



**SAINT, PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE
DEPARTMENT OF PUBLIC HEALTH**

**Prevalence and Factors Associated with Acceptance of HIV
Counseling and Testing among Pregnant Women Attending
Antenatal Clinic at SPHMMC Addis Ababa, Ethiopia, 2017 GC**

By: Abreham Assefa (MD)

**A THESIS SUBMITTED TO THE DEPARMENT OF PUBLIC HEALTH,
SPHMMC, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF MEDICINE**

**September, 2017
Addis Ababa, Ethiopia**



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ABSTRACT

Introduction: Mother- to-child transmission (MTCT) is by far the largest source of HIV infection in children below the age of 15 years .The virus may be transmitted during pregnancy child birth or breast feeding. For many years little was known about preventing transmission of HIV infection from mother to child. Recently however many intervention are available to reduce mother to child transmission, such as, antiretroviral drug and avoidance of breast feeding. For a women to take advantage of measures to reduce transmission, they need to know their HIV status, despite this fact many women are not willing to take HIV counseling and testing.

Objective: To assess prevalence and factors associated with acceptance of HIV voluntary counseling and testing (VCT) among pregnant women attending ANC at SPHMMC in Addis Ababa.

Methods: A cross-sectional study design was used. The study was conducted from May to June 2017 G.C. The data obtained from each study participant cleaned, edited and data was entered and analyzed using the EPI info version 6.0 and SPSS 20.0 computer software packages. Frequency distribution and cross tabulation were made for the variables, odds ratio and 95% confidence interval calculated. Bivariable and multivariable logistic regression analysis were done for variables whose P value ≤ 0.05 to determine factors associated with acceptance of HIV counseling and testing.

Results: A total of 418 pregnant women attending antenatal clinics were included, with a response rate of 100%. Acceptance of HIV testing by pregnant women attending ANC at SPHMMC were 90.2%. The strongest association of acceptance of HIV counseling and testing were found with prior HIV testing, age and preferred method of testing. Women who are in the age group of 30-39 years were about 3 times more likely to be tested than the other age groups (95% CI=0.107, 77.679) and also those who preferred confidential linked testing were 1.4 times more likely to be tested (95% CI = 0.236, 8.915). Women who had prior HIV testing were about 8 times more likely to be tested than those who had no prior HIV testing.

Conclusion: Prior HIV testing, age, preferred method of testing and educational status were important factors for acceptance of HIV counseling and testing.

Key words: acceptance, HIV testing, pregnant women, antenatal care

ACRONYM AND ABBREVIATIONS

ANC	Antenatal care.
AIDS	Acquired immunodeficiency syndrome.
ART	Anti retro viral therapy.
CI	Confidence interval.
HIV	Human immune-deficiency virus.
MCH	Mother and child health care.
MOH	Ministry of Health.
MTCT	Mother to child transmission.
PMTCT	Prevention of mother to child transmission.
OPD	Outpatient department.
OR	Odds Ratio.
SPHMMC	Saint, Paul's Hospital Millennium Medical College.
SPSS	Statistical Package for Social Science
TASO	The AIDS support organization.
UNAIDS	United nation program on AIDS.
VCT	Voluntary counseling and testing.
WHO	World health organization.

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1. INTRODUCTION

1.1 BACKGROUND

HIV voluntary counseling and testing (VCT) has been shown to have a role in both HIV prevention and for people with HIV infection, as an entry point to care. HIV voluntary counseling and testing (VCT) provides people with an opportunity to learn and accept their HIV sero status in a confidential environment .For pregnant women who are aware of their seropositive status VCT can help to prevent transmission to their infant (MTCT) (1).

Sub-Saharan Africa remains by far the region worst affected by the HIV/AIDS epidemic in 2003. HIV Prevalence varies considerably across the continent ranging from less than 1% in Mauritania to almost 40% in Botswana and Swaziland (4). More than one in five pregnant women are HIV infected in most countries in Southern Africa (4), while elsewhere in Sub-Saharan Africa median HIV prevalence in antenatal clinics exceeds 10% in few countries (4). In Addis Ababa among 15 - 24 year old pregnant women HIV prevalence has dropped almost sharply down to about 11% in 2003 after having a peak at approximately 24% in 1995 (4).

For a woman to take advantage of measures to reduce mother to child transmission, they will need to know and accept their HIV status (2). HIV voluntary counseling and testing (VCT) has been shown to have a role both in prevention and for people with HIV infection as an entry point to care (4), but experiences to date in many countries show great variation in willingness to make use of the service that are available (5).

1.2 STATEMENT OF THE PROBLEM

HIV the virus that causes AIDS can be transmitted from the mother to the offspring during pregnancy, labor, or after the child's birth during breast feeding. This means of transmission, which is known as mother - to - child transmission (MTCT), is by far the largest source of HIV infection in children under the age of 15 years (2).

Globally 2.7 million children under the age of 15 have died of AIDS since the beginning of the epidemics. Their mother infected over 9 in 10 at birth or during breast- feeding (6).

AIDS threatens to reverse year of steady progress in child health and survival and has already doubled infant mortality in the worst affected countries. In Sub Saharan Africa MTCT is contributing substantially to rising child mortality in many countries. Most studies estimate the probability that a baby born to an HIV positive women baby will have the virus ranging from 25% to 35% in developing countries. In Ethiopia according to HIV AIDS indicators there are 200,000 children under the age of 15-years living with the virus in 2002 (6, 9).

For many years, little was known about preventing transmission of HIV infection from mother to child. Recently however many advances have been made in developing effective and affordable intervention that reduce the likelihood that a woman will pass HIV on her baby (6). The two most important interventions for the reduction of MTCT namely avoidance of breastfeeding and antiretroviral programs, requires a woman to know whether or not she is HIV infected in order to benefit from these interventions and other advantage of VCT (5).

Voluntary HIV counseling and testing is a key factor (entry point) in the prevention of mother to child transmission of HIV. This strategy promotes adequate treatment for HIV positive women and has a positive impact on mother - to- child (MTC) HIV transmission rate. For HIV negative women it provides opportunity for education and behavioral change (4, 7). Although VCT is becoming increasingly available in developing and middle - income countries there is still great reluctance by many people to use the service (4).

Voluntary HIV counseling and testing (VCT) for pregnant women is a starting point for instituting a mother to child transmission (MTCT) prevention program. This strategy promotes adequate treatment for HIV positive women and has a positive impact on mother-to-child

(MTCT) HIV transmission rate. For HIV negative women it provides opportunity for education and behavioral change, but experience to-date in many countries show great variation in willingness to make use of the service that are available (8).

The finding obtained from this study will have some contribution in the prevention of HIV infection and improvement of VCT service utilization and can be used by health care providers, health planners to approach problems of low voluntary counseling and testing up take among pregnant women.

1.3 SIGNIFICANCE OF THE STUDY

Mother-to-child transmission (MTCT) is by far the largest source of HIV infection in children below the age of 15 years. The virus may be transmitted during pregnancy, childbirth, or breastfeeding. So far, globally 2.7 million children under the age of 15 have died of AIDS since the beginning of the epidemics. Over 9 in 10 acquire the infection from their mothers at birth or during breast feeding.

