIV (14%) compared to the control group (33%) ($P<0.01$) (29).

According to the Ethiopian DHS-2005 Report, only 4% of women and 6% of men reported that they had been tested for HIV at some time, indicating that many people with HIV/AIDS in Ethiopia do not know that they are infected. Undoubtedly, some unknowingly transmit HIV (16). Moreover, the 2002 Ethiopian HIV/AIDS Behavioral Surveillance Survey, which was conducted among ten different population groups, including those potentially at high risk for HIV infection (CSWs, uniformed services, in-school and out-of-school youth and drivers) or low risk for HIV infection (farmers, pastoralists, and factory workers), revealed that over 76% of them would be willing to undergo HIV CT in the future (31). Another community based study, conducted in North-west Ethiopia, indicated that 93.8% of the study subjects reported their willingness to use

the HIV CT service if made available free of charge (32), while a similar study which was conducted in Harar Town reported 85.4% willingness to have HIV CT (33).

Studies conducted among Dabat High School students revealed that 96.1% have a positive attitude towards HIV CT (34). The limiting factors affecting willingness to practice HIV CT were students' confidence in their sero-negativity without being tested and, fear of the stress the testing procedure would create of what the society may think. Another study done among HIV CT attendees at Bethzatha Hospital in Addis Ababa reported that the reasons for seeking the HIV CT service include just to know the HIV status, premarital preparation, to start new relationship, to travel abroad and having risky behavior in 36%, 11%, 10%, 7%, and 4% clients respectively (35). Moreover, the study conducted in seven branch clinics of Family Guidance Association of Ethiopia indicated that the major reasons for seeking HIV counseling and testing are: to know the HIV status during pregnancy (3.8%), suspicion of infection (7.5%), death or illness of partner (1.3%), and premarital screening (29%) (36).

1.2.3: Stigma and discrimination

Overcoming the stigma associated with HIV is the biggest challenge to its prevention and care. It has been proposed that wider access to VCT and a larger number of people's greater awareness of their HIV status with in a community are important elements in challenging stigma (26). Countries where VCT is well established, such as Uganda, have a less stigmatizing attitude to HIV. However, for it to be effective in challenging stigma, HIV testing has to be a voluntary process associated with counseling that helps people understand and accept their status (26). For example, there are countries such as Russia, where HIV remains highly stigmatized, despite the fact that all women have routine testing as part of their antenatal care and a large proportion of the population has been tested routinely for HIV.

It has also been suggested that if HIV CT were offered routinely, and more people would accept VCT as an important component of medical care, it would promote "normalization" of HIV (26). De Cock states that the excessive caution around HIV

testing has had the detrimental effect of preventing people with HIV from accessing care. It also has contributed to the stigma and secrecy associated with testing.

It has been shown that a role model or valued member of the community declaring that he or she has been tested is important in reducing stigma and increasing the uptake of HIV testing. For example, when Magic Johnson announced that he had been tested and was sero-positive, there was a significant rise in people requesting VCT in the United States (26).

1.3: Statement of the problem

The rapid expansion of HIV/AIDS in sub-Saharan African countries has a profound impact on the health sector as well as the socio-economic development of the region in general. In the worst affected countries, the pandemic continues to negatively influence the developmental gains of the past few decades. In 2006 alone, an estimated 2.8 million people became newly infected in sub-Saharan Africa (1). According to AIDS in Ethiopia Sixth Report 2006 (3), there were estimates of 128, 900 new HIV infections (353 a day) including 30,300 HIV positive births that occurred in 2005. It has been estimated that as many as two-thirds of the new HIV infections expected to occur in this decade could be averted by the implementation of a comprehensive range of evidence based prevention measures (1).

There is tangible scientific evidence that a person with an untreated sexually transmitted infections (STIs), particularly those inducing ulcers or discharge, is at an increased risk of passing on or acquiring HIV during sexual intercourse. According to current thinking, the risk of becoming HIV infected from a single exposure is increased 10 to 300 fold in the presence of genital ulcer diseases (17).

HIV testing in combination with appropriate counseling for STI cases is thus an important tool in the public health response to HIV/AIDS. There are compelling

arguments for the provision of HIV Counseling and Testing services for STI cases in sub-Saharan Africa. First, individuals have the right to know their infection status and plan for the future to reduce further transmission of the virus. Especially, the high viral load associated with acute HIV infection has critical public health importance since the magnitude of viral load is likely to predict the probability of sexual transmission of HIV (29). Second, early detection of HIV may improve medical and psychosocial support for HIV-infected individuals. Third, HIV Counseling and Testing may enable people to cope with the anxiety associated with HIV serostatus. HIV counseling and testing also promotes behavioral change (37, 38).

Recent improvements in anti-retroviral therapy, prophylaxis for opportunistic infections, and effective interventions to prevent perinatal transmission have given new urgency to identify HIV-infected persons. However, many persons with HIV infection remain unaware of their serostatus, and frequently, those who have been tested learn that they are HIV-infected too late to benefit from these advances (37).

Thus, this study tried to bring to light some of the very important hypothesized factors affecting willingness to HIV CT among STI cases, which we need to focus our attention during the work of promotion of HIV CT as part of a continuum of services and support.

II. Objectives

1. General objective:

- To assess factors affecting willingness towards HIV CT among patients presenting with the conventional STIs in Addis Ababa.

2. Specific objectives:

-To estimate the level of willingness to HIV CT among STI cases.

-To identify and describe socio-demographic, knowledge, attitude, and behavioral factors influencing willingness to HIV CT among STI cases.

-To describe the attitude of STI patients towards PLWHA.

III. Methodology

1. Study design

In order to examine factors affecting willingness towards HIV counselling and testing among STI cases, a descriptive cross-sectional study was conducted involving 422 STI cases, as determined by the conventional **syndromic approach** for STI case management. The STI

cases were selected and interviewed during a multi-center cross-sectional survey that was conducted in 10 health centers located in Addis Ababa City Administration.

2. Study Area

The study was conducted in 10 government health centers in Addis Ababa between December 2006 and April 2007.The health centers where the study was conducted were: Kazanchis, Teklehaimanot, Arada, Kirkos, Addis Ketema, Wereda 23, Wereda 17 (Bole), Kolfe, Shiromeda and Yeka health centers. The above health centers were purposively selected mainly on the basis of their high STI case load according to the priliminary assessment by the principal investigator.

3. Study population

The study included a total of 422 STI cases, aged 15-49 years old, and they were consecutively selected every day (Monday through Friday) during an outpatient visit. The study participants were consecutive and consenting male and female patients who presented with the conventional STI syndromes (including genital ulcers, urethral discharges (for males), and vaginal discharges with/without lower abdominal pain (for females). Data on demographic characteristics, socio-economic variables, clinical history, knowledge and behavioral factors were collected using a structured and pre-tested questionnaire. These data were used to identify and describe factors influencing willingness towards HIV counseling and testing.

4. Sample Size Determination

The required sample size was calculated using the formula of estimating a single population proportion for a cross-sectional survey.

$$n = \frac{Z_{\alpha}^{2}\, p\,(1-p)}{}$$

$$d^2$$

Where, **n =** is the required minimum sample size.

z = is a standard score corresponding to 95% CI, and is thus equal to 1.96

p= the proportion of willingness to HIV CT among STI cases is assumed to be 50% in order to maximize the sample size. Similar local or related studies that assessed willingness to HIV CT among STI cases were not available.

d = is the margin of error, and was taken to be 5% (0.05).

Accordingly, the sample size was 384. Adding 10% non-response rate gave a final sample size of 422 STI patients.

5. Sampling procedure

Each of the 10 health centers were provided with questionnaires in proportion to their estimated STI case load. STI cases that showed up consecutively on their own free will and consented to respond to the issues set out in the questionnaire were eligible for the interview. Owing to the fact that STI patients of this study were consecutive (not randomly selected), representativeness of the sample was not of much concern. That was also characteristic of facility-based studies where there were limited number of study subjects (STI cases) with in a specified study period. Verbal consent of all the study subjects who present themselves every day to the selected health centers were obtained before administering the pre-tested structured questionnaire.

6. Data collection procedures

A pre-tested interviewer administered structured questionnaire, first prepared in English and then translated to Amharic, was applied to collect information on demographic, socio-economic, knowledge and behavioral characteristics of the study subjects. The duration of data collection was from December 2006 to April 2007, till the required number of sample size was achieved. Data collectors were health professionals (physicians, Nurses and HIV counselors) working as permanent employees of the respective health centers and were trained to administer the questionnaire. They were particularly trained on ways of administering the questionnaire and on how to select the study subjects and then filled out the questionnaire in consultation with those willing to participate after verbal consent was taken. The majority of questionnaires were completed while patients were seen at the OPD. However, in those clinical facilities where

there were human resource constraints and a large volume of patients seen at the OPD, those individuals diagnosed to have STIs at the OPD (usually by physicians, or nurses) were referred to HIV counselors for the interview. Completed questionnaires were checked for consistency and completeness by the supervisors, including the principal investigator. All the study subjects between the ages of 15-49 years, who were clinically diagnosed to have STIs based on the standard national syndromic approach protocol (STI risk assessment positive) and those who consented to participate were included for the interview. However, those individuals, particularly "vaginal discharge" cases who were risk assessment negative, and those who refuse to participate were excluded. This was due to the fact that non-STI "vaginal discharge" is very much common among females (4). Those STI patients that were seriously ill to the extent unable to respond to the questionnaire were also excluded.

❖ Study variables:

- **Dependent Variable:** Willingness to HIV CT.
- **Independent Variables:** socio-demographic variables (age, sex, ethnicity, religion, marital status, place of residence), socio-economic variables (educational status, income, occupation), multiple sexual partners, knowledge about HIV/AIDS, STIs, and HIV CT; Perceived benefit of HIV CT; Perceived risk of HIV; Stigma and Discrimination towards PLWHA. **SEE ALSO ANNEX 1.**

7. Operational Definitions

Comprehensive knowledge about HIV/AIDS– Respondents were considered to have comprehensive knowledge about HIV/AIDS if they knew about the three most programmatically important HIV/AIDS prevention methods (namely abstinence, having one faithful uninfected sexual partner and consistent and correct condom use) and had no misconceptions about HIV transmission.

Discrimination: an act or behavior based on prejudice. Discrimination is a way of expressing, either on purpose or inadvertently, stigmatizing thoughts.

Knowledge about HIV prevention– Respondents were considered to be knowledgeable about HIV prevention if they correctly identified the three major ways to prevent HIV transmission i.e. abstinence, being faithful to one uninfected partner and condom use.

Misconceptions- Respondents were considered to have misconceptions about HIV/AIDS transmission and prevention if they agreed to any of the following six incorrect statements about HIV/AIDS: a mosquito bite can transmit HIV; sharing a meal with someone who is HIV positive can transmit HIV; a healthy-looking person can't be infected by HIV; eating an uncooked egg laid by a chicken that swallowed a used condom can transmit HIV; eating raw meat (raw *kitfo)* prepared by an HIV-infected person can transmit HIV; and drinking local hard liquor and eating hot pepper can protect from HIV.

No misconception (no incorrect beliefs about HIV/AIDS transmission) – respondents were considered to have no incorrect beliefs about HIV/AIDS transmission if they correctly rejected statements expressing the two most common local misconceptions about HIV: "eating raw meat prepared by an HIV infected person tranmismits the virus" and "eating uncooked egg laid by a chicken that has swallowed a used condom transmits HIV infection".

Routine offering of HIV testing: in which health care providers offer testing to all patients being assessed for a sexually transmitted infection (STI); seen during antenatal care; or seen in clinical and community-based health service settings where HIV is prevalent and antiretroviral treatment is available.

Stigma: Refers to all unfavorable attitudes and beliefs directed towards people living with HIV/AIDS (PLWHA) or those perceived to be infected, as well as their significant others and loved ones, close associates, social groups, and communities.

Syndromic STI management: is a systemic approach to treat STIs, which bases diagnosis on a group of clinical signs and symptoms and treats for all diseases that could cause that syndrome, especially in areas where health care providers lack time or equipment to diagnose STIs with laboratory tests.

Willingness to HIV counseling and testing: The individual STI patients' plan to practice HIV counseling and testing at the time or 3 months after their STI diagnosis.

8. Data Analysis

Data entry and analysis was performed using SPSS 10.0 for Windows 98 statistical soft ware. Socio-demographic data were summarized by frequency tables and summary statistics. For all statistical significance tests, the cut- off value set was $p<0.05$ as this was considered statistically reliable for analysis of such a study. Proportions, percentages, tables and graphs were used for description of the data as appropriate. Odds ratio with 95% confidence interval was used to identify the factors enhancing willingness towards HIV CT. The Pearson chi square tests and cross-tabulations were used to assess the statistical significance of associations between willingness towards HIV CT and respondents' socio-demographic characteristics, knowledge and behavioral factors, and previous history of HIV CT. In the bivariate analyses, crude odds ratios of willingness towards HIV CT were estimated by all covariates. All the covariates were categorical. Since crude OR doesn't take in to account the effect of the confounding variable(s), a multivariate analysis was employed to estimate the adjusted odds ratios of willingness towards HIV CT controlling for suspected confounders and checking for interactions. Thus, willingness to HIV CT was inserted as a dependent variable, while being an STI case was taken as a key independent variable along with other variables including: sex, ethnicity, religion, educational status, marital status, occupation, presence of multiple sexual partners, knowledge about HIV/AIDS/STIs and HIV CT, perceived benefit of HIV CT, condom use during the previous 12 months, ever tested for HIV, perceived risk of contracting HIV, etc…

9. Data quality management

To keep the quality of the data:

- Questionnaires first prepared in English were translated to Amharic and then back to English to keep its consistency.
- Data collectors were physicians, nurses, trained HIV counselors, and the principal investigator who have taken special training on syndromic STI management.
-Intensive training and orientation about the objective and process of data collection was provided for data collectors for three days.
- Closer supervision was undertaken during data collection.
- Completed questionnaires were checked daily for consistency and completeness by the supervisors.
- Pre-testing was done in similar health facilities two weeks ahead of the actual data collection and special care was taken not to include those who already participated in the pre-testing.
- Each information was checked for its appropriateness and completeness before entering the data in to a computer and double entering of 10% of the data has been done to further enhance the quality of the data.

10. Ethical Consideration

Ethical clearance was obtained from the Addis Ababa University, Department of Community Health. The necessary permission to undertake the study was obtained from the Addis Ababa Health Bureau. All the study participants were informed about the purpose of the study, their right to refuse was maintained and assured of confidentiality and informed verbal consent was obtained prior to the interview. The instruments and procedures didn't cause any harm to the study subjects, the community, the data collectors and supervisors involved in the survey. To ensure confidentiality, anonymous type of interview, where by names of the interviewee was not written on the questionnaire.

11. Dissemination plan

The study findings will be disseminated and communicated to relevant and interested bodies (including DCH, EPHA, MOH, and Addis Ababa Health Bureau, in the form of written document, seminar and soft copy) and will also be presented at national, regional or international conferences. Finally it will be submitted for publication to national or international peer-reviewed journals, as deemed necessary and/or found suitable.