AIDS threatens to reverse year of steady progress in child health and survival and has already doubled infant mortality in the worst affected countries. In Sub Saharan Africa MTCT is contributing substantially to rising child mortality. In Ethiopia an estimated of 120,000 children under the age of 15 years living with the virus in 2004.

For many years, little was known about preventing transmission of HIV infection from mother to child. Recently however many advances have been made in developing effective and affordable intervention that reduce the likelihood that a woman will pass HIV on her baby. The two most important interventions for the reduction of MTCT namely avoidance of breastfeeding and antiretroviral programs, requires a woman to know whether or not she is HIV infected in order to benefit from these interventions and other advantage of VCT.

The risk of HIV transmission from an infected mother to her child can be reduced to less than 5% by giving antiretroviral drug during pregnancy and labor, by providing skilled birth attendant and by avoiding breast-feeding. In the absence of preventive measures, the risk of a baby acquiring the virus from an infected mother ranges from 30% to 45% in developing countries.

Many, but not all women accept VCT. The services have been slow to gain acceptance. There are many reasons why a woman may refuse VCT and understanding of those factors could help Intervention design to promote VCT among pregnant women.

This study is therefore designed primarily to identify the factors determining acceptance of HIV counseling and testing among pregnant women attending antenatal care. The result would be useful in helping health care providers to introduce measures that could improve the utilization of antenatal HIV testing.

2. LITERATURE REVIEW

2.1 Over view of mother-to-child transmission (MTCT)

An estimated 2.1 million children worldwide currently are living with the virus and over 630,000 children become infected with HIV in 2003, the vast majority of them acquire the virus during their mother's pregnancy, labor and delivery or as a result of breast feeding (10).

Africa is the region seriously affected by HIV/AIDS epidemic, of ten countries worldwide, with the greatest number of infected children, the top nine are all in Sub-Saharan Africa. These ranges from Ethiopia with 140,000 HIV infected children through Nigeria with 90,000 HIV infected children (11).

At least a quarter of new born infected with HIV die before the age of one, up to 60% died before reaching their second birthday. Over all most die before they are five years. In 1999, in Botswana 40% of all children who died before their fifth birthday were killed by AIDS. In Zimbabwe, AIDS killed more than 35% in the same age group compared to 25% in Namibia and Swaziland and over 20% in Kenya, South Africa and Namibia (10).

In most HIV infected mothers, HIV doesn't cross the placenta from mother to fetus and the placenta actually shields the fetus from HIV. This protection may break down, if a mother has viral, bacterial or parasitic placental infection during pregnancy. The greatest risk of becoming infected with HIV is during childbirth, during this single event between 10% and 20% will become infected by sucking, imbibing or aspiration of Maternal blood or cervical secretion that contain HIV. Although the viral concentration in breast milk are significantly lower than those found in blood, on average about 15% of babies born to HIV infected mothers will become infected through sustained breast feeding (24 month or more) (12).

Mother - to - child transmission (MTCT) is by far the largest source of HIV infection in children under the age of 15 years. The virus can be transmitted during pregnancy, labor, delivery, or after the child's birth during breastfeeding, the risk of a baby acquiring the virus from an infected mother ranges from 15% to 25% in industrialized countries and 25% to 35% in developing countries largely due to breast feeding practice (9).

Among infected infants who are not breast fed, most mother-to-child transmission occurs around at the time of delivery and in population where breast-feeding is a norm, breast feeding accounts for more than one-third of all cases of mother-to-child transmission (9).

In women and infant transmission study a probability of 27% for inutero transmission obtained in USA, while in Kinshasa 23% infants were thought to be infected in utero, 65% intrapartum or early postpartum and 12% in late postpartum (13).

In low and middle income countries there is at least a 30% likelihood that an HIV positive breast feeding mother will pass the virus to her new born (UNAIDS, 2003) from a study in Kenya and Malawi the absolute transmission rate from breast feeding were estimated to be 3.5% at 6 month, 7% at 12 month and 10.3% at 24 month (14).

The contribution of each of these routes to overall transmission has not been quantified exactly but it appears that in utero transmission is less frequently, and substantial proportion occurs at the time of delivery or late in pregnancy (13).

2.2 Prevalence of HIV infection among pregnant women.

In a study on Epidemiology and detection of HIV-1 among pregnant women in the united kingdom, the prevalence of HIV among mothers in London rose six fold between 1988 and 1996 (0.19% of women tested 1 in 520 in 1996) apart from in Edinburgh and Dundee levels remained low in Scotland (0.025% 1 in 3970) and elsewhere in the united kingdom (0.016%, 1 in 1930) (15).

Southern Africa remains the worst affected region in the world, with data from antenatal clinic in urban area in 2002 showing HIV prevalence of over 25% following a rapid increase from just 5% in 1990. In Swaziland the average prevalence among pregnant women was 39% in 2002 - up from 34% in 2000 and only 4% in 1992; and in Botswana antenatal prevalence has been sustained at 36%, in 2001, 35% in 2002 and 37%, in 2003 (10).

In Kenya, Malawi, Namibia, Rwanda. South Africa, the united republic of Tanzania, Zambia, and Zimbabwe, over 10% of woman attending antenatal clinic in urban areas are HIV positive, with a rate of almost 60% in some sites. In Thailand prevalence in women in antenatal clinic has climbed from 0% in 1989 to 2.3% in 1995 and continues to rise, similar increases are reported from some Indian cities, Latin America and the Caribbean (13).

The prevalence of HIV infection among pregnant women in Ethiopia were found to be 17.8%, 17.5% and 15.1% in 1996, 1997 and 1999 respectively yielding average of 16.8%. In urban Ethiopia average prevalence is estimated to be 13% and in rural around 5% (9).

HIV prevalence among pregnant women has decline in several places. In Addis Ababa prevalence has fallen from peak of 24% in 1995 to 11% in 2003 (10). In urban Uganda there has been a reported decrease in the prevalence of HIV infection, which is thought to be due to behavioral change, following aggressive AIDS education. (13) The prevalence of HIV among pregnant women is high in most African countries even if it seems to decline in some parts of the region.

2.3 Knowledge about HIV and MTCT

In a study to investigate knowledge and awareness of HIV/ AIDS among pregnant women in Maharashtra state, India about 81% of the 269 study subjects heard about sickness called HIV or AIDS. When asked ways of spread 54% answered they did not know, 39% knew that sexual contact, 18% mentioned thorough injection, and 8% through blood, 4% mentioned commercial sex workers and only one person said from mother to child. The study reported that education played the most important role on knowledge about HIV/AIDS (16).

In the puna study (a state in India) from 1999 only 33% of the pregnant women knew about all the main modes of HIV transmission. In 2001 in the same area, only 8.5% knew about prevention of MTCT, and only 2% knew that avoiding breast-feeding or taking treatment during pregnancy could protect the infant from HIV (16).

Among antenatal care attending Ghanaian pregnant women at two polyclinics in Accra, less than 3% of them spontaneously mentioned MTCT as an HIV transmission route, when prompted. Majority of mothers agreed that the virus could be transmitted during pregnancy (94%), delivery (91%), and breast feeding (86%). about 40% of the participants indicated that MTCT could not be prevented and another 14% did not know how to curtail MTCT (17).