IV. Result

4.1: Socio-demographic characteristics of study subjects

A total of 422 (274 female and 148 male) STI patients were recruited to the study. However, four (3 female and 1 male) questionnaires filled partially or completed incorrectly were excluded, giving a non-response rate of 0.95%. Therefore, the final analysis was calculated for 418 (99.05%) eligible STI patients (Table1).

Of the total number of respondents, 271 (64.8%) were females while147 (35.2%) were males. The mean and median ages were 30.8 years [SD ±9.58 years] and 28 years, respectively. With regard to age distribution, 11% were in the age group of 15-19 years, 17.5% were in the age group of 20-24 years, 23.9% were in the age group of 25-29years, 12.9% were in the age group of 30-34 years, 11.7% lay in the age group of 35-39 years, 11.7% lay in the age group of 40-44 years, and the rest 11.2% were in the age group of 45-49years. The majority of the study subjects were Amhara by ethnicity (45%), followed by Oromo (21.1%), Guraghe (18.7%), Tigree (7.2%), Seltie (5%), and others (3.1%). Among the total study subjects, 76.3% were Orthodox in religion, 15.6% Muslims, and the rest 8.1% were Protestants. The largest proportion of STI patients were married (41.2%), followed by single (27.8%), living with a co-habiting partner (11.5%), divorced (8.9%), widowed (6%), and separated (4.8%). Nearly forty percent (39.7%) of the respondents attended secondary school, 34.9% attended

primary school, 7.4% had tertiary level of education, and the rest (17.9%) had no formal education at all (Table1).

Regarding occupation, 98 (23.4%), 67 (16%), 53 (12.7%), 41 (9.8%), 35 (8.4%), 31 (7.4%), 21 (5%), 18 (4.3%), 14 (3.4%), 40 (9.6%) of the STI patients were jobless, daily laborers, house wife, merchant, maid, government employee, student, farmer, guard, and others, respectively. Among the total study subjects, 71% were identified from Kazanchis health center, 7.2% from Shiromeda, 6% from Woreda 17 (Bole), 4.3% from Arada, 3.6% from Woreda 23, 2.6% from Teklehaimanot, 1.7% from Addis Ketema, and the rest from Kirkos, Kolfe, and Yeka health centers (each 1.2%). Most of the study subjects 406 (97.1%) were from Addis Ababa and the rest 12 (2.9%) from other areas (Table1).

Table 1: Socio-demographic characteristics of study subjects, Addis Ababa, 2007, (n=418)

Socio-demographic characteristic		Frequency (n=418)	Percentage (%)
Sex:	Male	147	35.2%
	Female	271	64.8%
Age group:	15-19	46	11.0%
	20-24	73	17.5%
	25-29	100	23.9%
	30-34	54	12.9%
	35-39	49	11.7%
	40-44	49	11.7%
	45-49	47	11.2%
Ethnicity:	Amhara	188	45.0%
	Oromo	88	21.1%

	Tigree	30	7.2%
	Guraghe	78	18.7%
	Seltie	21	5.0%
	Others	13	3.1%
Religion:	Orthodox Christian	319	76.3%
	Muslim	65	15.6%
	Protestant	34	8.1%
Marital status:			
	Married	172	41.2%
	Single	116	27.8%
	Co-habitation	48	11.5%
	Divorced	37	8.9%
	Widowed	25	6.0%
	Separated	20	4.8%
Education:	No formal education	75	17.9%
	Primary school	146	34.9%
	Secondary	166	39.7%
	Tertiary	31	7.4%
Occupation:			
	Jobless	98	23.4%
	Daily laborers	67	16.0%
	House wife	53	12.7%
	Merchant	41	9.8%
	Maid	35	8.4%

Government employee	31	7.4%
Student	21	5.0%
Farmer	18	4.3%
Guard	14	3.4%
Others	40	9.6%

Site (Health Center):

Kazanchis	297	71.0%
Shiromeda	30	7.2%
Woreda 17(Bole)	25	6.0%
Arada	18	4.3%
Woreda 23	15	3.6%
Teklehaimanot	11	2.6%
Addis Ketema	7	1.7%
Kirkos	5	1.2%
Kolfe	5	1.2%
Yeka	5	1.2%

4.2: Diagnosis of syndromes

The diagnosis of STI was by syndromic approach alone in 385 (92.1%) subjects, and syndromic approach combined with laboratory confirmation in 33 (7.9%) study subjects. STI syndromic case management was provided at the time of examination, based on physical and clinical findings, according to the standard national syndromic approach protocol. Accordingly, 106/418 (25.4%) patients were diagnosed to have Urethral Discharge Syndrome (UDS) alone, 190/418 (45.5%) Vaginal Discharge Syndrome (VDS) alone, 43/418 (10.3%) Genital Ulcer diseases Syndrome (GUS) alone, 4/418 (1%) Lower Abdominal Pain Syndrome

(LAPS) alone, 21/418 (5%) a combination of UDS and GUS, and 54/418 (12.9%) GUS combined with VDS (Table 2).

Table 2: Distribution of study subjects' syndromes by sex, Addis Ababa, 2007. (n=418)

Syndromes	**Male** No. (%)	**Female** No. (%)
Urethral discharge alone	106 (25.4)	-
Vaginal discharge alone	-	190 (45.5)
Genital ulcer alone	20 (4.8)	23 (5.5)
Lower abdominal pain alone	-	4 (1.0)
Urethral discharge + Genital ulcer	21 (5)	-
Vaginal discharge + Genital ulcer	-	54 (12.9)

4.3: STIs/ HIV/AIDS and related Knowledge

Knowledge of STI symptoms

To assess general knowledge about STIs, all STI patients were asked whether they had heard of diseases that could be transmitted through sexual intercourse. The majority 71.8 % (300/418) of STI patients said that they had heard of STIs, of which 40% (120/300) were males and 60 % (180/300) were females. Moreover, males had better heard of STIs than females, accounting 81.6 % (120/147) and 66.4% (180/271), respectively. Those who had heard of STIs were asked to describe the symptoms of STIs, for men and women separately (N.B. the symptoms were **not** read out). Table 3 summarizes the STI patients' responses on

symptoms of STIs in men and women. The most commonly mentioned symptoms of STIs in women were increased vaginal discharge 37.3% (112/300), foul smelling vaginal discharge 33.7% (101/300), painful urination 31.3% (94/300), genital itching 25.7% (77/300), genital ulcer 23.7% (71/300), lower abdominal pain 19.7% (59/300), inguinal swelling 13.7% (41/300), and others 1.3% (4/300). For STI in men, urethral discharge was the most commonly mentioned symptom 42 % (126/300), followed by painful urination 37.7% (113/300), genital ulcer/sore 30.7% (92/300), inguinal swelling 21.3% (64/300), and others 2% (6/300).

Table 3: Knowledge of STI symptoms amongst STI patients who had heard of STIs, Addis Ababa, 2007. (n=300)

Variables	Percentage of total* (n=300)
Know female STI symptoms	
Increased vaginal discharge	37.3
Foul smelling vaginal discharge	33.7
Painful urination	31.3
Genital itching	25.7
Genital ulcer	23.7
Lower abdominal pain	19.7
Inguinal swelling	13.7
Others	1.3
Know male STI symptoms	
Urethral discharge	42.0
Painful urination	37.7
Genital ulcers/sore	30.7
Inguinal swelling	21.3

Others	2.0

* Percents do not add up to 100% since more than one answer was possible

Knowledge and misconception about STIs/HIV/AIDS

The vast majority 97.4% (407/418) of the respondents confirmed the fact that they had heard of HIV/AIDS and 72.7% (296/407) of them reported that they knew someone who was infected with HIV or had died of AIDS. In fact, 21.3% (89/418) of the study subjects reported that a healthy-looking person can't be infected by HIV (Table 4).

Amongst STI patients, 93.5% (391/418) reported that HIV can be transmitted through unsafe sexual practice, 88.3% (369/418) said by sharing of used sharp instruments with someone who is infected with HIV, 77.2% (323/418) said through transfusion of infected blood, 68.4% (286/418) said from HIV infected mother to child during breast-feeding, 67.2% (281/418) said from HIV infected mother to fetus during pregnancy, 34.9% (146/418) said by eating an egg from a chicken that has swallowed a used condom, 34.9% (146/418) said by eating raw meat (raw "kitfo") prepared by an HIV-infected

person, 30.4% (127/418) said through mosquito bite which has already fed on a person with AIDS, 3.8% (16/418) said by shaking hands with someone who is infected by HIV, 2.6 % (11/418) said by sharing a meal with PLWHA, and the rest 2.6% (11/418) said by wearing clothes of PLWHA (Table 4).

Regarding the acquisition of STIs, 48.3% (202/418) reported that STIs are acquired through unprotected sexual intercourse, where as 6.7% (28/418), 5.7% (24/418), 1.9% (8/418), 1.4% (6/418), and 1.4% (6/418) said that STIs are acquired by urinating towards the moon/sun, sharing of clothes, urinating in places where dogs urinated, lack of personal hygiene, and work overload, respectively (Table 4). Surprisingly, nearly forty percent (165/418) of STI patients don't know how someone can acquire STIs.

The majority, 86.1% and 84% of STI patients mentioned avoiding sex (abstinence) and faithfulness with only one uninfected partner as prevention methods against STIs/HIV/AIDS, respectively. Moreover, 69.9% and 31.3% of the respondents said that using a condom every time during sex and avoid sharing of used sharp instruments protect people from getting STIs/HIV/AIDS, respectively. However, 14.8% of the respondents said that drinking local

hard liquor and eating hot pepper protect people from getting STIs/HIV/AIDS, and another 7.2% of STI patients said that they don't know how people can protect themselves from acquiring STIs/HIV/AIDS (Table 4).

Of the total study subjects, more than three-fourth (78%) of STI patients said that there is no cure for HIV/AIDS, while 9.6% (40/418) and 12.4% (52/418) reported that HIV/AIDS can be cured and don't know whether HIV/AIDS can be cured or not, respectively. On the other hand, 72.3% (302/418) of STI patients reported that most STIs can be cured where as 3.1% (13/418) and 24.6% (103/418) said that there is no cure for STIs and don't know whether STIs can be cured or not, respectively (Table 4). Moreover, 55.3% (231/418) of the study subjects said that untreated STIs, particularly those inducing ulcers or discharge, increase the risk of passing on or acquiring HIV during sexual intercourse and a similar proportion (55.6%) of study subjects thought that a person with untreated STIs is at risk of being infected with HIV. More than one-third (38.5%) of STI patients also reported that control of STIs help in the prevention of transmitting or acquiring HIV/AIDS.

Misconceptions about HIV transmission and knowledge of programmatically important HIV prevention methods (namely abstinence, having one faithful uninfected sexual partner and consistent

and correct condom use) were used to assess the STI patients' knowledge about HIV/AIDS. Overall, 43.8% (183/418) of the STI patients had at least one misconception. Thirty five percent (146/418) of the respondents believed that HIV could be acquired by eating raw eggs laid by a chicken that had swallowed a used condom, and a similar proportion (35%) of STI patients also said that eating raw meat (raw "*kitfo*")prepared by an HIV-infected person can transmit HIV. Moreover, 30.4% (127/418) of STI patients believed that mosquito bites could spread HIV. Another 21.3% (89/418) of the STI patients did not think that a healthy looking person can be infected by HIV (Table 4). Furthermore, nearly 93% (388/418) of the study subjects knew at least one prevention method, and 61.2% (256/418) of them identified all the three major methods for preventing HIV/AIDS. The results from this survey also indicated that despite higher level of knowledge of at least one preventive method, there is still low comprehensive knowledge 38% (159/418).

Table 4: Knowledge of STI patients on the modes of STI/HIV transmission and its preventive methods in Addis Ababa, 2007.

HIV/AIDS related questions	Number of respondents	
	No.(Yes)	Percent (%)
Ever heard of HIV/AIDS.	407	97.4%
Know someone who is infected with HIV or died of AIDS (n=407)	296	72.7%
A healthy looking person can't be infected by HIV (n=418).	89	21.3%
Mode of HIV transmission (n=418) *		
- Unsafe sexual practice.	391	93.5 %
- Sharing of used sharp instruments with someone who is infected with HIV.	369	88.3%
- Transfusion of infected blood.	323	77.2%
- From HIV +ve mother to child during breast-feeding.	286	68.4%
- From HIV +ve mother to fetus during pregnancy.	281	67.2 %
- Eating an egg from a chicken that has swallowed a used condom.	146	34.9%
- Eating raw meat (raw "*kitfo*")prepared by an HIV-infected person.	146	34.9%
- Mosquito bite which has already fed on a person with AIDS.	127	30.4%
- Shaking hands with someone who is infected.	16	3.8%
- Sharing a meal with PLWHA.	11	2.6 %
	11	2.6 %

- Wearing clothes of PLWHA.		
How someone can get (acquire) STIs? (n=418)*	202	48.3%
- Having unprotected sexual intercourse	28	6.7%
- Urinating towards the moon/sun	24	5.7%
- Sharing of clothes	8	1.9%
- Urinating in places where dogs urinated	6	1.4%
- Lack of personal hygiene	6	1.4 %
- Work overload	165	39.5 %
- Don't know		
How can people protect themselves from getting STIs/HIV/AIDS?*	360	86.1%
- Avoiding Sex (abstinence).	351	84%
- Staying with only one uninfected partner faithful.	292	69.9 %
- Using a condom correctly every time during sex.	131	31.3%
- Avoid sharing of sharp instruments.	62	14.8%
- By drinking local hard liquor and eating hot pepper.	30	7.2%
- Don't know	326	78 %
HIV/AIDS can't be cured.	302	72.3 %
Most STIs can be cured.	231	55.3 %
Untreated STIs, particularly those inducing ulcers or discharge, increase the risk of passing on or acquiring HIV during sex.	161	38.5 %
Control of STIs help in the prevention of transmitting or acquiring HIV/AIDS.		

* More than one response is possible.

4.4: STI patients' perception of risk towards contracting HIV

STI patients were also asked about the chances that they have been exposed to HIV and nearly half 48.8% (204/418) of them perceived their risk of HIV infection to be nil, while 12.7% (53/418), 9.8% (41/418), and 15.6% (65/418) perceived themselves to be at small, moderate and high risk of HIV infection, respectively. However, 12% (50/418) of the STI patients couldn't rank their chance of contracting the HIV infection and the remaining 1.1% (5/418) said that they already had HIV (Table 5). The reasons commonly given for perceiving no/small chance of contracting the HIV infection were: trusted their partner (45.1%), abstains from sex (secondary abstinence) [22.6%], has only one sexual partner (16.7%), always use condoms (10.1%), partner tested negative (8.6%), partner looks healthy (5.1%), and others (18.3%) (Table5).

Table5. STI patients' perception of risk towards contracting the HIV infection and the reasons commonly given for perceiving no/small chance of contracting the HIV infection, Addis Ababa, 2007 (n=418).