In a study on attitude to voluntary counseling and testing for HIV among pregnant women in rural south west Uganda, although most women were not aware that HIV could be transmitted through breast milk, they were aware that the baby could be infected during delivery because of blood contact (18).

A community based study on knowledge, attitude and practice (KAP) on HIV/AIDS in Gambella town, western Ethiopia, indicated only 4.5% of the participants reported that they didn't heard of HIV/AIDS. The commonly reported ways of transmission were unprotected sex (79.8) and unsafe transfusion (64.2%), and only 0.9 % reported that they know that HIV is transmitted from mother to child (19).

2.4 Acceptance of VCT among pregnant women

The practice of testing in pregnancy has been criticized in the past, as one which stigmatizes women and which has not led to implementation. With increase knowledge about mother-to-child transmission in particular, the focus has moved from the possible public health benefit of testing in pregnancy to the potential benefit for individual woman. (13). Experience to date in many countries shows great variation in willingness to make use of the VCT service that are available (5).

Knowledge of HIV status is a gateway to AIDS treatment and has documented prevention benefits, however the current reaching of HIV testing service is poor and up take is often low because of several factors (10).

In a study evaluated the acceptance of VCT by pregnant women in 14 urban sites in Africa and Thailand in 1997, the acceptance rate of VCT were high; median 92% ranging from 77% to 99.7%. Over all acceptability of VCT (i.e. women coming for both test and result) was about 69%. The most common reasons to refuse testing were want to discuss with partner, fear of HIV positive status, and fear of loss of marital security, domestic violence and confidentiality. Better-educated women refuse to test more often than others (20).

A study in 1995 - 96 in Abidjan and Bobo-Dioulasso found that the overall acceptability of voluntary HIV counseling and testing was relatively high 78% pregnant women in Abidjan and about 92% in Bobo-Dioulass respectively accepted an HIV test and 58% and 82% respectively returned for their result, over all acceptability was just under 46% in Abidjan and 76% in Bobo-Dioulasso, however a 1997 study of 12 ANC in Africa and Bangkok found a wide variation in acceptability ranging from 33% to 95% (median 65%) (21).

A cross-sectional mailing survey about acceptability of VCT and various MTCT interventions in antenatal clinic in 13 countries the median over all acceptability was 65% ranging from 33% - 95% (22).

Another study from Zambia examined the readiness to utilize VCT service offered to 4812 participants from rural and urban sites. Although 37% initially expressed willingness to use VCT service only 3.6% actually come for VCT. In Zimbabwe 186 women attending an antenatal care were offered VCT as part of their antenatal care. Although most women endorsed the multiple benefit of VCT, up take was low, with only 23% of women consenting to VCT (22).

3. OBJECTIVE OF THE STUDY

3.1.General objective

- To assess the prevalence and factors associated with acceptance of HIV counseling and testing among pregnant women attending ANC at SPHMMC in Addis Ababa.

3.2.Specific objectives

- To assess the prevalence of acceptance of HIV counseling and testing among pregnant women.
- To assess factors associated with acceptance of HIV counseling and testing among pregnant women.

4. METHODS AND MATERIAL

4.1. Study Area and Period

The study area was SPHMMC which serve as a referral hospital to all health institutions throughout the country. St. Paul's hospital millennium medical college is the second largest hospital in Ethiopia which is located in Addis Ababa, Gullele sub city. The hospital was established with the willingness and support of Emperor Haile Sillassie II and has been giving medical service for more than fifty years by giving due concern for the people with low level of income. St, Paul's hospital provide different services including maternal and child health care (MCH) which encamps the voluntary counseling and testing service to pregnant women (37). The duration of the study was from May to June 2017 G.C.

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4.2. Study Design.

Institution based, cross sectional study was conducted to carry out this research.

4.3. Population

4.3.1. Source Population

All pregnant women attending St, Paul's Hospital mother and child health care (MCH) unit, for antenatal care follow up.

4.3.2. Study Population

Study subjects where pregnant women attending St, Paul's Hospital mother and child health care (MCH) unit, for antenatal care follow up, who were selected during the study period until the required sample size is achieved.

4.4. Inclusion and Exclusion Criteria

➤ Inclusion Criteria

- Those pregnant women who had ANC follow up in SPHMMC.
- Those pregnant women above 18 years old.

➤ Exclusion Criteria

- Those pregnant women who are HIV positive and on treatment.
- Those who are mentally disable.

4.5. Sample size Determination and Sampling Technique

4.5.1. Sample Size Determination

To calculate the sample size a single population proportion formula was applied, considering the proportion of pregnant women attending ANC who were aware of mother to child transmission of HIV is found to be 55% (35), 5% margin of error, at 95% confidence interval and a non-response rate of 10% is added. The sample size was calculated as

Where n - Sample size p - Proportion
d -Margin of error α – Degree of accuracy

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

$$= (1.96)^2(0.55)(0.45) / (0.05)^2 = 380$$

Adding 10 % non- response rate, the sample size was determined to be 418.

4.5.2. Sampling Technique

Using systematic sampling technique pregnant women attending St, Paul's Hospital mother and child health care (MCH) unit for ANC follow up, was selected during the study period until the required sample size is achieved. ANC follow up logbook was used to select systematically every tenth of eligible pregnant mothers attending the clinic.

4.6. Study Variables

Dependent variable

- Acceptance of HIV counseling and testing

Independent variables

- Age
- Educational status
- Marital status
- Income
- Religion
- Ethnicity
- Number of pregnancy
- Number of ANC visits
- Knowledge about MTCT
- Attitude about MTCT
- Perceived benefit of HIV counseling and testing

4.7. Operational Definitions

- **Acceptance:** - Uptake of HIV testing by pregnant women after being counseled (3).
- **Counseling:** -A confidential dialogue between a person and care provider aimed at enabling the person to cope with stress and make personal decision to take the test (3).
- **Knowledge:** -Information stored in the memory related to HIV /AIDS and mother-to-child transmission (3).
- **Attitude:** - Predisposition to respond in favorable or unfavorable manner to wards HIV/AIDS and VCT (3).
- **Perceived benefit:** - Out come expectation from taking HIV test (3).

4.8. Data Collection Method and procedures

Data was collected from study subjects, using pre-tested structured questionnaire. The questionnaire was developed in English and Amharic. Data collection was done at one corner of the MCH unit after a women has completed the ante natal follow up examination and those pregnant women who came for their first visit who are not counseled before was given voluntary HIV counseling before data collection by the counselors from the MCH unit.

4.9. Data Processing and Analysis

The data obtained from each study participant cleaned, edited and data was entered and analyzed using the EPI info version 6.0 and SPSS 20.0 computer software packages. Frequency distribution and cross tabulation were made for the variables, odds ratio and 95% confidence interval calculated. Bivariate and multivariate logistic analysis were done for variables whose P value ≤ 0.05 to determine factors associated with acceptance of HIV counseling and testing.

4.10. Ethical Consideration

Ethical clearance to conduct the study was obtained from SPHMMC department of public health. Informed consent from each study subjects was obtained after clear explanation about the purpose of the study, confidentiality of the information and privacy of the respondent was maintained. The data collection procedure didn't have any harm to the study participant and the community.

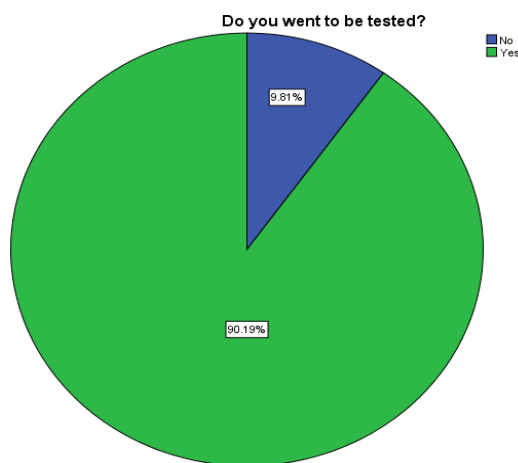
4.11. Result dissemination Plan

The result obtained from this study will help in designing intervention to promote HIV counseling and testing among pregnant women and the finding will be communicated to different organizations that can make use of the findings, like SPHMMC, Addis Ababa health administration and non-governmental organizations. The result will also be disseminated to any organization or institution or individuals who have direct or indirect input to the project. All attempts will be made to publish the results of the study on local and/or international Journals.

5. RESULTS

A total of 418 pregnant women attending antenatal clinics were included in the study, with a response rate of 100%. Acceptance of HIV testing by pregnant women attending ANC at SPHMMC were 90.2%.

Figure 1 Acceptance of HIV testing by pregnant women attending ANC at SPHMMC Addis Ababa, 2017



5.1. Socio-demographic Characteristics

Majority of the women included in the study were between 20 and 29 years. Majority of the study subjects were married, about 334 (79.9%) lived with their husbands. Among the pregnant women included in the study 147 (35.2%) were housewife, 109 (26.1%) were employed, 83 (19.9%) were student, 42 (10%) Jobless and 37 (8.9%) were others. Oromo ethnic group comprises the largest proportion of the study subjects 200 (47.8%), followed by Amahra 101 (24.2%), Gurage 58 (13.9%), Selte 27 (6.5) Tigre 17 (4.1%) and others 15 (3.6%) (Table 1).

Table 1 Socio-demographic Characteristics of HIV counseling and testing among pregnant women following ANC at SPHMMC Addis Ababa, 2017

Variables		Frequency	Percent (%)
Age	19 years old or less	51	12.2
	20-29 years	201	48.1

	30-39 years	141	33.7
	40 years & above	25	6.0
Ethnic group	Oromo	200	47.8
	Amahra	101	24.2
	Gurage	58	13.9
	Selte	27	6.5
	Tigre	17	4.1
	Other	15	3.6
Religion	Orthodox	185	44.3
	Muslim	157	37.6
	Protestant	68	16.3
	Catholic	8	1.9
Marital status	Married	376	90.0
	Unmarried	42	10.0
Have you ever attended school?	Yes	269	64.4
	No	149	35.6
Education level	Literate (read & write)	67	16.0
	Primary	102	24.4
	Secondary	58	13.9
	Tertiary (above 12)	42	10.0
Occupation	Housewife	147	35.2
	Employed	109	26.1
	Student	83	19.9
	Jobless	42	10.0

	Others	37	8.9
Income	<1000 birr	109	26.1
	1000 - 2000 birr	142	34.0
	2000 birr & above	167	40.0

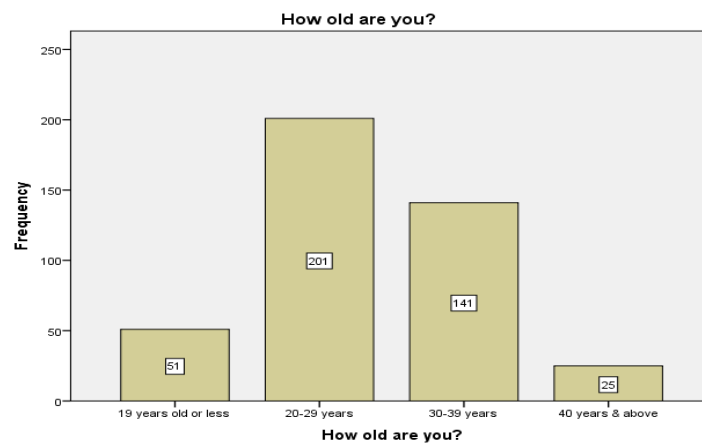


Figure 2 Age of pregnant women following ANC at SPHMMC Addis Ababa, 2017

5.2.Reproductive characteristics

Prior HIV testing had been performed by 67.5%. There was lower level of perceived risk to HIV/AIDS in about 13.9% pregnant women. On the other hand 80.4% of pregnant women perceived the benefit of the test to mother and baby. About 34.0% had two pregnancies including the current one. Most women, (66.5%) had more than two antenatal visits during the current pregnancy (Table 2).

Table 2 Some reproductive characteristic, perceived risk and benefit of HIV counseling and testing among pregnant women attending ANC at SPHMMC in Addis Ababa, 2017

Reproductive characteristics		Frequency	Percent (%)
No of pregnancy	One	102	24.4
	Two	142	34.0
	Three	133	31.8
	Four & above	41	9.8
ANC visits	Two& above	278	66.5

	One	140	33.5
Prior HIV testing	Yes	282	67.5
	No	136	32.5
Self-perceived risk	Yes	58	13.9
	No	360	86.1
Perceived benefit	Yes	336	80.4
	No	82	19.6
Acceptance of HIV testing	Yes	377	90.2
	No	41	9.8

5.3. Knowledge of respondents on HIV, MTCT & PMTCT

As shown in Table 3 about 94.4% mentioned sexual contact, 64.6% mentioned infected blood, 58.5% mentioned by sharing sharp objects and 57.8% mentioned injection by unsterile needle as a main route of HIV transmission. MTCT was mentioned by 79.6% of pregnant women as a route of HIV transmission. About the time when MTCT could occur, 69.9%, 70.1% & 60.3% mentioned transmission of the virus during pregnancy, delivery and breast-feeding respectively. Regarding the intervention to reduce MTCT, about 85.9% mentioned that they know about intervention that reduces MTCT (Table 3).

When asked questions on how to reduce the risk of MTCT, 83.3% mentioned use of antiretroviral drug and 33.2% mentioned avoidance of breast-feeding as a means of reducing MTCT. Almost all heard about the existence and importance of HIV counseling and testing service during pregnancy. About 75.8% heard the information from health institution, 43.6% from mass media and 52.2% from friends & neighbors (Table 3).