Perceived risk related questions	Percentage of respondents
Self perception of STI patients towards their chances of contracting the HIV infection.	
– No chance of exposure	48.8%
- Small chance of exposure	12.7%
- Moderate chance of exposure	9.8%
- High chance of exposure	15.6%
- Already have HIV	1.1%
- I don't know	12%
Reasons commonly given for perceiving no/small chance of contracting the HIV infection*.	

- Trusted sexual partner	
- Abstinence (secondary abstinence)	45.1%
- Has only one sexual partner	22.6%
- Always use condoms	16.7%
- Partner tested negative	10.1%
- Partner looks healthy	8.6%
- others	5.1%
	18.3%

* More than one answer is possible.

4.5: STIs and Treatment Seeking Behavior

STI patients were asked whether they had experienced any genital discharge and/or genital ulcers during the previous 12 months. Overall, 99% (414/418) of the STI patients reported having had genital discharge and/or ulcer. Those patients who reported that they had experienced genital discharge and/or genital ulcers in the previous 12 months were asked where they had sought medical advice/treatment during the 12 months preceding the survey. A list of treatment places were read out to the respondents so that they could answer in one of two ways: 'yes' or 'no'. Multiple responses were possible. About 19.8% (82/414) of the STI patients who reported having had genital discharge and/or ulcer had sought advice/treatment from a government health care facility, 15.9% (66/414) replied that they had sought advice/treatment from a private hospital/or doctor, 7% (29/414) from traditional healers/holly water, 2.9% (12/414) from private pharmacies, 2.2% (9/414) had sought advice/treatment from family planning clinics, and the remaining 63.8% (264/414) said that they didn't seek

any advice/treatment prior to the interview mainly because they had developed STI signs and symptoms very recently (Table6). Regarding life-time STI treatment history, thirty percent (126/418) of the study subjects reported ever been treated for STIs, of which 68.3% (86/126) had been treated for >=2 STI episodes where as 31.8% (40/126) had only one STI treatment history.

Table6. Places where STI patients had sought medical treatment during the 12 months preceding the survey, Addis Ababa, 2007. (n=414)

Places where STI patients had sought treatment	Percentage of total * (n=414)
Government health care facility	19.8
Private hospital/clinic/ doctor	15.9
Traditional healers/Holly water	7
Private pharmacies	2.9
Family planning clinics	2.2
Didn't seek any advice/treatment	63.8

* More than one response is possible.

Condom use

Considering the frequency of condom use during the past 12 months, nearly three-fourth (73.9%) of STI cases reported that they had never used condoms, while 12.44%, 6.22%, and 5.26%, of them said

that they had used condoms sometimes, almost every time, and every time they had sex, respectively. The rest (2.15%) of the study subjects had no response on the question relating to condom use during the past 12 months.

4.6: Knowledge and attitude towards HIV counseling and testing

Regarding HIV counseling and testing services, 91.1% (381/418) confirmed the fact that they had heard of HIV CT. The commonest sources of HIV CT reported by STI patients were mass media (66.7%), followed by health workers (59.3%), friends/peers (23.9%), school (14.2%),

family (11.8%), neighbors (11.5%), kebele health education programmmes (4.7%), and others (10%) (Figure1).

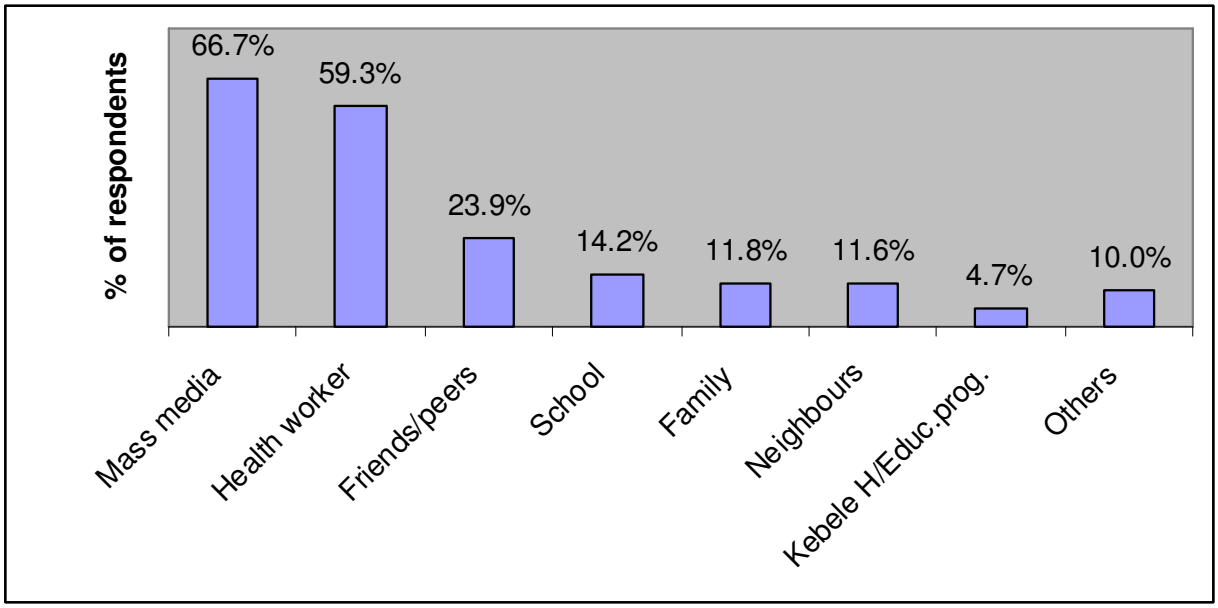

Figure1. Sources of HIV CT reported by STI patients, Addis Ababa, 2007 (n=381).

HIV Testing

Ninety five percent (398/418) of the study subjects agreed that HIV counseling and testing is important, and the reasons given for the importance of HIV CT were to know one's own HIV status (93.5%), to protect oneself from being infected (87.8%), if positive not to transmit to others (84%), if positive to get care and support services (84.7%), if positive to get ART (80.4%), and to be free from stress (76.8%) (Table7). In addition, 93.5% of the study subjects claimed that anyone should check his/her own HIV serostatus.

Previous history of HIV counseling and testing among the study subjects were also assessed (Table7). In this respect, 45% (188/418) of the study subjects self-reported having had a previous HIV test. The most important reasons mentioned for prior testing were: just to know the HIV status (44.7%), before marriage (18.6%), suspicion of being infected (14.9%), to travel abroad (10%), to know HIV status during pregnancy (9.6%), ordered by a health worker (6.4%), death or illness of partner (4.8%), donation of blood (1.6%), and others (5.3%). Of the 188 who had previous history of HIV counseling and testing, 96.3% (181/188) and 94.2% (177/188) had pre-test and post-test counseling, respectively. Furthermore, more

than half of the respondents (52.4%) said that it was possible to get a confidential HIV test in their community, where as 42.1% of STI patients don't know whether it was possible or not to get a confidential HIV test in their community.

Table7. Reasons commonly given for the importance and practice of HIV CT among STI patients, Addis Ababa, 2007 (n=418).

HIV CT related questions	Percentage of respondents *
Reasons given for the importance of HIV CT. (n=398)	
- to know one's own HIV status	93.5%
- to protect oneself from being infected by HIV	87.8%
- if positive not to transmit to others	84%
- if positive to get care and support services	84.7%
- if positive to get ART	80.4%
- to be free from stress	76.8%
Reasons given for having had a previous HIV test.(n=188)	
- just to know the HIV status	44.7%
- before marriage	18.6%
- suspicion of being infected	14.9%
- to travel abroad	10%
- to know HIV status during pregnancy	9.6%
- ordered by a health worker	6.4%
- death or illness of partner	4.8%
- donation of blood	1.6%

- others 5.3%

* Percents do not add up to 100% since more than one answer was possible

Overall, nearly three-fourths 73.9% (309/418) of the study subjects showed their willingness to undertake HIV counseling and testing. The majority 69.4% (290/418) of the study subjects preferred anonymous testing, while 41.6% (174/418) preferred confidential testing. The most important reasons mentioned for not showing willingness to have HIV counseling and testing were: to think over it 67% (73/109), fear of test results 7.3% (8/109), need to discuss with partner first 7.3% (8/109), no suspicion of being infected 6.4% (7/109), and others 11.9% (13/109) (Figure2).

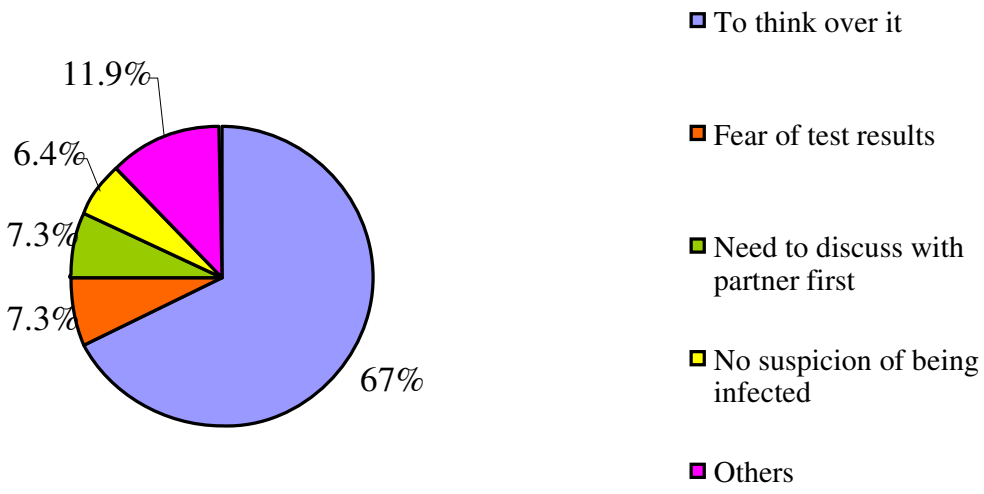

Figure2. Reasons mentioned for not showing willingness to have HIV CT among STI patients, Addis Ababa, 2007 (n=109).

Study subjects were also asked about the types of HIV counseling and testing methods they prefer (more than one answer was possible), and 93.1% (389/418) preferred VCT, where as 65.1% (272/418) preferred diagnostic HIV counseling and testing, 68.7% (287/418) preferred routine offering of HIV counseling and testing, and only 1.4% (6/418) preferred mandatory HIV counseling and testing methods. Regarding the way to obtain HIV test results, the

majority 91.4% (382/418) of study subjects preferred face-to-face (verbally), followed by secretive letter (5.7%), and the rest 2.9% said "I don't know."

4.7: Levels of stigma and discrimination among STI patients

Various questions related to stigma and discrimination were used to assess STI patients' attitudes towards PLWHA (Table8). Accordingly, STI patients tended to express more positive attitudes in response to the questions concerning behavior towards HIV-infected relatives and to the questions about shopkeepers. Ninety one percent (382/418) of STI patients reported that they would be willing to take care for a family member living with HIV/AIDS in their home. Similarly, around 86.1% (360/418) of the respondents reported that they would buy food items and other materials from shops and supermarkets owned by HIV positive persons. Nevertheless, a considerable amount of discrimination towards PLWHA was observed. Overall, 33.3% (139/418) of the respondents had at least one stigmatizing attitude towards PLWHA. Amongst STI patients, 20% (85/418) were not willing to share a meal with someone who is identified as having HIV/AIDS. Moreover, 22% (93/418) of the STI patients said that they would feel afraid of PLWHA and another 12.2% (51/418) were not willing to work together with PLWHA in the same workplace. Nearly 8% (33/418) of STI patients were not willing to send their children to school where a student living with HIV/AIDS learns and 6% (17/418) thought that people living with HIV/AIDS should be quarantined (isolated) in health care facilities.

Table 8: Attitudes of the study subjects towards people living with HIV/AIDS in Addis Ababa, June 2007, (n=418).

Attitude of the study subjects	Number of respondents		
	Male (n=147)	Female (n=271)	Total (n=418)
Would you be willing to take care of a family member who is infected with HIV?			
Yes	137	245	382
No	9	22	31

Not sure	1	4	5
% Yes	93.2%	90.4%	91.39%

If you knew a shopkeeper or food seller had the HIV virus, would you buy food from them?

Yes	122	238	360
No	22	26	48
Don't know	3	7	10
% Yes	83%	87.82%	86.12%

Do you share a meal with a person who is positive for HIV/AIDS?

Yes	108	211	319
No	31	54	85
Don't know	8	6	14
% Yes	73.47%	77.86%	76.32%

Would you say you feel afraid of PLWHA?

Yes	38	55	93
No	104	210	314
Don't know	5	6	11
% Yes	25.85%	20.3%	22.25%

Would you be willing to work together with people identified to have HIV in the same work place?

Yes	119	240	359
No	25	26	51
Not sure	3	5	8
% Yes	80.95%	88.56%	85.89%

Do you think that people living with HIV/AIDS should be quarantined?

Yes	10	15	25

No	128	248	376
Don't know	9	8	17
% Yes	6.8%	5.54%	6%

4.8: Factors affecting willingness towards HIV counseling and testing.

Out of 418 STI patients, 309 cases, who showed their willingness towards HIV CT, were taken as denominator for the evaluation of factors affecting willingness towards HIV CT (Table9). On crude bivariate analysis, the factors found to be significantly associated with willingness towards HIV counseling and testing were: being a female, being in the age group 15-34 years, ever tested for HIV, agreed that HIV CT is important, moderate risk perception, saying that control of STIs help in the prevention of HIV/AIDS, HIV/AIDS can be cured, and PLWHA should be quarantined. Analysis of willingness towards HIV CT with respect to other socio-demographic factors showed that level of education, religion, marital status, and occupation had no effect on the STI patients' willingness towards HIV CT.

On multivariate logistic regression analysis, however, the only three factors remained to have significant association with willingness towards HIV counseling and testing were being in the age group 15-34 years, ever tested for HIV, and perceiving small or moderate chance of contracting the HIV infection. The multivariate analysis showed that those STI patients in the age group of 15-24 years and 25-34 years were 5-times (OR, 5.27; 95% CI, 2.33-11.9; P-value, 0.000) and 2-times (OR, 2.43; 95% CI, 1.30-4.56; P-value, 0.006) more likely to be willing to have HIV CT at the time or 3 months after their STI diagnosis than those in the age group of 35-49 years, respectively. Furthermore, those STI patients who reported ever had an HIV test preceding the survey were about 4-times more likely to be willing to have HIV CT at the time or 3 months after their STI diagnosis than those who didn't have previous HIV CT (OR, 3.51; 95% CI, 1.89, 6.51; P-value, 0.000). However, perceiving small or moderate chance of contracting the HIV infection was found to have protective effect against willingness to HIV CT. (Table9).

Table9: Multivariate Logistic regressional analysis of factors favoring willingness towards HIV counseling and testing among STI patients, Addis Ababa, 2007.