Table 3 Knowledge of respondents on HIV, MTCT & PMTCT, among pregnant Women attending ANC at SPHMMC in Addis Ababa, 2017

Knowledge Variables		Frequency	Percent (%)
Correctly identify route of transmission	Sexual intercourse	371	94.4%
	Infected blood	254	64.6%
	By sharing sharp objects	230	58.5%
	Mother to child	313	79.6%
	Injection by unsterile needle	227	57.8%
Correctly indicated when MTCT could occur	During pregnancy	292	69.9%
	At child birth	293	70.1%
	During breast feeding	252	60.3%
Awareness of preventive measures of PMTCT	Use antiretroviral drug	334	83.3%
	Avoid breast feeding	133	33.2%
Means of information access	Mass media (Radio, TV)	168	43.6%
	Health institution	292	75.8%
	Friends & Neighbors	201	52.2%
	Others	110	28.5%

5.4. Factors associated with acceptance of HIV counseling and testing

Acceptance of HIV counseling and testing was higher in the age group of 20-29 years compared to other age groups (OR=2.098, 95% CI=0.420, 10.481). Unmarried women were more likely to accept HIV counseling and testing compared to those who were married, but was not statistically significant. The odds of accepting HIV counseling and testing significantly associated in those who attended school (OR= 2.043, 95% CI= 1.068, 3.906). The odds of HIV counseling and testing acceptance was also higher in the higher income group, but was not statistically significant (table 4).

Other variables like religion, ethnicity, educational level and occupation of the mother were not found associated with the acceptance of voluntary HIV testing.

Table 4 Socio-demographic factors associated with acceptance of HIV counseling and testing among pregnant women following ANC at SPHMMC in Addis Ababa, 2017

Variables		Frequency	Crude OR	95% CI
Age	19 years old or less	51	0.283	0.058,1.376
	20-29 years	201	2.098	0.420,10.481
	30-39 years	141	0.558	0.122,2.562
	40 years & above	25	1	
Have you ever attended school?	Yes	269	2.043	1.068,3.906
	No	149	1	
Income	<1000 birr	109	0.42	0.173,1.021
	1000 - 2000 birr	142	0.369	0.161,0.843
	2000 birr & above	167	1	

The odds of accepting HIV counseling and testing significantly increased with the number of pregnancy. Women with their second and third pregnancy were 2 times more likely to accept HIV counseling and testing than those who were their first, fourth and above pregnancies. The number of antenatal visits attended by mothers were also analyze to look for association of

antenatal visit and acceptance of HIV counseling and testing. Women who attended two and above antenatal visits were more likely to take the test compared to those mother who attended less than two visit (OR=1.463, 95% CI=0.758, 2.823). The women were also compared with respect to their previous HIV testing experience. Mothers who had HIV testing in the past for different reasons were about 1.4 times more likely to accept voluntary HIV testing in the current pregnancy compared to their counter parts (OR= 1.463, 95% CI=0.758, 2.823) (Table 5).

Women who had self-perceived risk of getting HIV were also about 7 times more likely to accept HIV counseling and testing compared to those who were not (OR=7.125, 95% CI= 0.960, 52.870). Those women who satisfied with the counseling they received were also 2.3 times more likely to be tested (OR=2.393, 95% CI=1.008, 5.678). The odds of HIV counseling and testing acceptance was also higher in those who preferred confidential linked testing (OR= 2.718, 95% CI= 1.327, 5.569) (Table 5).

Table 5 Reproductive and related factors associated with HIV counseling and testing among pregnant women following ANC at SPHMMC in Addis Ababa, 2017

Reproductive characteristic		Frequency	Crude OR	95% CI
No of pregnancy	One	102	0.44	0.142,1.388
	Two	142	1.598	0.466,5.481
	Three	133	1.689	0.482,5.926
	Four & above	41	1	
ANC visits	Two& above	278	1.463	0.758,2.823
	One	140	1	
Prior HIV testing	Yes	282	10.973	4.906,24.542
	No	136	1	
Self-perceived risk	Yes	58	7.125	0.960,52.870
	No	360	1	
Preferred method of testing	Confidential linked testing	350	2.718	1.327,5.569
	Anonymous	68	1	

Satisfied with HIV counseling received	Yes	243	2.393	1.008,5.678
	No	59	1	

Variables like age, education, marital status, income, number of pregnancy, number of antenatal visits, prior HIV testing, self-perceived risk, preferred method of testing and satisfied with HIV counseling received were entered for multivariate analysis. The strongest association with acceptance of HIV counseling and testing rested with prior HIV testing, age and preferred method of testing. Women who are in the age group of 30-39 years were about 3 times more likely to be tested than the other age groups (95% CI=0.107, 77.679) and also those who preferred confidential linked testing were 1.4 times more likely to be tested (95% CI = 0.236, 8.915)(Table 6).

As shown on table 6 being tested for HIV in the past also appeared as an independent factor positively influencing acceptances of HIV testing, women who had prior HIV testing were about 8 times more likely to be tested than those who had no prior HIV testing.

Table 6 Adjusted determinant factors of accepting HIV counseling and testing among pregnant women following ANC, at SPHMMC in Addis Ababa, 2017.

Variables		Frequency	Crude OR	Adj. OR	95% CI
Age	19 years old or less	51	0.283	1.123	0.025,49.629
	20-29 years	201	2.098	1.112	0.052,23.798
	30-39 years	141	0.558	2.889	0.107,77.679
	40 years & above	25	1	1	
Prior HIV testing	Yes	282	10.973	8.528	2.661,27.330
	No	136	1	1	
Preferred method of testing	Confidential linked testing	350	2.718	1.450	0.236,8.915
	Anonymous	68	1	1	

6. DISCUSSION

In our study a total of 418 pregnant women attending antenatal clinics were included, with a response rate of 100%. Acceptance of HIV testing by pregnant women attending ANC at SPHMMC were 90.2%. Majority of the women included in the study were between 20 and 29 years. Majority of the study subjects were married, about 334 (79.9%) lived with their husbands. About the time when MTCT could occur, 69.9%, 70.1% & 60.3% mentioned transmission of the virus during pregnancy, delivery and breast-feeding respectively. Regarding the intervention to reduce MTCT, about 85.9% mentioned that they know about intervention that reduces MTCT. Acceptance of HIV counseling and testing was higher in the age group of 20-29 years compared to other age groups (OR=2.098, 95% CI=0.420, 10.481).

The strongest association of acceptance of HIV counseling and testing were found with prior HIV testing, age and preferred method of testing. Women who are in the age group of 30-39 years were about 3 times more likely to be tested than the other age groups (95% CI=0.107, 77.679) and also those who preferred confidential linked testing were 1.4 times more likely to be tested (95% CI = 0.236, 8.915). Being tested for HIV in the past also appeared as an independent factor positively influencing acceptances of HIV testing, women who had prior HIV testing were about 8 times more likely to be tested than those who had no prior HIV testing.

This study shows that there was association between school attendance and acceptance of voluntary HIV testing. Acceptance of VCT significantly increased in those mothers who attended school. But in contraire the study shows that higher level of education (secondary and tertiary) of the mother were not associated with acceptance of voluntary HIV testing. The result of this study is inconsistent with the findings from other studies. A study from Hong Kong reported that level of education was significantly associated with the acceptance of HIV testing (1). Another study conducted in urban and rural areas in Zambia, reported that HIV test rate increases with increasing educational attainment, about three to four times higher when contrasting the two extreme levels of education (25). Also a study conducted in Zambia showed in the more educated, the higher the HIV test rate, the odds ratio between the two most extreme level of education (<8 years vs. >12 years of schooling) was (OR=3.4, 95% CI, 1.33, 8.83) (26). But in one study done among pregnant women in Dar-es-salaam, Tanzania, higher level of education of the mother was associated with decreased acceptance of testing (27). The

association of acceptance of testing and education can be explained by the fact that educated mothers are better in assessing the advantage of testing and may be aware of the benefits of the test and treatment options that reduce mother to child transmission of HIV infection.

This study also revealed that income is associated with acceptance of HIV testing, in our data set this can be seen in the increasing testing with increasing income of the household. This finding however, disagree with a study from Tanzania that showed association of higher socio-economic status with significant increasing refusal of HIV testing (27). In a study among Rwandans showed that women whose partners had well-paid job were about four times more likely than their counterparts to accept HIV testing (6).

In our study less proportion of the study subjects consider themselves to be at risk of getting HIV/AIDS (13.9 %). Similar finding were reported from studies conducted in Dire Dawa among pregnant women, which was about 24.8% (18). A community based studies conducted in Assossa on acceptability of voluntary counseling and testing and in another study conducted in three sites(Addis Ababa, Arsi, and Debre Berhan)on perception of risk and vulnerability to HIV/AIDS reported similar finding (33,34). In this study perceived risk of getting HIV was found to be associated with acceptance of HIV testing. Women who had self-perceived risk of getting HIV were also about 7 times more likely to accept VCT compared to those who were not (OR=7.125, 95% CI= 0.960, 52.870).

This study showed pregnant women who had HIV testing in the past were eight times more likely to be tested than those women who had no prior HIV testing experience. When adjusted for other variables prior HIV testing experience was independently and significantly associated with VCT acceptance. This finding was also reported by other studies. A study conducted in Zambia indicated that having HIV test in the past was an independent factor positively influencing readiness for testing (26), and a study from Barbados showed women who had had a prior HIV test were less likely to refuse HIV testing during the current pregnancy when compared to women who had no prior HIV testing (28). The possible explanation for association between previous testing and current one is that women who had HIV testing in the past are more likely to have change in their sexual behavior after knowing their serostatus. This was shown by studies that assessed behavioral change following HIV VCT. As a result women who

were tested in the past are more likely to take the test considering their previous test result and the change in their sexual behavior and thinking the outcome of the current test to be negative.

In this study age of the mother was found to be associated with the acceptance of HIV testing. Acceptance of VCT was higher in the age group of 20-29 years compared to other age groups. A study done in Zambia showed test rate were lowest among adolescents, while a study in Tanzania indicated old age were associated with decreased screening acceptance, which is also inconsistent with previous studies that showed association of old age with both decreased and increased test acceptance (25, 27).

In this study there was no association between knowledge of existence of intervention that reduces MTCT of HIV and acceptance of HIV testing. This doesn't agree with findings from other studies. In two other studies knowledge about treatment that reduces mother-to-child transmission of HIV was found independently associated with testing. A study conducted in the USA to determine whether the knowledge of Zidovudine treatment to reduce the risk of MTCT showed increase of the likelihood of HIV testing among pregnant women of child bearing age and among pregnant women receiving prenatal care. Majority of the study participant from both surveys reported that they were more likely to take a test for HIV knowing about Zidovudine treatment (31).

The finding of this study also showed significant association between the number of antenatal visit and acceptance of prenatal HIV testing. Mothers who had two or more antenatal visits were more likely to be tested than those who had less visits ($P=0.025$). This association between number of antenatal visit and acceptance of prenatal HIV testing may be explained by frequent exposure of mothers to information regarding HIV, MTCT and PMTCT during their follow up, which may influence the mother to take the test. In this study there was also association between number of pregnancy a woman had, including the current one, and acceptance of voluntary prenatal HIV testing. This finding is inconsistent with a study conducted in Rwanda (6).

In our study knowledge of mother-to-child transmission as a route of HIV transmission during pregnancy, and avoidance of breast-feeding as a means to reduce mother-to-child transmission of the virus were not associated with the acceptance of VCT. This finding disagree with a study reported from South Africa (30).

Almost all pregnant women in this study heard about VCT from different information sources, but the source of information was not found associated with acceptance of VCT. In a study conducted in Hong Kong acceptance of HIV testing was strongly associated with access to information, that reported pregnant women who got information from one or two source were about 4 times more likely to accept the test than those who had no access to information, and those who had from three or more sources were associated with even higher acceptance (1).

7. Strength and Limitation of the study

Strength

The sample size was large enough for cross-sectional study.

Limitation

The limitation of this study was due to SPHMMC which is tertiary hospital and most of the patients are coming from the periphery by referral they already counseled about HIV testing which result in increasing acceptance of HIV counseling and testing. Therefore, this may result in overestimation of the findings.

8. Conclusion and Recommendation

8.2. Conclusion

Acceptance of HIV testing by pregnant women attending ANC at SPHMMC were 90.2%. This study which was conducted among pregnant women attending antenatal care at SPHMMC to determine factors associated with acceptance of antenatal HIV counseling and testing identified the following as a risk factor which are prior HIV testing, age, preferred method of testing and educational status. Pregnant mothers who had prior HIV testing accept antenatal HIV testing than those mothers who had no prior testing. Women who are in the age group of 20-29 years are more likely to accept HIV testing. Pregnant mothers who preferred confidentially linked testing are more likely to take antenatal HIV testing. Women who had attended school are more likely to accept HIV counseling and testing, than those who are illiterate. Women who are pregnant for the second or third time and those who had at least two ANC visit are more likely to take antenatal HIV testing. Pregnant women who had prior HIV testing and those who had high self-perceived risk are more likely to take prenatal HIV testing.

8.2. Recommendation

- Based on the finding of this study we recommend on the need for intensive and continued education, to pregnant mothers, about prenatal HIV transmission, the role of HIV counseling and testing on the prevention of mother-to child transmission of the virus, and about the existence of intervention that reduce the possibility of prenatal transmission of the virus.
- According to this study we recommend to MOH and Addis Ababa health administration to encourage women's to have prior HIV testing.

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ANNEX 1 QUESTIONNAIRE IN ENGLISH
ST, PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE

DEPARTMENT OF PUBLIC HEALTH

QUESTIONNAIRE

Consent

My name is Abreham Assefa. I am an intern at SPHMMC undergraduate program. I am interviewing pregnant women attending antenatal clinic about factors affecting acceptance of voluntary HIV testing among pregnant women.

I am going to ask you some question about voluntary HIV counseling and testing, your responses are completely confidential; your name will not be written on the form and will never be used in connection with any of the information you provide. You don't have to answer any question you don't want to answer, however your honest answer to this question will help us to understand factors affecting acceptance of voluntary HIV counseling and testing. The interview will take 20 to 30 minutes of your time. I would like to thank you in advance for your help, are you willing to participate.

If yes-(1) continue

No-(2) stop

Thank You!!

Interviewer signature certifying that informed consent has been given verbally.