Variables	No. (%) of respondents Willing to have HIV CT	Crude OR (95% CI)	Adjusted OR (95% CI)	P-value
Sex:				
Male	100 (32.36%)	1.00		
Female	209 (67.64%)	1.58 (1.01, 2.48) *	1.09 (0.61, 1.98)	0.757
Age group in years:				
15 – 24 years	105 (33.98%)	5.60 (2.93, 10.71) *	5.27 (2.33, 11.9)*	0.000
25 – 34 years	121 (39.16%)	2.74 (1.65, 4.55) *	2.43 (1.30, 4.56)*	0.006
35 – 49 years	83 (26.86%)	1.00		
Ever tested for HIV				
Yes	166 (53.72%)	4.59 (2.73, 7.71) *	3.51 (1.89, 6.51)*	0.000
No	143 (46.28%)	1.00		
Agree that HIV CT is important				
Yes	300 (97.1%)	3.74 (1.51, 9.30) *	2.09 (0.41, 10.8)	0.378
No	9 (2.9%)	1.00		
STI patients' perception of contracting the HIV infection (n=278)				
No chance	163 (58.6%)	0.90 (0.44, 1.84)	0.85 (0.38, 1.90)	0.689
Small chance	36 (12.9)	0.48 (0.21, 1.12)	0.34 (0.13, 0.90)*	0.030
Moderate chance	26 (9.4%)	0.39 (0.16, 0.96) *	0.27 (0.10, 0.74)*	0.011

High chance	53 (19.1%)	1.00	
Control of STIs help in the prevention of HIV/AIDS.			
Yes	133 (43.04%)	2.34 (1.42, 3.85) *	1.83 (0.97, 3.43)
0.062			
No	34 (11%)	1.52 (0.73, 3.19)	1.07 (0.43, 2.67)
0.877			
I don't know	142 (45.95%)	1.00	
HIV/AIDS can be cured			
Yes	35 (11.33%)	3.70 (1.24, 11.09) *	1.56 (0.38, 6.41)
0.539			
No	240 (77.67%)	1.48 (0.79, 2.75)	0.66 (0.25, 1.73)
0.402			
I don't know	34 (11%)	1.00	
PLWHA should be quarantined			
Yes	23 (7.44%)	10.22 (1.81, 57.69) *	7.81 (0.64, 95.5)
0.138			
No	277 (89.64%)	2.49 (0.93, 6.62)	1.85 (0.25, 13.8)
0.548			
I don't know	9 (2.91%)	1.00	

* Statistically significant association has occurred.

V. Discussion

This study was carried out to assess the preparedness of STI patients for HIV CT programmmes and specifically to describe factors favoring willingness towards HIV CT. The response rate was higher (99.05%), compared to other studies conducted in Harar Town (39) and North- and South-Gondar Administrative Zones (40). This may be, firstly, because the interviewers were health professionals probably with lots of experience in counseling,

secondly, because STI patients were told before the interview that the results of the study would contribute to improving the available STI/HIV/AIDS services (including the ART service), and, thirdly, most questionnaires were completed while patients were seen at the OPD, so little time was spent for the interview.

According to the findings of the present study, almost three quarters (73.9%) of all the respondents said that they would be willing to undergo HIV CT at the time or 3 months after their STI diagnosis if they were offered by health care service providers, a comparable finding with that of the Ethiopian BSS 2002 (31) and with the study conducted among pregnant mothers in Uganda (28). This finding is however, lower than other study findings conducted in North-west Ethiopia (32), Harar Town (33), Dabat High School Students (34), and among TB patients in North Gondar Administrative Zone (15). But, the result of this study is higher compared to similar studies done in the US and UK, where voluntary HIV testing rates among STI clinic attendees were found to be 58% and 18%, respectively (30,29). The higher figure from this study compared to the US and UK studies may partly be due to the fact that whiles the US and UK studies determine VCT acceptance, this study specifically assessed willingness to HIV CT. As the methodologies used for the surveys and the study subjects are different, they are not meant for strict comparison, however. Moreover, 95.2% (398/418) of STI patients had the knowledge of the importance of checking ones own HIV status. Nevertheless, it is generally assumed that intention did predict performing specific HIV-preventive behavior, and if these attitudes of STI patients could be practical on the actual ground, it would be highly likely to be taken as indication of the need for promotion and expansion of sustained and strong provider initiated HIV CT service to the public at large, and STI patients in particular.

Targeting the STI patients, who showed their willingness to test for HIV at the time or 3 months after their STI diagnosis, is important as it will lengthen the “diagnosis interval” of patients testing HIV positive thereby conferring a better outcome, with respect to ART; identify patients with recent concurrent acquisition of HIV and a STI, entering a highly infective sero-conversion phase; identify individuals with undiagnosed, established HIV infection and a newly acquired STI which promotes higher infectivity due to increased HIV viral shedding into genital secretions (29). Moreover, knowledge of HIV status helps HIV negative STI patients to make specific decisions to reduce risk and increase safer sex practices

so that they can remain disease free. For those who are HIV infected, knowledge of their status allows them to take action to protect their sexual partners, to access treatment, and to plan for the future (16).

A number of socio-demographic, knowledge, attitude and behavioral factors were evaluated to identify those factors associated with willingness towards HIV CT, and based on those factors to target individuals with increased likelihood of being willing to have HIV CT for subsequent and appropriate HIV CT interventions. Accordingly, 'ever tested for HIV' was found to be significantly and positively associated with willingness towards HIV CT (p-value, 0.000). Analysis of 'ever tested for HIV' with respect to willingness towards HIV CT showed that those STI patients who reported ever had an HIV test preceding the survey were about 4-times more likely to be willing to have HIV CT at the time or 3 months after their STI diagnosis than those who didn't have previous HIV CT (OR, 3.51; 95% CI, 1.89, 6.51; P-value, 0.000). Even though showing willingness to have HIV CT has its own public health importance, it is likely that this high rate of positive intention to repeat HIV CT may reflect a desire for reassurance among HIV-uninfected persons and others may have denied knowledge of their serostatus. Moreover, this may also suggest that, those HIV-negative STI patients, who are more likely to have positive intention to repeat HIV CT may assume that they have been fortunate in their choice of partners, or believe themselves to be immune to HIV, and these misconceptions may lead to persistent risk behaviors. There is, therefore, an urgent need to correct these misapprehensions through appropriate IEC interventions as deemed necessary.

Nearly three-fourth (73.1%) of STI patients who showed their willingness to have HIV CT were in the age groups 15-24 and 25-34 years. Furthermore, significant association was found between willingness towards HIV CT and age groups 15 – 34 and 35 – 49 years. Those STI patients in the age group 15–24 and 25-34 years were 5-times (OR, 5.27; 95% CI, 2.33-11.9; P-value, 0.000) and 2-times (OR, 2.43; 95% CI, 1.30-4.56; P-value, 0.006) more likely to be willing to have HIV CT at the time or 3 months after their STI diagnosis than those in the age group of 35-49 years, respectively. This is perhaps a good opportunity for early detection of HIV, given that the age group 15-24 years has the highest HIV prevalence of all age groups in Ethiopia [3]. Also it allows them to take action to protect their sexual partners, to access

treatment, and to plan for the future. However, the national HIV CT policy of Ethiopia considers the minimum age for giving consent for HIV CT to be 18 years (41). Their intention to have an HIV CT may be due to better access to information through clubs, public gatherings and other types of institutional media. This finding is in accordance with other studies done in other places in Ethiopia (35, 40). Nevertheless, since this age group is highly sexually active and potentially at high risk for HIV infection, it clearly indicates reconsideration of the minimum age for giving consent for HIV CT that might enable expansion of the service to this vulnerable age group.

The vast majority (97.4%) of the STI patients confirmed the fact that they had heard of HIV/AIDS, which is comparable with the 2005 round of the Ethiopian Behavioral Surveillance Survey [42] and Ethiopian DHS 2005 [16]. Nearly 93% of the study subjects knew at least one prevention method. Moreover, 61.2% of the STI patients identified all the three major methods for preventing HIV/AIDS, which is a little bit higher than that of Ethiopian BSS Round two [42]. However, misconceptions about transmission of HIV from person to person, especially local misconceptions like "eating uncooked egg laid by a chicken that has swallowed a used condom could transmit HIV" and "mosquito bites could spread HIV" are higher. Overall, 43.8% of the STI patients had at least one misconception, a comparable finding with that of Ethiopian BSS Round two [42]. The results from this survey also indicated that despite higher level of knowledge of at least one preventive method, there was still low comprehensive knowledge of 38%. According to the EDHS 2005 results, 16 percent of women and 30 percent of men in Ethiopia had comprehensive knowledge of HIV/AIDS prevention and transmission [16]. Although the vast majority of subjects included in this study claimed that they had heard of HIV/AIDS, the investigation done on their knowledge of the modes of transmission and preventive measures indicated the fact that most of the interviewed STI patients were lacking the correct knowledge. This indicates the prevailing fact among our population in general, and STI patients in particular.

The protective effects of 'staying with only one uninfected faithful partner' and 'abstaining from sexual intercourse' against HIV/AIDS were responded by 84% and 86.1% of the STI patients, respectively. This has to be strengthened and the impact should be studied. Notably, however, nearly three-fourths of the STI patients didn't use condoms during the past 12 months. Moreover, only 11.8% of the STI patients reported that they had used condoms

consistently during sex. This finding is very much lower than the findings reported from Ethiopian DHS 2005 [16] and the results from the 2005 Ethiopian BSS [42]. Nevertheless, it was learned from this study that quite a big number of the respondents (30.1%) did not know (accept) the fact that people could protect themselves from HIV by using condoms correctly every time they had sex, a finding lower than that of the Ethiopian DHS 2005 [16]. Also, reported condom use cannot be assumed to be "correct condom use." Thus, it is not surprising that the association between condom use and sexually transmitted infection levels is not uniform among the study subjects.

Information about the incidence of sexually transmitted infections (STIs) is not only useful as a marker of unprotected sexual intercourse, but also as a cofactor for HIV transmission. Therefore, STI patients were asked whether they had had lifetime STI treatment history. Accordingly, thirty percent of the study subjects reported to ever been treated for STIs, of which 68.3% had history of STI treatment for >=2 STI episodes where as 31.8% had only one STI treatment history. This finding is higher than that obtained from BSS Ethiopia, 2002 [31]. This difference may partly be due to the fact that the BSS findings tried to assess STI episodes during the previous 12 months only, while this study has asked lifetime STI treatment history. In addition, this study was conducted in an urban setting while the BSS was done both in urban and rural areas. Nevertheless, a higher proportion of STI patients were given new STI diagnoses, indicating that they are continuing to engage in risk behaviors that may transmit HIV or other STIs to their sexual partners. HIV risk is also assumed to increase with the number of lifetime STIs that an individual has [25] These data suggest that all STI patients should be counseled intensively about reducing their risks for transmitting or acquiring HIV and other STIs, specifically they should be provided with HIV testing and patient-centered risk reduction counseling, which has been shown to prevent new STIs [30].

Knowledge and beliefs about HIV/AIDS affect how people treat those they know to be living with HIV/AIDS. In this study, various questions relating to stigma and discrimination were used to assess STI patients' attitudes towards PLWHA. The majority of STI patients tended to express more positive attitudes in response to the questions concerning behavior towards HIV-infected relatives and to the questions about HIV infected shopkeepers. Nevertheless, a considerable amount of discrimination towards PLWHA was observed. Overall, 33.3% of the respondents had at least one stigmatizing attitude towards PLWHA, which is lower than that

of the Ethiopian BSS, 2002 [31]. This may partly be due to the fact that this study was conducted in an urban setting where the level of awareness towards HIV/AIDS is relatively better. Furthermore, 20% of STI patients were not willing to share a meal with someone who is identified as having HIV/AIDS, compared to Ethiopian BSS, 2002 [31]. Because AIDS related stigma would hamper the ability of individual STI patients and the society as a whole to respond effectively to the epidemic, understanding its social and psychological impact is of critical importance.

VI. Strengths and Limitations of the Study

Strengths:

1. This study has applied a standardized, pre-tested structured questionnaire which has been used by Family Health International for national Behavioral Surveillance Survey, and WHO. This has great importance in comparing the findings and can be considered as one of the strengths of the study.

2. Data collectors were health professionals who have taken training on Syndromic STI management and had some previous experience of collecting survey data. This has probably great importance in keeping the validity of the data and can be taken as additional strength.

Limitations:

1. Certain questions are of course sensitive, and it is important to remember that respondents' answers are likely subject to social desirability bias.

2. The sampling method used was non-probability purposive sampling, which may affect the representative ness of the study.

3. The study was mainly focused on urban setting, and the rural population was underrepresented.

VII. Conclusions and Recommendations

❖ **Conclusions:** Based on the findings the following conclusions were made:

- The level of HIV testing was low despite a high level of willingness to undergo HIV counseling and testing at the time or 3 months after their STI diagnosis.
- More than a quarter of the respondents did not have knowledge of the three preventive methods.
- Misconceptions about HIV/AIDS existed amongst 43.3% of STI patients.
- The level of correct and consistent condom use was very low.
- Nearly one-third of the respondents had at least one stigmatizing attitude towards PLWHA.
- Those STI patients who had a previous HIV test and in the age group 15-34 years were more likely to be willing to have an HIV CT at the time or 3 months after their STI diagnosis. However, the current minimum age of consent for HIV CT is 18 years.
- Perceiving small or moderate chance of contracting the HIV infection was found to be strongly and negatively associated with willingness to HIV CT at the time or 3 months after the STI diagnosis.

❖ Recommendations:

- Increased awareness and expansion of HIV CT services are required to promote and sustain behavioral change. In particular, Provider Initiated HIV CT (PIHCT) services should be more accessible to subpopulations at particular risk of infection, such as STI patients.
- The results from this survey showed that HIV counseling and testing programs currently in place in many of government health facilities participating in this survey are not reaching substantial numbers of patients, including many who have new STIs and unaware that they are infected with HIV or not. Moreover, HIV counseling and testing services are available in all of the health facilities participating in this survey but are not necessarily integrated with other STI services. Thus, the available HIV CT services should be better integrated so that more STI patients who were offered HIV

testing would likely accept it, and more patients who are HIV positive could be identified, counseled, and referred for treatment. Furthermore, given the large volume of patients seen in clinical facilities and human resource constraints, an integrated HIV CT service delivery model seems the most practical.

- Strengthening or establishment of programs promoting the use of condoms, particularly programs targeting STI patients, should be a high priority. Governmental and non-governmental institutions operating in the area could organize these programs; moreover, health workers could facilitate implementation of the programs.

- Health professionals should be trained to encourage a high offer rate of HIV testing to all patients, especially targeting subpopulations at particular risk of HIV infection, such as STI patients.

- Current information, education and communication (IEC) activities need to address misconceptions and stigmatizing attitudes towards PLWHA that prevailed among STI patients, and should be evaluated with a view to enhance behavioral change.

- The lower age limit for giving HIV CT consent needs to be revised by policy makers.

- An "opt out" policy of HIV testing is recommended for those patients with a confirmed STI.

- Reproductive health services should also give more emphasis towards the prevention of STIs in the general population.