Interviewer name _____

Signature_____

Date of interview_____

1. Respondent ID Number _____

Section I: Back ground characteristics

Sr. no	Question	Coding categories	skip	code
101	How old are you?	• 19 years old or less 1 • 20-29 years 2 • 30-39 years 3 • 40 years& above 4		
102	To which ethnic group/tribe do you belong?	• Amahara 1 • Oromo 2 • Tigire 3 • Other		
103	What religion are you?	• Orthodox 1 • Muslim 2 • Catholic 3 • Protestant 4 • Other 5		
104	Have you ever attended school?	• Yes 1 • No 2	105	
105	What is the highest level of school you completed	• Literate(read & write) 1 • Primary 2 • Secondary 3 • Tertiary (above 12) 4		
106	What is your occupation?	• Employed 1 • Jobless 2 • Student 3 • Other (specify)_____ 4		
107	Family income per month	• <1000 birr 1 • 1000- 2000 birr 2 • 2000 birr & above 3		
108	Marital status	• Unmarried 1 • Married 2	109	

109	If married are you currently living with your partner?	• yes 1 • no 2		
110	Number of pregnancy including the current one	• One 1 • Two 2 • Three 3 • Four & above 4		
111	The number of antenatal care visit attended in the current pregnancy	• At least two 1 • Less than two 2		

Section II: knowledge and attitude towards HIV, MTCT and PMTCT

No	Question	Coding categories	skip	Code
201	Have you ever heard of HIV or disease called AIDS?	• Yes 1 • No 2 • I don't know 3		
202	Do you know how HIV is transmitted?	-Yes 1 -No 2	203 ▶	
203	If the answer is yes to question number 202 mention the route of transmission?	• Sexual intercourse 1 • Infected blood 2 • By sharing sharps 3 • Mother to child 4 • Injection by unsterile needle 5 • Other (specify) _____ 6		
204	Can HIV/AIDS be cured?	• Yes 1 • No 2		
205	Can a pregnant woman with HIV/AIDS transmits the virus to her unborn baby?	• Yes 1 • No 2		

206	When do you think an HIV positive pregnant women transmit the virus to her baby? Circle more than one answer	• During pregnancy 1 • At child birth 2 • During Breast feeding 3		
207	If a woman is infected with the AIDS virus, is there any way to avoid transmission to the baby?	• Yes 1 • No 2 •	209	
208	Do you know the existence of intervention which reduce mother to child transmission of HIV virus?	Yes 1 No 2	210	
209	What can a woman do to reduce transmission of the HIV virus?	• Use antiretroviral drug 1 • Avoid breast feeding 2 • Other(specify)----- 3		

Section III – Personal risk perception

Sr.no	Question	Coding category	Skip	Code
301	Do you think you can get the virus?	- Yes 1 → - No 2 →	302, 303 304	
302	What are your chances of getting infected with HIV?	- Moderate 1 - High 2 - I don't know 3		
303	If the answer is moderate or high, what are the reasons?	- I had multiple sexual partners 1 - I had sexual contact without condom 2 - I had injection with unsterile needle 3 - I had sexual contact with HIV positive person 4 - Other specify_____ 5		
304	If your response is NO to question number (301), what are the reasons?	- I trust my sexual partner 1 - No injection with unsterile needle 2 - I always use condom 3		

Section IV – Voluntary HIV Counseling and Testing

Sr.no	Question	Coding categories	skip	code
401	Have you ever heard of voluntary HIV counseling and testing?	- Yes 1 - No 2		

402	What is the source of information, if the answer is yes?	• Mass media (Radio, TV, etc) 1 • Health work or Institution 2 • Friends 3 • Neighbors 4 • Other (specify) _____ 5		
403	Have you ever told about the benefit of HIV testing?	• Yes 1 • No 2		
404	Do you think voluntary HIV counseling and testing is important for pregnant women	• Yes 1 • No 2		
405	I don't want to know the result but have you ever had voluntary counseling and testing?	• Yes 1 • No 2	406, 407 409	
406	When did you have your most recent HIV test?	• Within the past one year1 • Between one and two year 2 • Between two and four year3 • More than four year4		
407	What is the reason for testing? If the answer to question number (405) is yes.	• Marriage 1 • To protect the child 2 • To protect partner 3 • To know my status 4 • If Other (specify)_____ 5		

408	Did you voluntarily undergo the HIV test or were you requested to have the test?	• Voluntarily 1 • Requested 2 • Other(specify)_____ 3		
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Sr.no	Question	Coding Category	skip	code
409	What are some of the reasons you think for refusal of voluntary HIV testing?	• Inability to deal with stress of being positive 1 • Fear of rejection by the community 2 • Uncertainty about husbands reaction 3 • Non respect of confidentiality 4 • Other(specify)_____ 5		
410	Do you receive counseling before testing?	• Yes 1 • No 2	411	
411	Were you satisfied with HIV counseling you received?	• Yes 1 • No 2		
412	Don't tell me the result; do you know the result of your test?	• Yes 1 • No 2		
413	Do you know someone who had been tested for HIV virus?	• Yes 1 • No 2		
414	Do you need to be tested if you know the existence of such intervention?	• Yes 1 • No 2		

415	To whom do you think that the test is of benefited during pregnancy?	• Mother alone 1 • Baby alone 2 • Mother and baby 3 • Health workers 4 • Other (specify) _____ 5		
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Sr.no	question	Coding categories	skip	code
416	By whom do you prefer to get voluntary counseling and testing?	• Doctor 1 • Nurse 2 • Trained counselor 3 • HIV patient 4 • Other (specify) _____ 5		
417	Which method of testing do you prefer?	• Confidential linked testing 1 • Anonymous 2 • Other (specify) _____ 3		
418	Which way do you prefer to obtain HIV test result?	• Face to face(verbally) 1 • Secretive letter 2 • Through relative or partner 3 • Telephone 4 • Other specify 5		
419	Did you receive counseling after getting your result?	• Yes 1 • No 2		
420	Would you talk your partner before having HIV test?	• Yes 1 • No 2		
421	Would you tell your partner the test result of an HIV /AIDS test	• Yes 1 • No 2		

422	Do you went to be tested?	• Yes 1 • No 2		
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ANNEX 2 QUESTIONNAIRE IN AMHARIC

የቅዱስ ጳውሎስ ሆስፒታል ሚሴንደሮ ህክምና ኮሌጅ

የሕብረተሰብ ጤና አጠባበቅ ክፍል

ቃለ መጠይቅ

ስሜ አብርሃምአበፋይባለል። የቅዱስ ጳውሎስ ሆስፒታል ሚሴንደሮ ህክምና ኮሌጅ የመጨረሻ አመት የህክምና ተማሪ ነኝ። በዚህ የቅ-መ ወሊ- ምርመራ ክሊኒክ በሚደረገው በፍቃድኝነት ላይ የተመረ ዘ የኤች አይ ቪ ምክርና ምርመራ በነፍስጡር ሴቶች ያለው ተቀባይነትን የሚወስኑ ነገሮች ላይ በሚጠናው ጥናት ላይ መጠይቆችን እጠይቃለሁ።