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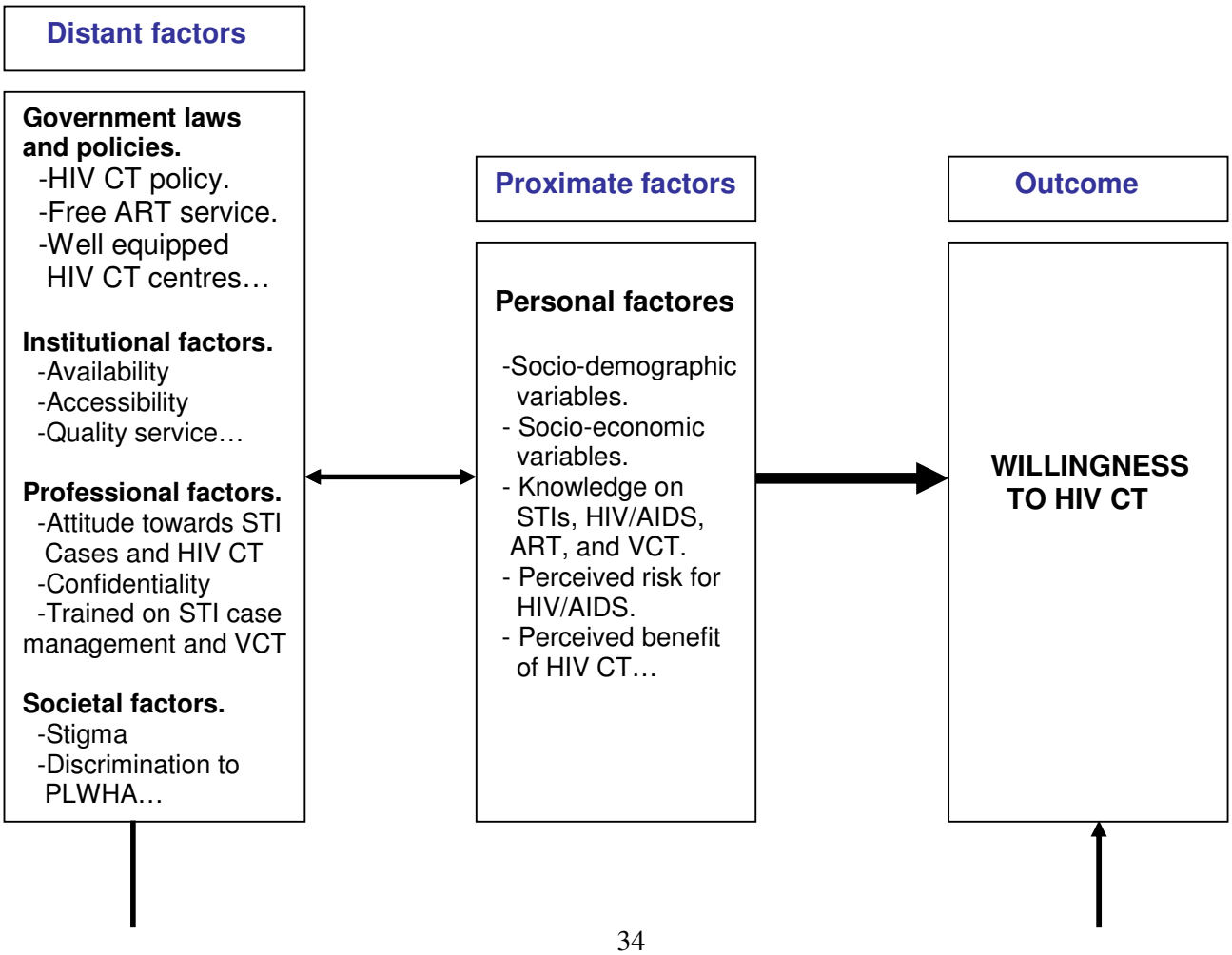
IX. ANNEX 1.

CONCEPTUAL FRAMEWORK ON WILLINGNESS OF STI CASES TOWARDS HIV CT.



X. ANNEX 2.

TEN – QUESTION STI/HIV RISK ASSESSMENT

- **Framing statement:** In order to provide the best care for you today and to understand your risk for certain infections, it is necessary for us to talk about your sexual behavior.
- **Screening question:**

(1) Do you have any reason to think you might have a sexually transmitted disease? If so, what reason?

(2) For all adolescents <18 years old: Have you begun having any kind of sex yet?

- **STI History**:

(3) Have you ever had any STIs or any genital infections? If so, which ones?

- **Sexual Preference:**

(4) Have you had sex with men, women, or both?

- **Injection drug use:**

(5) Have you ever injected yourself ("shot up") with drugs? (If yes, have you ever shared needles or injection equipment?)

(6) Have you ever had sex with a gay or bisexual man or with any one who had ever injected drugs?

- **Characteristics of partner(s):**

(7) Has your sex partner(s) had any sexually transmitted infections? If so, which ones?

❖ STI symptoms checklist:

(8) Have you recently developed any of these symptoms?

- For men: (a) discharge of pus (or drip) from the penis.
  (b) Genital sores (ulcers) or rash.
- For women: (a) abnormal vaginal discharge (increased amount, abnormal odor, abnormal yellow color)
  (b) Genital sores (ulcers), rash, or itching.

❖ **Sexual practices**, past two months (for patients answering YES to any of the above questions, to guide examination and testing :)

(9) Now I would like to ask what parts of your body may have been sexually exposed to an STI (eg. Your penis, mouth, vagina, anus)?

❖ **Query about interest in STI screening tests** (for patients answering NO to all of the above questions):

(10) Would you like to be tested for HIV or any other STIs today? (If yes, clinician can explore which STI and why)

XI. ANNEX 3

Questionnaire (English Version)

Addis Ababa University
Faculty of Medicine
Department of Community Health
QUESTIONNAIRE ON

Assessment of factors affecting willingness to HIV CT among patients presenting with the conventional Sexually Transmitted Infections (STIs) in Addis Ababa.

01. Name of Health Centre _____
02. Questionnaire identification no. _____
03. Address of the patient: _____

INTRODUCTION: My name is _____. I am working here in _____ Health Centre as a counselor/physician. I would like to inform you that you and I would have a short discussion concerning this study. Before we go to our discussion, I will request you to listen carefully to what I am going to read to you about the purpose and general condition of the study and tell me whether you agree or disagree to participate in this study.

Consent form

The purpose of this study is to assess factors dictating willingness towards HIV CT among patients presenting with the conventional sexually transmitted infections in Addis Ababa. The study will be conducted through interviews. I am asking you for a little of your time, about 25 - 35 minutes, to help us in this study. In the end, it is hoped that the information you give us could help to design appropriate STI/HIV health services for this health centre and other similar set-ups. The interview involves intimate and private life questions. I would like to assure you that this privacy should strictly be maintained throughout. A code number will identify every participant and no name will be used. Your responses to any of the questions will not be given to anyone else and no reports of the study will ever identify you. If a report of results is published, only information about the total group will appear.

The interview is voluntary. Your participation / non-participation, or refusal to respond to the questions will have no effect now or in the future on services that you or any member of your family may receive from any service providers.

Are you willing to participate in this study?
1. [ ] Yes. 2. [ ] No

Thank you!!
If the study subject agrees to participate in the study, start the interview.
03. Interviewer signature certifying that informed consent has been given verbally by the respondent.

Name _____ Signature _____Date _____.

NB:

1. No need of enforcing the patients to be included in the study.
2. Please register the age and sex of study subjects who refuse to participate in the study.

D	Section1. Demographic information		
No.	**Questions**	**Answers**	**Code**
101	Record sex of the respondent	1. Male 2. Female	**D1**
102	How old were you at your last birthday?	1.---------- Years (age in completed years) 88.Don't know 99.No response	**D2**
103	When were you born?	Date…….....Month…… Year……	**D3**
104	What is your religion? **(Read 1-3 for those of Christians)**	1.Orthodox Christian 4.Muslim 2.Protestant 5.Other(specify) 3.Catholic _____	**D4**
105	To which ethnic group do you belong?	1.Amhara 4.Guraghee 2.Oromoo 5.Others(specify) 3.Tigree _____	**D5**
106	What is your current marital status?	1.Currently Married 2.Unmarried(single) 3.Separated 4.Divorced 5.Widowed 6.Living with a co-habiting partner 7.Others(specify)_____	**D6**
107	What is your current completed educational status? If no formal education put **00.**	1._____grade complete.	**D7**
108	What is your current occupation?	1.Jobless ……..Skip to Q. 201	**D8**

	(specifically with in the last 12 months)	2.Daily laborer 3.Government employee 4. Merchant 5.Farmer 6.Comercial sex worker 7.Driver 8.House wife 9. Student 10. Military 11.Police 12.Health worker 13. Teacher 14. Maid 15. Pensioner 16.Guard 17.Other (specify)_____	
109	What is your average household income per month?	1.Less than 100 Eth. Birr 2.100-300 Eth. Birr 3.300Eth. Birr and above 4.No permanent income 88. Not correctly known 99. I don't know	**D9**

K	**Section II: STIs/HIV/AIDS Knowledge, Attitudes, and Beliefs**		
No.	**Questions**	**Answers**	**Code**
201	Have you ever heard about infections that can be transmitted through sexual contact?	1.Yes 2. No.....Go to Q.204 99.No response	**K1**
202	Please describe the symptoms of sexually transmitted infections in **women.** **[Do not read answers aloud.** **For each symptom, circle '1' if mentioned. Circle '2' if not mentioned.]**	**Y N** a) abdominal pain 1 2 b) Increased genital discharge 1 2 c) foul smelling genital discharge 1 2 d) burning pain on urination 1 2 e) genital ulcers/sores 1 2 f) swellings in groin area 1 2 g) genital itching 1 2 h) others(specify) _____ i) I don't know 88 j) No response 99	**K2a** **K2b** **K2c** **K2d** **K2e** **K2f** **K2g** **K2h** **K2i** **K2j**
203	Please describe the symptoms of sexually transmitted infections in	**Y N** a) genital discharge 1 2	**K3a**

	men. **[Do not read answers aloud.** **For each symptom, circle '1' if mentioned. Circle '2' if not mentioned.]**	b) burning pain on urination 1 2 c) genital ulcers/sores 1 2 d) swellings in groin area 1 2 e) others(specify) _____ f) I don't know 88 g) No response 99	**K3b** **K3c** **K3d** **K3e** **K3f** **K3g**
204	During the past 12 months, have you ever had a bad smelling or strange genital discharge?	1.Yes 2. No.....Go to 206 99.No response	**K4**
205	If "yes" to Q.204, did you seek any kind of advice or treatment?	1.Yes 2. No 99.No response	**K5**
206	During the past 12 months, have you ever had a genital ulcer or sore?	1.Yes 2. No.....Go to Q.208 99.No response	**K6**
207	If "yes" to Q.206, did you seek any kind of advice or treatment?	1.Yes 2. No 99.No response	**K7**
208	The last time you had [problem mentioned in 204, or206], Where did you go? Any other place? **[RECORD ALL SOURCES MENTIONED.]**	**1.PUBLIC MEDICAL SECTOR** a)Govt. Hospital b)Govt. Health centre c)VCT centre d)Family planning clinic e)Mobile clinic f)Other public _____ (please specify) **2.PRIVATE MEDICAL SECTOR** a)Priv. hosp/clinic/doctor b)VCT centre c)Pharmacy d)Other private _____ (please specify) **3.Traditional healer/Holly water** **4.OTHER (specify) _____**	**K81** **K81a** **K81b** **K81c** **K81d** **K81e** **K81f** **K82** **K82a** **K82b** **K82c** **K82d** **K83** **K84**
209	How many episodes of STIs did you encounter before (excluding the present problem), if any? **[Record the number of STI episodes for which advice / treatment was sought]**	1._____episodes. 2.I never had STI before 88. I don't remember 99. No response	**K9**

210	Which segment of the population is at risk of getting STIs? **[DON'T READ ANSWERS ALOUD.MULTIPLE RESPONSES ARE ALLOWED]**	1. Those having multiple sexual partners. 2. Those practicing unprotected sex. 3.Commercial Sex Workers 4.Drivers 5.Military 6.Others (specify)_____ 88.I don't know 99.No response	**K10**
211	How someone can get (acquire) STIs? **[MULTIPLE RESPONSES ARE ALLOWED. DO NOT PROMPT FOR ANSWERS.]**	1.Urinating towards the moon/sun 2.Having unprotected sexual practices 3.Drinking contaminated water 4.Sharing of clothes 5.Others (specify)_____ 88.I don't know 99.No response	**K11**
212	Can most STIs be cured?	1.Yes 2.No 88.I don't know 99.No response	**K12**
213	Have you ever heard of HIV or the disease called AIDS?	1. Yes 2. No 99. No response	**K13**
214	Do you know anyone who is infected with HIV or who has died of AIDS?	1. Yes 2. NO 99. No response	**K14**
215	Do you think that a healthy-looking person can't be infected with HIV?	1. Yes 2. No 88. I don't know 99. No response	**K15**
The following 2 questions are about whether you feel you are at risk of being exposed to HIV.			
216	What are the chances that you have been exposed to HIV? Would you say there is no chance, Less chance, a moderate chance, or a high chance?	1.No chance 2.Less chance 3. Moderate chance ……Go to Q.218 4. High chance ……Go to Q.218 5. Already have HIV ……Go to Q.218 88. I don't know ……Go to Q.218 99. No response ……Go to Q.218	**K16**
217	Why do you think that there is no chance or a small chance that you have been exposed to HIV? **[MULTIPLE RESPONSES ARE ALLOWED.**	1.Abstains from sex 2.Always uses condoms 3.Has only one sexual partner 4.Limited number of sexual partners 5. Partner has no other sexual partner/s before. 6.No blood transfusion before	**K17**

	DO NOT PROMPT FOR ANSWERS.]	7.Partner looks healthy 8.Partner tested negative 9.Trusts partner 10.Other _____ (please specify)	
218	Can HIV/AIDS be cured?	1.Yes 2.No 88.I don't know 99.No response	**K18**
219	How is HIV/AIDS transmitted? **Multiple response is possible, Needs probing)**	1.Unprotected Sexual intercourse 2. Mother to fetus during pregnancy 3. Mother to child during breast-feeding. 4. Transfusion of infected blood 5. Sharing of sharp instruments with someone who is infected with HIV. 6. Shaking hands with PLWHA 7.Wearing clothes of a PLWHA 8.Sharing a meal with a PLWHA 9. Mosquito bite which has already fed on a person with AIDS. 10. Eating an egg from a chicken that has swallowed a condom. 11. Eating raw meat (raw "*kitfo"*) prepared by an HIV-infected person. 12.Other (Specify)---------- 88.I do not know 99.No response	**K19a** **K19b** **K19c** **K19d** **K19e** **K19f** **K19g** **K19h** **K19i** **K19j** **K19k** **K19l** **K19m** **K19n**
220	How can people protect themselves from getting HIV/AIDS? **(Multiple response is possible, Needs probing)**	1.Avoiding Sex (abstinence) 2. Using a condom correctly every time during sex. 3.Staying with only one uninfected partner faithful 4. By drinking local hard liquor and eating hot pepper. 5.Others (specify)_____ 88.I do not know 99.No response	**K20**
221	Does having many sexual partners increase a person's risk of being infected with the HIV virus?	1.Yes 2.No 88.I don't know 99.No response	**K21**
222	With what frequency did you and all of your regular partner (s) use a condom during the past 12 months?	1.Every time 2.Almost every time 3.Sometimes 4.Never used 99.No response	**K22**
223	Once infected with HIV virus,	1.Yes	**K23**

	can a person infect others for the rest of his/her life?	2.No 88.I don't know 99.No response	
224	Do you think that untreated STIs, particularly those involving ulcers or discharge, increase the risk of passing on or acquiring HIV during sex?	1.Yes 2.No 88.I don't know 99.No response	**K24**
225	Do you think that a person with untreated STIs is at risk of being infected with HIV?	1.Yes 2.No 88.I don't know 99.No response	**K25**
226	Do you think control of STIs help in the prevention of transmitting or acquiring HIV/AIDS?	1.Yes 2.No 88.I don't know 99.No response	**K26**

W	**Section 3. Willingness towards Voluntary HIV Counseling and Testing**		
No.	**Questions**	**Answers**	**Code**
301	Have you ever heard of voluntary HIV counseling and testing?	1.Yes 2. No……..Go to Q.303 99.No response	**W1**
302	Where did you get this information? **(Multiple response is possible, Needs probing)**	1.Health worker/facility 2. Mass media(Radio, Television) 3. School 4.Friends 5.Family 6.Neighbours 7. Others (specify)……	**W2**
303	Do you agree that HIV CT is important?	1.Yes 2. No……Go to Q.305 88.I don't know 99.No response	**W3**
304	What are reasons for the feeling that HIV CT is important? **(Multiple response is possible, Needs probing)**	1.To know the HIV status 2.To protect oneself from being infected 3.If positive, not to transmit to others 4.If positive, to get care and support 5.If positive, to get ART 6.To be free from stress 7.Other (specify)---------- 88.I do not know 99.No response	**W4a** **W4b** **W4c** **W4d** **W4e** **W4f** **W4g** **W4h** **W4i**
305	Do you agree that any one should check his /her HIV sero-status?	1.Yes 2.No 88.I don't know 99.No response	**W5**
306	Who can benefit more from HIV CT? **(Multiple response is possible,**	1. Female commercial sex workers 2.Health workers 3.Accidentally exposed persons	**W6a** **W6b** **W6c**

	Needs probing)	4.Pregnant mothers 5. People with history of unprotected sexual intercourse. 6.Those with multiple sexual partners 7.STI patients 8.TB patients 9. Those who are engaged in homosexual (MSM) activity. 10.Drivers 11.Injectable Drug users 12.Others(specify)_____ 88.I don't know 99.No response	**W6d** **W6e** **W6f** **W6g** **W6h** **W6i** **W6j** **W6k** **W6l** **W6m** **W6n**
307	At which time should one be tested for HIV? **(Multiple response is possible, Needs probing)**	1.When one becomes sick 2.Before marriage 3.If only has/had multiple sexual partners 4. If only had history of unprotected sexual intercourse 5.At any time 6. Other (specify) …….. 88.I do not know 99.No responses	**W7**
308	Is it possible in your community for someone to get a **confidential** HIV test to find out if they are infected with HIV? **By confidential, I mean that no one will know the result if you don't want them to know it.**	1.Yes 2.No 88.I don't know 99.No response	**W8**
309	I don't want to know the result, but have you ever had an HIV test?	1. Yes. 2. No……Go to Q.313 99.No response	**W9**
310	What was the reason of having VCT?	1.Ordered by health worker 2.Donation of blood 3.Just to know HIV status 4.Death or illness of partner (former or current) 5.Premarital screening 6.Suspicion of infection 7.Just to know the HIV status during pregnancy 8.To travel abroad 9. Other (specify)…… 88.I don't know 99.No response	**W10**
311	Were you counseled before you undertook your HIV/AIDS test?	1.Yes 2.No 88.I don't know 99.No response	**W11**
312	Were you counseled after you had taken your HIV/AIDS test?	1.Yes 2.No 88.I don't know	**W12**

		99.No response	
313	If you are offered an HIV/AIDS counseling and testing, will you be willing to use it?	1. Yes……Go to Q.315 2. No 99.No response	**W13**
314	If your answer for question No.313 is "No", why don't you be willing to use it?	1.Not sure of the confidentiality 2.Don't want to know the result 3.Already had tested 4. HIV is not a priority problem among STI cases. 5.Other(specify)_____ 88.I don't know 99.No response	**W14**
315	If your answer for question No.313 is "Yes", how likely is that you will be willing to get an HIV blood test in the near future?(by now or with in the next three months)	1.Very likely 2.Somewhat likely 3.Not sure 88.I don't know 99.No response	**W15**
316	Which method of testing you prefer if confidential linked testing and Anonymous testing types are available?	1.Confidential linked testing 2. Anonymous testing 3.Others(specify)_____ 88.I don't know 99.No response	**W16**
317	Which types of HIV testing do you prefer if Voluntary Counseling and Testing, Diagnostic HIV counseling and testing, Routine offering of HIV counseling and testing and Mandatory HIV counseling and testing are available?	1. Voluntary HIV counseling and testing. 2. Diagnostic HIV counseling and testing. 3. Routine offering of HIV counseling and testing. 4. Mandatory HIV counseling and testing. 88.I don't know 99.No response	**W17**
318	Which way do you prefer to obtain the HIV test result?	1.Face-to-face (verbally) 2.Telephone 3.Secretive letter 4.Relative/Partner 5.Other (specify)_____ 88.I don't know 99.No response	**W18**

S	**Section 4. Stigma and discrimination items**		
No.	**Questions**	**Answers**	**Code**
401	Do you think that people living with HIV/AIDS should be quarantined?	1.Yes 2.No 88.I don't know 99.No response	**S1**
402	Would you be willing to share a meal with a person you knew had HIV/AIDS?	1.Yes 2.No 88.I don't know 99.No response	**S2**
403	Would you say you feel afraid of	1.Yes	**S3**

	PLWHA?	2.No 88.I don't know 99.No response	
404	The names of people with AIDS should be made public so that others can avoid them.	1.Strongly agree 2.Agree 3.Indifferent 4.Disagree 5.Strongly disagree	**S4**
405	Suppose you had a young child who was attending school where one of the students was known to have HIV, would you send your child to another school or leave him in the same school?	1. Leave the child in the same school. 2. Send the child to another school. 88. I am not sure. 99.No response	**S5**
406	Suppose you had a working place where one of the men/women working with you had HIV, would you be willing to work with him /her in the same work place.	1.Yes 2.No 88.I am not sure 99.No response	**S6**
407	If you knew a shopkeeper or food seller had HIV, would you buy food from them?	1.Yes 2.No 88.I am not sure 99.No response	**S7**
408	Suppose you had a family member who is infected with HIV, would you be willing to take care of him /her throughout?	1.Yes 2.No 3. Not sure 88.I don't know 99.No response	**S8**

1. Name of the supervisor……

2. Date……

3. Result: a) completed

b) Incomplete

c) Not cooperative

XII. ANNEX 4

Questionnaire (Amharic Version)

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103	¾}¨KÆuƒ" k"' ¨`" ¯S} Ul[ƒ Ã"Ñ\˜::	k" ---------- ¨` ---------- ¯S} Ul[ƒ ----------	D3
104	¾¾ƒ—¨< U'ƒ }ŸÃ '-ƒ; **(¡`e+Á" ŸJ'< Ÿ1-3 Ã'uwL†¨<)**	1. *` „Ê¡e ¡`e+Á" 2. ýa,e"ƒ 3. "„K=¡ 4.S<eK=U 5. K?L(ÃÑKê) ----------	D4
105	¾¾ƒ—¨< wN?[cw ›vM '-ƒ;	1.›T^ 2.*aV 3.ƒÓ_ 4.Ñ<^Ñ@ 5. K?L(ÃÑKê) ----------	D5
106	¾Òw‰ G<'@	1. ÁÑv/‹ 2. ÁLÑv/‹ 3. ÁÑu< J'¨< 'Ñ` Ó" ŸƒÇ` ›Ò^†¨< Ò` ›w[¨< ¾TÃ•\:: 4. ¾ð/‹ 5. ¾V}‹uƒ/¾V}vƒ 6. ulÒ© S"ÑÉ dÃÒu< ›w[¨< ¾T>•\ 7. K?L (ÃÑKê) ---------- 99. ULi ¾K˜U	D6

107	ÁÖ“kl*ƒ* ¾*ƒ*UI`*ƒ* Å[Í (¡õM) ÃÑKê:: SÅu— *ƒ*UI`*ƒ* "M}Ÿ}K< **00** ÃVL::	---------- ¡õM::	**D7**
108	vKñ*ƒ* 12 ¨^*ƒ* ¬eØ uª'—'*ƒ* ¾}cT\u*ƒ* e^ (S}ÇÅ]Á-) U”É” '¨<;	1. e^ ¾K?K¨< ... ¨Å 201 2. ¾k” c^}— 3. ¾S”Óe*ƒ* (¾u=a) c^}— 4. 'ÒÈ 5. Ñu_ 6. c?}— ›Ç] 7. g<ô` 8. ¾u?*ƒ* Su?*ƒ* 9. }T] 10. ¨Å` (SŸLŸÁ c^©*ƒ* ›vM) 11. þK=e 12. ¾Ö?“ vKS<Á 13. ›e}T] 14. ¾u?*ƒ* ¨<eØ c^}— 15. Ö<[}— 16. ¾Øun c^}— 17. K?L (ÃÑKê) ----------	**D8**
109	¨`**H©¨<** ¾u?}cw S}ÇÅ]Á Ñu=- u›T"Ã U” ÁIM '¨<;	1. ŸS„ w` Á'c 2. ŸS„ eŸ fe*ƒ* S„ w` 3. Ÿfe*ƒ* S„ w` uLÃ 4. sT> Ñu= ¾K?K¨< 88. u*ƒ*¡¡M ›Ã¨pU 99. ULi ¾K˜U::	**D9**

K	**¡õM 2: Ÿ²=l kØKA ÁK<*ƒ* ØÁo-‹ eK ›vK²` ui-‹“ ›?‹ ›Ã y= ›?Ée ui ÁK-*ƒ*” ¨<k*ƒ*' ›e}Á¾*ƒ*“ ›SK"Ÿ*ƒ* Ã'“M::**		
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201	uÓw[eÒ Ó”–<'*ƒ* ›T"˜"*ƒ* Ÿc¨< ¨Å c¨< eKT>}LKñ ui-‹ cU}¨< Á¨<nK<;	1. ›- cUŠ ›¬nKG< 2. ¾KU cUŠ ›L¬pU ... ¨Å 204 99. ULi ¾K˜U	**K1**
202	**uc?„‹** LÃ ¾T>¿*ƒ*” ¾›vK²` ui UM¡„‹” u='Ó\˜::  **(SMf‹” ›Á”wu<:: K Á”Ç”Æ ¾ui UM¡*ƒ* Ÿ}ÑKç #1$ lØ` ÃŸuw' "M}ÑKç #2$ lØ` ÃŸuw)**	**›- ¾KU** G/ ¾JÉ lSU 1 2 K/ SÖ'< ¾u³ ¾wM*ƒ* ðdi S•` 1 2 N/ SØö i ÁK¨< ¾wM*ƒ* ðdi S•` 1 2 S/ i”*ƒ* uT>g“u*ƒ* ¨p*ƒ* ¾SqØqØ eT@*ƒ* 1 2 W/ ¾wM*ƒ* SlWM 1 2 [/ õ`”*ƒƒ* ›"vu= wÖ*ƒ* S•` 1 2 c/ wM*ƒ*” TdŸ¡ 1 2 g/ K?L (ÃÑKê)---------- k/ ›L¨<pU 88 u/ ULi ¾K˜U 99	**K2a** **K2b** **K2c** **K2d** **K2e** **K2f** **K2g** **K2h** **K2i** **K2j**
203	**u¨”Ê‹** LÃ ¾T>¿*ƒ*” ¾›vL²` ui UM¡„‹” u=ÑMèM˜::  **(SMf‹” ›Á”wu<:: K Á”Ç”Æ ¾ui UM¡*ƒ* Ÿ}ÑKç #1$ lØ` ÃŸuw ' "M}ÑKç #2$ lØ`**	**›- ¾KU** G/ ¾wM*ƒ* ðdi S•` 1 2 K/ i”*ƒ* uT>g“u*ƒ* ¨p*ƒ* ¾SqØqØ eT@*ƒ* 1 2 N/ ¾wM*ƒ* SlcM 1 2	**K3a** **K3b** **K3c**

	ÃŸuw)	S/ õ`"*ƒ ƒ* ›"vu= wÖ*ƒ* S•` 1 2 W/ K?L(ÃÑKê)---------- [/ ›L¨<pU 88 c/ ULi ¾K˜U 99	**K3d** **K3e** **K3f** **K3g**
204	vKñ*ƒ* 12 ¨^*ƒ* ¨<eØ **ÁM}KSÅ ¨Ã"U SØö i ÁK¨<** **¾wM*ƒ* ðdi** •al/i Á¨<nM;	1. ›- 2. ¾KU..... ¨Å 206 99. ULi ¾K˜U	**K4**
205	SMe- #›-$ ŸJ' K‹Ó`- ¾vKS<Á U¡` ¨Ã"U I¡U" ›Ó˜}¨< 'u`;	1. ›- 2. ¾KU 99. ULi ¾K˜U	**K5**
206	vKñ*ƒ* 12 ¨^*ƒ* ¨<eØ **¾wM*ƒ* leK*ƒ*** •`l/i Á¨<nM;	1. ›- 2. ¾KU ..... ¨Å 208 99. ULi ¾K˜U	**K6**
207	SMe- #›-$ ŸJ' K‹Ó`- ¾vKS<Á U¡` ¨Ã"U I¡U" ›Ó˜}¨< 'u`;	1. ›- 2. ¾KU 99. ULi ¾K˜U	**K7**
208	uØÁo lØ` 204 ¨Ã"U 206 ¾}Ökc¨< ‹Ó` vÒÖS-*ƒ* ¨p*ƒ* ¾vKS<Á U¡` ¨ÃU I¡U" KTÓ–*ƒ* ¾H@Æ*ƒ* ¨È*ƒ* 'u`; **(¾}Ökc<*ƒ*" G<K<"U T°ŸL*ƒ* ÃS´Óu<::)**	1. ¾Q´w ¾I¡U" T°ŸM G/ ¾S"Óe*ƒ* Jeú M K/ ¾S"Óe*ƒ* Ö?"×u=Á N/ uðnÅ˜"*ƒ* LÃ ¾}Sc[} ¾U¡` ›ÑMÓKA*ƒ* SeÝ T°ŸM S/ ¾u?}cw pÉ ›ÑMÓKA*ƒ* cÜ ¡K='>¡ W/ }"kdni ¡K='>¡ [/ K?L ¾I´w (ÃÑKê) ---------- 2. ¾ÓM ¾I¡U" SeÝ T°ŸM G/ ¾ÓM Jeú M/¡K='>¡/ Ê¡}` K/ uðnÅ˜"*ƒ* LÃ ¾}Sc[} ¾U¡` ›ÑMÓKA*ƒ* SeÝ T°ŸM N/ ó`Tc= S/ K?L (ÃÑKê) ---------- **3. ¾vlM I¡U" ›ªm/çuM** 4. K?L ¾ÓM (ÃÑKê) ----------	**K81** **K81a** **K81b** **K81c** **K81d** **K81e** **K81f** **K82** **K82a** **K82b** **K82c** **K82d** **K83** **K84**
209	¾›G<'<" ‹Ó` dÃÚU` Ÿ²=I uò*ƒ* KU" ÁIM Ñ>²? K›vK²` ui ‹Ó` U¡"Á*ƒ* ¾vKS<Á U¡` ¨Ã"U I¡U" }Å`ÔM-*ƒ* Á¨<nM; **(K›vL²` ui U¡"Á*ƒ* ¾vKS<Á U¡`** **¨Ã"U I¡U" ¾}Å[ÑL†¨<" w‰ ÃS´Óu<)**	1. ---------- Ñ>²? 2. Ÿ²=I uò*ƒ* u›vK²` ui UT@ ›L¬pU 88. ›Le¬eU 99. ULi ¾K˜U	**K9**
210	K›vK²` ui-‹ }ÒLß ¾J"¨< ¾lw[}cw ¡õM ¾*ƒ*—¨< ÃJ"M wK¨< ÁU"K<; **(Ÿ›"É uLÃ SMe SeÖ*ƒ* Ã‰LM::** **SMf‹" ›Á"wu<::)**	1. Ÿ›"É uLÃ ¾¨c=w ÕÅ— ÁL†¨< c-‹ 2. Ø"no ¾ÔÅK¨< ¾Ów[eÒ Ó"–<*ƒ* ¾T>ðêS< c-‹:: 3. c?}— ›Ç]-‹ 4. g<ôa‹ 5. ¨Åa‹ 6. K?L (ÃÑKê) ---------- 88. ›L¨<pU	**K10**

		99. ULi ¾K˜U	
211	›”É c¨< K›vK²` ui-‹ uÃuMØ }ÒLß ¾T>J”¨< ”È*ƒ* ’¨<; **(Ÿ›”É uLÃ SMe SeÖ*ƒ* Ã‰LM:: <u>SMf‹” ›Á”wu</u><::)**	1. ¨Å ìNÃ /Ú[n µa uSi“*ƒ* 2. Ø”no ¾ÔÅK¨< ¾Ów[eÒ Ó”–<’*ƒ* uSðçU:: 3. ¾}uŸK ¨<H uSÖ×*ƒ* 4. Mwe uÒ^ uSMue 5. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. ULi ¾K˜U	**K11**
212	K›w³—‹ ¾›vL²` ui-‹ ðªi SÉ’>*ƒ* ÁL†¨< ÃSeM-M;	1. ›- 2. ¾KU 88. ›L¨<pU 99. ULi ¾K˜U	**K12**
213	›?‹ ›Ã y=/›?Ée eKT>vM ui cU}¨< Á¨<nK<;	1. ›- 2. cUŠ ›L¨<pU 99. ULi ¾K˜U	**K13**
214	Ÿ›?‹ ›Ã y= Ò` ¾T>•` ›MÁU u›?Ée ui ¾SS ¨Ã”U uui¨< ¾V} c¨< Á¨<nK<;	1. ›- ›¬nKG< 2. ¾KU ›L¨<pU 99. ULi ¾K˜U	**K14**
215	Ö?’— ¾T>SeK< c-‹ ¾›?Ée ›Uß¨< zÃ[e uÅT†¨< ¨<eØ K=•`v†¨< ›Ã‹K<U”;	1. ›- K=•`v†¨< ›Ã‹MU 2. ¾KU K=•`v†¨< Ã‹LM 88. ›L¨<pU 99. SMe ¾K˜U	**K15**
Ÿ²=I ¾T>Ÿ}K<*ƒ* G<K*ƒ* ØÁo-‹ `e- K›?‹ ›Ã y=/›?Ée }ÒLß eKSJ”-“ eLKSJ”- ¾T>cT-*ƒ*” eT@*ƒ* u}SKŸ} ÃJ“M::			
216	K›?‹ ›Ã y=/›?Ée ui ¾SÒKØ ÉM-” ”È*ƒ* ÃÑMè M;	1. }ÒLß ›ÃÅKG<U 2. uØm~ }ÒLß MJ” ‹LKG<:: 3. uS"ŸK— Å[Í }ÒLß MJ” ‹LKG< 4. uŸõ}— Å[Í }ÒLß MJ” ‹LKG< 5. ¾›?‹ ›Ã y= zÃ[e uÅT@ ¨<eØ S•\” ›¨<o›KG<:: 88. ›L¨<pU 99. ULi ¾K˜U	**K16** ¨Å..218
217	K›?‹ ›Ã y=/›?Ée ¾SÒKØ ÉM- Ø*mƒ* ’¨< ¨Ã”U S<K< uS<K< }ÒLß ›ÃÅKG<U ÁK<*ƒ* ŸU” ›”é` ’¨<; **(Ÿ›”É uLÃ SMe SeÖ*ƒ* Ã‰LM:: ¾}Ökc<*ƒ*” SMf‹ w‰ Á¡wu<)**	1. ŸÓw[eÒ Ó”–<’*ƒ* eK kwG<:: 2. ¢”ÊU G<M Ñ>²? eKUÖkU 3. ›”É ¾¨c=w ÕÅ— w‰ eLK˜ 4. ¾¨c=w ÕÅ™Š lØ^†¨< ¨<e” uSJ’< 5. ¾¨c=w ÕÅ—Â Ÿ²=I kÅU K?L ¾¨c=w ÕÅ— eKK?K¨</eKK?L*ƒ* 6. ¾ÅU MÑd }Å`ÔM˜U J’ ›É`Ñ@ eKTL¨<p:: 7. ¾¨c=w ÕÅ—Â Ö?“T eKT>SeM /eKU*ƒ*SeM 8. ¾¨c=w ÕÅ—Â ¾›?Ée U`S^ ¨<Ö?*ƒ* ’@Ò+{ eKJ’ 9. Ÿ¨c=w ÕÅ—Â Ò` uS}TS” eKU”•` 10.K?L(ÃÑKê)----------	**K17**
218	K›?‹ ›Ã y=/›?Ée ðªi SÉ’>*ƒ* ÁK¨< ÃSeM-M;	1. ›-	**K18**

		2. ¾K¨<U 88. ›L¨<pU 99. ULi ¾K˜U	
219	›?‹ ›Ã y=/›Ée Ÿc¨< ¨Å c¨< ”È*ƒ* Ã}LKóM; **(Ÿ›”É uLÃ SMe SeÖ*ƒ* Ã‰LM:: ¾}²[²*ƒ*” SMf‹ K}ÖÁm¨< <u>Á”wu<</u>' ¾T>cÖ<*ƒ*” SMf‹ ÅÓV Á¡uu<)**	1. Ø”no uÔÅK¨< ¾Ów[eÒ Ó”–<’*ƒ* 2. Ÿ“*ƒ* ¨Å ê”e u`Ó´“ ¨p*ƒ* 3. Ÿ“*ƒ* ¨Å MÏ Ö<*ƒ* uTØv*ƒ* Ñ>²? 4. uzÃ[c< ¾}uŸK ÅU uSKÑe 5. eK U ¾J’< n-‹” zÃ[c< uÅS< ¨<eØ ŸT>•` c¨< Ò` uÒ^ uSÖkU 6. Ÿ›”É ¾›?‹ ›Ã y= zÃ[e uÅS< ¨<eØ "Ku*ƒ* c¨< Ò` u Ì uSÚuuØ 7. ¾›”É ¾›?‹ ›Ã y= zÃ[e uÅS< ¨<eØ ÁKu*ƒ*” c¨< Mwf‹ uSMue 8. Ÿ›”É ¾›?‹ ›Ã y= zÃ[e uÅS< ¨<eØ "Ku*ƒ* c¨< Ò` ›wa uSSÑw 9. ¾›?‹ ›Ã y= zÃ[e uÅS< ¨<eØ ÁKu*ƒ*” c¨< u’Åð‹ ¾¨v *ƒ*”˜ ›T"˜’*ƒ* 10. ¢”ÊU Ÿª Ö‹ Êa ¾}×K ”lLM uØ_¨</ dÃueM uSSÑw:: 11. ¾›?‹ ›Ã y= zÃ[e uÅS< ¨<eØ ÁKu*ƒ* c¨< Á²ÒË¬” Ø_ eÒ (¡*ƒ*ö) uSSÑw 12. K?L (ÃÑKê) ---------- 88. ›L¬pU 99. ULi ¾K˜U	**K19a** **K19b** **K19c** **K19d** **K19e** **K19f** **K19g** **K19h** **K19i** **K19j** **K19k** **K19l** **K19m** **K19n**
220	c-‹ ^d†¨<” Ÿ›?‹ ›Ã y=/›?Ée ”È*ƒ* K=ŸLŸK< Ã‹LK<; **(Ÿ›”É uLÃ SMe SeÖ*ƒ* Ã‰LM:: ¾}²[²*ƒ*” SMf‹ K}ÖÁm¨< <u>Á”wu<</u>' ¾T>cÖ<*ƒ*” SMf‹ ÅÓV Á¡wu<)**	1. ŸÓw[eÒ Ó”–<’*ƒ* uS kw 2. uÓw[eÒ Ó”–<’*ƒ* ¨p*ƒ* G<K?U ¢”ÊU” u›Óvu< uSÖkU 3. ŸzÃ[c< ’é Ÿ J’/‹: ›”É ¾¨c=w ÕÅ— Ò` }¨e• uS•` 4. ›eŸ] SÖÙ‹” uSÖ×*ƒ* “ T>ØT>× u`u_ uSSÑw 5. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. UMi ¾K˜U	**K20**
221	›”É c¨< Ÿ›”É uLÃ ¾¨c=w ÕÅ™‹ u=•*ƒ*/b*ƒ* K›?‹.›Ã.y/›?Ée ¾SÒKÖ</×D ÉM K=ÚU` Ã‹LM”;	1. ›- 2. ¾KU 3. ›L¬pU 4. ULi ¾K˜U	**K21**
222	vKñ*ƒ* 12 ¨^*ƒ* ¨<eØ `e-“ ¾õp` ÕÅ— /ÕÅ™‹- KU” ÁIM Ñ>²? ¢”ÊU” }ÖpSªM;	1. ²¨*ƒ*` 2. ›w³—¨<” Ñ>²? 3. ›Mö ›Mö 4. }ÖpT@ ›L¨<pU 99. ULi ¾K˜U	**K22**
223	›”É c¨< u›?‹ ›Ã y= zÃ[e Ÿ}Ön u%EL uIÃ¨*ƒ* e"K É[e zÃ[c<” KK?KA‹ c-‹ K=Áe}LMõ Ã‹LM”;	1. ›- 2. ¾KU ›Ã‹MU 88. ›L¬pU 99. ULi ¾K˜U	**K23**
224	¾›vL²` ui-‹ <u>(u}KÃU ÅÓV ¾wM*ƒ* leK*ƒ*” ¨Ã”U</u>	1. ›-	**K24**

	¾wMƒ ðdi ¾T>ÁeŸƒK<ƒ) uÓw[eÒ Ó"–<'ƒ ¨pƒ ›?‹ ›Ã y=" ¨Å K?L c¨< KTe}LKõ ›MÁU K›?‹ ›Ã y= zÃ[e ¾SÒKØ ÉM" ÃÚU^K<";	2. ¾KU ›ÃÚU\U 3. ›L¨<pU 4. ULi ¾K˜U	
225	u›vK²` ui ¾SS c¨< K›?‹ ›Ã y= /›?Ée ¾SÒKØ ÉK< Ÿõ}— '¨<";	1. ›- 2. ›ÃÅKU 88. ›L¨<pU 99. ULi ¾K˜U	**K25**
226	¾›vK²` ui-‹" e`ßƒ Sq×Ö` ¾›?‹ ›Ã y=/›?Ée" ui e`ßƒ KSŸLŸM ¾T>[Ç ÃSeM-M;	1. ›- 2. ¾KU ›Ã[ÇU 88. ›L¨<pU 99. ULi ¾K˜U	**K26**
W	**¡õM 3: Ÿ²=l kØKA ÁK<ƒ ØÁo-‹ ¾uÔ ðnÅ˜'ƒ ¾›?‹ ›Ã y=/›Ée U`S^" ¾U¡¡` ›ÑMÓKAƒ" ÃSKŸM::**		
}.l	**ØÁo**	**SMe**	**¢É**
301	eK uÔ ðnÅ˜ƒ ¾›?‹ ›Ã y=/›?Ée U`S^" ¾U¡¡` ›ÑMÓKAƒ cU}¨< Á¨<nK<;	1. ›- 2. ¾KU cUŠ ›L¨<pU.....¨Å 303 99. ULi ¾K˜U	**W1**
302	S[Í¨<" ÁÑ–<ƒ Ÿ¾ƒ '¨<; **(Ÿ›"É uLÃ SMe SeÖƒ Ã‰LM:: ¾}²[²\ƒ" SMf‹ Á"wu<' ¾}Ökc<ƒ" SMf‹ ÅÓV Á¡wu<::)**	1. ŸÖ?" vKS<Á/Ö?" É`Ìƒ 2. ŸSÑ"— w²<H" (_ÉÄ' ,K?y=»") 3. Ÿƒ Ul`ƒ u?ƒ 4. ŸÕÅ™Š 5. Ÿu?}cxŠ 6. ŸÔ[u?„Š 7. K?L (ÃÑKê)----------	**W2**
303	¾uÔ ðnÅ—'ƒ ¾›?Ée U`S^" U¡¡` ›ÑMÓKAƒ ÖnT> '¨< wK¨< ÁU"K<;	1. ›- 2. ›ÃÖpUU..... ¨Å 305 88. ›L¨<pU 99. ULi ¾K˜U	**W3**
304	¾uÔ ðnÅ˜'ƒ ¾›?‹ ›Ã y=/›?Ée U`S^" U¡¡` ›ÑMÓKAƒ ÖkT@¨<" ¾T>ÑMèƒ ŸU" ›"î` '¨<; **(Ÿ›"É uLÃ SMe SeÖƒ Ã‰LM ¾}²[²\ƒ" SMf‹ Á"wu<L†¨<:: ¾}Ökc<ƒ" SMf‹ ÅÓV Á¡wu<)**	1. ^e" KT¨p 2. ^e" Ÿui¨< KSŸLŸM 3. zÃ[c< uÅU ¨<eØ S•\ Ÿ}[ÒÑÖ KK?KA‹ LKTe}LKõ 4. zÃ[c< uÅU ¨<eØ S•\ Ÿ}[ÒÑÖ `Ç" I¡U" KTÓ–ƒ 5. zÃ[c< uÅU ¨<eØ S•\ Ÿ¨k ¾ì[ ›?‹ ›Ã y= SÉ'>ƒ KSÖkU 6. Ÿß"kƒ" Ÿõ`Hƒ KSÑLÑM:: 7. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. ULi ¾K˜U	**W4a** **W4b** **W4c** **W4d** **W4e** **W4f** **W4g** **W4h** **W4i**
305	# T"—¨<U c¨< ›?‹ ›Ã y=/›?Ée" u}SKŸ} ^c<" T¨p ›Kuƒ$ uT>K¨< Hdw ÃeTTK<;	1. ›- 2. ›MeTTU 88. ›L¨<pU 99. ULi ¾K˜U	**W5**
306	ŸuÔ ðnÅ˜'ƒ ¾›?‹›Ã.y=/›?Ée U`S^" U¡¡` ›ÑMÓKAƒ uÃuMØ }ÖnT> K=J" ¾T>‹K¨< ¾lw[}cw ¡õM ¾ƒ—¨< '¨<; **(Ÿ›"É uLÃ SMe SeÖƒ Ã‰LM:: ¾}²[²\ƒ" SMf‹ Á"wu<L†¨<:: ¾}Ökc<ƒ" SMf‹ ÅÓV Á¡wu<)**	1. c?}— ›Ç]-‹ 2. ¾Ö?" vKS<Á-‹ 3. uÉ"Ñ}— G<'@ KzÃ[c< ¾}ÒKÖ< c-‹ 4. 'õcÖ<` "„‹ 5. Ø"no ¾ÔÅK¨< ¾Ów[eÒ Ó"–<'ƒ ðêS¬ ¾T>Á¨<l c-‹	**W6a** **W6b** **W6c** **W6d** **W6e**

		6. Ÿ›"É uLÃ ¾¨c=w ÕÅ— ÁL†¨</¾'u^†¨< c-‹ 7. u›vK² ui¾SS< c-‹ 8. ¾d"v 'k`d /+u= ISU}™‹ 9. uÓw[ cÊT©'ƒ ("”É Ÿ"”É ¨Ã"U c?ƒ Ÿc?ƒ) ¾}cT\ c-‹ 10. jôa‹ 11. uS`ô ¾T>cØ ›'nm SÉH'>ƒ/ ›Å"³» ê **uÒ^** ¾T>ÖkS< c-‹ 12. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. ULi ¾K˜U	**W6f** **W6g** **W6h** **W6i** **W6j** **W6k** **W6l** **W6m** **W6n**
307	›"É c¨< SŠ '"< ¾›?‹.›Ã.y=/ ›?Ée U`S^ TÉ[Ó ÁKuƒ; **(Ÿ›"É uLÃ SMe SeÖƒ Ã‰LM:: ¾}²[²\ƒ" SMf‹ Á"wu<L†¨< ¾}Ökc<ƒ" SMf‹ ÅÓV Á¡wu<)**	1. ›"É c¨< uT>SUuƒ Ñ>²? 2. ŸÒw‰ uòƒ 3. u›G<'< ¨pƒ ¨Ã"U Ÿ²=l uòƒ Ÿ›"É uLÃ ¾¨c=w ÕÅ— Ÿ›K¨</Ÿ›Lƒ 4. Ø"no ¾ÔÅK¨< ¾Ów[eÒ Ó"–<'ƒ ðêV ¾T>Á¨<p/¾U¨<p ŸJ' 5. uT"—¨<U ¨pƒ" Ñ>²? 6. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. ULi ¾K˜U	**W7**
308	uT>•\uƒ ›"vu=: ›"É ÓKcw **UeÖ=^©'~ ¾}Öuk (TKƒU K?KA‹ c-‹ ¾U`S^¬" ¬Ö?ƒ "ÇÁ¬Iƒ }Å`Ô)** uðnÅ˜'ƒ LÃ ¾}Sc[} ¾›?‹ ›Ã y= /›?Ée U`S^ KTÉ[Óu=ðMÓ ¾T>‹M ÃSeM-M;	1. ›- 2. ¾KU ›Ã‹MU 88. ›L¨<pU 99. ULi ¾K˜U	**W8**
309	¾U`S^ ¨<Ö?ƒ-" KT¨p ›MðMÓU' 'Ñ` Ó" ¾›?‹ ›Ã y=/›?Ée U`S^ ›É`Ñ¨< Á¨<nK<;	1. ›- 2. }S`U_ ›L¨<pU ... ¨Å 313 99. ULi ¾K˜U	**W9**
310	uU" U¡"Áƒ 'u` ¾›?‹ ›Ã y= ›?Ée U`S^ ÁÅ[Ñ<ƒ;	1. uÖ?" vKS<Á ƒ°³´ 2. ¾ÅU MÑd KTÉ[Ó 3. u^c? õLÔƒ" ØÁo (^c?" KT¨p) 4. ›w^˜ ¾Uƒ•`/›wa˜ ¾T>•` ¾¨c=w ÕÅ—Â eKSS/eKV} 5. ŸÒw‰ uòƒ 6. zÃ[c< uÅT@ K=•` Ã‹LM ¾T>M Ø`×_ eK'u[˜ 7. 'õcÖ<` u'u`G<uƒ c¯ƒ 8. ¨Å ¨<ß GÑ` KSH@É 9.K?L(ÃÑKê)---------- 88. ›L¨<pU 99. ULi ¾K˜U	**W10**
311	ŸSS`S`- uòƒ ¾pÉS U`S^ U¡` ›ÑMÓKAƒ }cØ„-ƒ 'u`;	1. ›- 2. ¾KU 3. ›L¨<pU 4. ULi ¾K˜U	**W11**
312	uðnÅ˜'ƒ LÃ ¾}Sc[} ¾É[U`S^ ¾U¡` ›ÑMÓKAƒ }cØ„-ƒ 'u`;	1. ›- 2. ¾KU 3. ›L¨<pU 4. ULi ¾K˜U	**W12**
313	uðnÅ˜'ƒ LÃ ¾}Sc[} ¾›?‹ ›Ã y=/›?Ée U`S^	1. ›- ... ¨Å 315	**W13**

	□"Ç=ÁÅ`Ñ< u=Ö¾l ðnÅ— ÃJ"K<;	2. ¾KU ›MJ"U 3. ULi ¾K˜U	
314	KØÁo lØ` 313 ULi ¾›?‹ ›Ã y=/›?Ée U`S^ KTÉ[Ó ðnÅ— ›ÃÅKG<U "K< U¡"Áƒ- U"É" '¨<;	1. ¾U`S^¨<" UeÖ=^©'ƒ eKUÖ^Ö` 2. ¨<Ö?~" T¨p eKTMðMÓ 3. Ÿ²=I uòƒ eK}S[S`G< 4. ›?‹ ›Ã y=/›?Ée K›vK²` ui□ □TT>-‹ pÉT>Á ¾T>cÖ¨< ¾Ö?" ‹Ó` eLMJ':: 5. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. ULi ¾K˜U	**W14**
315	KØÁo lØ` 313 ULi- U`S^¨<" KTÉ[Ó ðnÅ— '˜ "K<:**u›G<'< c›ƒ ¨Ã"U uT>kØK<ƒ G<Kƒ ¨^ƒ ¬eØ** U`S^¨<" KTÉ[Ó U" ÁIM ðnÅ— '-ƒ;	1. u×U ðnÅ— 2. u}¨c' Å[Í ðnÅ— 3. □`ÓÖ— ›ÃÅKG<U 88. ›L¨<pU 99. ULi ¾K˜U	**W15**
316	uðnÅ˜ƒ LÃ ¾}Sc[} ¾›?‹ ›Ã y= ›?Ée U`S^" U¡¡` ›ÑMÓKAƒ u›"vu=- u=•` ¾›ÑMÓKA~" ›c×Ø u}SKŸ} ¾ƒ—¨<" ›c^` ÃS`×K<;	1. eU }Öpf uUeÖ=` ¾T>Á´uƒ U`S^ 2. eU ¾TÃÑKêuƒ U`S^ 3. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. ULi ¾K˜U	**W16**
317	ŸT>Ÿ}K<ƒ ¾›?‹ ›Ã y=/›?Ée U`S^" U¡¡` ›ÑMÓKAƒ ›c×Ø ²È-‹ ¨<eØ ¾ƒ—¨<" ›c^` uÃuMØ ÃS`×K<; **(Ÿ›"É uLÃ SMe SeÖƒ Ã‰LM:: ¾}²[²\ƒ" SMf‹ <u>Á"wu<L†¨<:</u> ¾}Ökc<ƒ" SMf‹ ÅÓV Á¡wu<)**	1. ›"É c¨< u^c< ðnÉ" õLÔƒ ¾T>ÁÅ`Ñ¨< U`S^ 2. ›"É c¨< Ÿ›?Ée Ò` }³TÏ ¾J'< UM¡„‹ uT>ÁdÃuƒ ¨pƒ uGŸ=U ƒ°³´ ¾T>Å[Ó U`S^ 3. uGŸ=U/uvKS<Á ƒ°³´ K'õcÖ<` □"„‹: Kd"v 'k`d □TT>-‹" K›vK²` ui□ □TT>-‹ ¾T>Å[Ó U`S^ 4. uTeÑÅÉ ¾T>Å[Ó ¾›?‹ ›Ã y=/›?Ée U`S^ 88. ›L¨<pU 99. ULi ¾K˜U	**W17**
318	uðnÅ˜ƒ LÃ ¾}Sc[} ¾›?‹ ›Ã y=/›?Ée U`S^ u=ÁÅ`Ñ<" ¨<Ö?ƒ-" KT¨p u=ðMÑ< uU" ›Ã'ƒ S"ÑÉ SeTƒ ÃðMÒK<;	1. òƒ Kòƒ (uÓUv`) 2. ueM¡ 3. uUeÖ=^© ÅwÇu? 4. u²SÉ ¨Ã"U uÕÅ— uŸ<M 5. K?L (ÃÑKê) ---------- 88. ›L¨<pU 99. ULi ¾K˜U	**W18**

S	**¡õM 4: Ÿ²=I uSkÖM ›ÉKA" SÑKM" u}SKŸ} ¾T>k`u< ØÁo-‹ "†¨<::**		
}.l	**ØÁo**	**SMe**	**¢É**
401	¾›?‹ ›Ã y=/›?Ée lSU}™‹" u}¨c' x□ ›ÓMKA TekSØ }Ñu= '¨< ÃLK<;	1. ›- 2. ›ÃÅKU 3. ›L¨<pU 4. ULi ¾K˜U	**S1**
402	uÅS< ¨<cØ ¾›?Ée ›Uß¨< zÃ[e □"ÇKuƒ ŸT>Á¨<lƒ c¨< Ò` UÓw ›w[¨< KSSÑw ðnÅ— '-ƒ;	1. ðnÅ— '˜ 2. ðnð— ›ÃÅKG<U	**S2**

		88. ›L¨<pU 99. SMe ¾K˜U	
403	uÅT†¨< ¬eØ ¾›?Ée ›Uß¨< zÃ[e ÁKv†¨<" c-‹ Sõ^ƒ u}SKŸ} ÁK-ƒ eT@ƒ U" ÃSeLM;	1. ð^†ªKG< 2. ›Mð^†¨<U 88. ›L¬pU 99. ULi ¾K˜U	**S3**
404	¾›?Ée ›Uß¨< zÃ[e/›?‹ ›Ã y= uÅT†¨< ¨<eØ ÁKv†¨<" c-‹ ¾eU ´`^ l´u< "Ç=Á¨<k¨< uTÉ[Ó uzÃ[c< ÁM}Ön¨< ¾lw[}cw ¡õM Ÿ²=I c-‹ uS^p ^c<" ŸzÃ[c< SŸLŸM Ã‹LM::	1. u×U eTTKG< 2. eTTKG< 3. `ÓÖ— ›ÃÅKG<U 4. ›MeTTU 5. u×U ›MeTTU	**S4**
405	¾›?Ée ›Uß¨< zÃ[e/›?‹ ›Ã y= uÅS< ¨<eØ ÁKuƒ ›"É }T] ŸT>T`uƒ ƒ/u?ƒ ¬eØ ¾T>T` MÏ / ¨"ÉU /Iƒ ¨²}... u=•`-ƒ ƒUl`†¨<" u²=Á¨< ƒ/u?ƒ "Ç=kØK< ÁÅ`ÒK<; ¨Ãe ¨Å K?L ƒ/ u?ƒ Á³¨<b†ªM;	1. ²=Á¨< ›ekØL†ªKG< 2. ¨Å K?L ƒ/u?ƒ ›³¬^†ªKG< 3. `ÓÖ— ›ÃÅKG<U 99. SMe ¾K˜U	**S5**
406	u›"É u=a ¨<eØ ¨Ã"U uT"—¨<U ¾e^ x ›wa-ƒ ŸT>c\ƒ c-‹ S"ŸM u›"Æ ¾›?‹.›Ã.y= zÃ[e uÅS< ¬eØ S•\" u=Á¨<l Ÿ}vK¨< c¨< Ò` u›"É LÃ KSe^ƒ ðnÅ—'-ƒ ;	1. ›-" 2. ðnÅ— ›ÃÅKG<U 3. `ÓÖ— ›ÃÅKG<U 99. SMe ¾K˜U	**S6**
407	KUÓw ›ÑMÓKAƒ ¾T>¨<M Ø_ n ¾T>Ñ²<uƒ Óac] /c<p/ vKu?ƒ ¾J' Å"u—- ÅU ¬eØ ¾›?‹ ›Ã y= zÃ[e S•\" u=Á¨<l ŸÅ"u—- n¬" SÓ³ƒ ÃkØLK< ;	1. ›-" kØLMG< 2. ¾KU ›MkØMU 3. `ÓÖ— ›ÃÅKG<U 99. SMe ¾K˜U	**S7**
408	Ÿu?}cw- S"ŸM u›"Æ c¨< ¾›?Ée ›Uß¨< hÃ[e /›?‹ ›Ã y=/ uÅS< ¬eØ u=Ñ˜ uu?ƒ- ¨<eØ ›e}˜}¨< K=Áe UTEE†¨< ðnÅ— '-ƒ ;	1. ðnÅ— '˜ 2. ðnÅ— ›ÃÅKG<U 3. `ÓÖ— ›ÃÅKG<U 88. ›L¨<pU 99. SMe ¾K˜U	**S8**

¾}q××]¨< S<K< eU ----------

SÖÃl ¾}VLuƒ k"/¨`/¯.U----------

¨<Ö?ƒ: 1. ¾}Ö"kk

2. }ËUa ¾}s[Ö

3. KSd}õ ÁM}vu\