አሁን የኤች አይ ቪ ኤ-ስን; የኤች አይ ቪ ቫይረስ ከእናት ወደ ልጅ መተላለፍን; የኤች አይ ቪ ኤ-ስ ቫይረስ ከእናት ወደ ልጅ እንዳይተላለፍ ስለሚወሰን እርምጃ እንዲሁም ስለቅ-መ ወሊ- በፈቃድኝነት ላይ የተመሠረተ የኤች አይ ቪ ቫይረስ ምክርና ምርመራን የተመለከቱ ጥያቄዎችን እጠይቃለሁ። መጠይቁ ላይ ስምም ሆነ የእርስዎን ማንነት የሚገልጽ ማንኛውም ዓይነት ነገር አይጠቀስም ወይም አይያዝም። በመጠይቁ ወቅት የማይፈልጉትን ማንኛውንም ዓይነት ጥያቄ መተው ወይም በማንኛውም ሰዓት መጠይቁን ማቋረጥ ይችላሉ። ሆ ም ግን እርስዎ የሚሰጡን መረጃ ወደፊት የቅ-መ ወሊ- የኤች አይ ቪ ምክርና ተቀባይነትን ከፍ ለማ-ረግ በጣም ጠቃሚ ይሆናል። ስለሆነም በቅ-ሚያ ስለሚያደርጉልን ትብብር ምስጋናችን ከልብ የመነጨ ነው። መጠይቁ ከ20 እስከ 30 ደቂቃ ሊወስ- ይችላል። በዚህ ለመሳተፍ ይፈልጋሉ ?

መልሱ አዎ ከሆነ ወደሚቀጥለው ገጽ እለፍ/ፊ

መልሱ አይ አልፈልግም ከሆነ አመስግነህ/ሽ መጠይቁን አቋርጥ/ጭ

መጠይቁን የሞላው ሰው ፊርማ የማያሳየው በጥናቱ ለሚሳተፉ እናቶች የቃል የጥናቱ ሚስጥራዊነት ማረጋገጫ መስጠቱን ነው።

መጠይቁን የሞላው ሰው ስም _____

ቀን _____

ፊርማ _____

1.የተሳታፊ ተራ ቁጥር_____

ክፍል አን- አጠቃላይ የግለሰብ መረጃ

ተ.ቁ፣	ጥያቄ	መልሶች	ይለፍ	—
101	ዕ-ሜዎ ስንት ነው ?	- ≤ 19 ዓመት 1 - ከ20-29 ዓመት 2 - ከ30-39 ዓመት 3 - 40 ዓመትና ከዚያ በላይ 4		
102	ብሔርዎ/ ብሄረሰብዎ ምን-ን ነው ?	- አማራ 1 - ኦሮሞ 2 - ትግሬ 3 - ሌላ /ይጠቀስ/ 4		
103	ሐይማ ትዎ ምን-ን ነው ?	- ኦርቶዶክስ 1 - ሙስሊም 2 - ካቶሊክ 3 - ፕሮቴስታንት 4 - ሌላ /ይግለጹ-/ 5		
104	በት/ቤት ውስጥ መደበኛ ትምህርት ተከታትለው ያውቃሉን ?	- አዎ አውቃሉ 1 - አላውቅም 2	105	
105	የትምህርት ደረጃዎ ምን ያህል ነው ?	- ማንበብና መፃፍ 1 - አንደኛ ደረጃ 2 - መለስተኛ ሁለተኛ ደረጃ 3 - ከፍተኛ ሁለተኛ ደረጃ 4 - ከ12ኛ ክፍል በላይ 5		
106	ሥራዎ ምን-ን ነው ?	- ሥራ ያለው 1 - ሥራ የሌለው 2 - ተማሪ 3 - ሌላ /ይጠቀስ/ 4		

107	በአማካይ የቤተሰብ የወር ገቢ ምን ያህል ነው ?	- ከ200 ብር ያነሰ 1		
		- ከ200-450 ብር 2		
		- 450ብርና ከዚያ በላይ 3		
		- በትክክል አይታወቅም 4		
108	የጋብቻ ሁኔታ ?	- ያላገባ 1	109	
		- ያገባ 2		
109	ካገቡ አሁን የሚረዱት ከባለቤትዎ ጋር ነው ?	- አዎ 1		
		- አይደለም 2		

ተ.ቁ	ጥያቄ	መልሶች	ይለፍ	—
110	የእርግዝና ቁጥር የአሁኑንም እርግዝና ጭምር?	- አን— 1		
		- ሁለት 2		
		- ሶስት 3		
		- >=አራት 4		
111	መአሁኑ የእርግዝና ጊዜ የቅመ ወሊ-ምርመራ ክትትል መጠን በቁጥር	- ቢያንስ ሁለት ጊዜ 1		
		- ከሁለት ያነሰ 2		

ክፍል ሁለት እናቶች ስለ ኤች አይ ቪ ኤስ-ኤስ፣ ስለኤች አይ ቪ ቫይረስ ከእናትወደ ሕፃናት መተላለፍ እንዲሁም ከእናት ወደ ልጅ እንዳይተላለፍ ስለሚወሰዱ የመከላከያ እርምጃዎች ያላቸው ዕውቀትና አመለካከት

ተ.ቁ	ጥያቄ	መልሶች	ይለፍ	—
201	ስለ ኤች አይ ቪ /ኤስ-ኤስ በሽታ ስምተው ያውቃሉ ?	- አዎ 1 - አልሰማሁም 2		
202	ኤች አይ ቪ /ኤስ-ኤስ ቫይረስ እንዴት እንደሚተላለፍ ያውቃሉ ?	- አዎ 1 - አላውቅም 2	▶ 203	
203	ለተራ ቁጥር 202 መልሱ አዎ ከሆነ የመተላለፊያ መንገዶቹን ይጠቀሱ (ከአን- በላይ መልስ መስጠት ይቻላል)	በግብረሥጋ ግን-ሩ 1 በቫይረሱ በተበከለ ደም 2 ስለት ነገሮችን በጋራ በመጠቀም 3 ከእናት ወደ ልጅ 4 ሌላ /ይጠቀስ/ 5		
204	በኤች አይ ቪ ኤስ-ኤስ በሽታ የተያዘ ሰው ይ-ናል ብለው ያስባሉ?	- አዎ 1 - አይ-ንም 2		
205	የኤች አይ ቪ ቫይረስ በደሟ ውስጥ ወይም የኤስ-ኤስ በሽታ ያላት እናት ቫይተሱን በማህፀኗ ውስጥ ወዳለው ፅንሰ ልታስተላልፍ ትችላለችን?	- አዎ 1 - አታስተላልፍም 2		
206	ኤች አይ ቪ ቫይረስ በደሟ ውስጥ ያለ እናት ወይም በኤስ-ኤስ በሽታ የተያዘች እናት ቫይረሱን መቼ በማህፀኗ ውስጥ ወዳለው ጽንሰ የምታስተላልፍ ይመስልዎታል ?	- በእርግዝና ወቅት 1 - በወሊ- ወቅት 2 - ጡት በማጥባት 3		

207	ኤስ ቫይረስ የተያዘች ሴት ጡት በማጥባት ወደተወለደው ሕፃን ቫይረሱን ማስተከላለፍ ትችላለች?	- አዎ 1 - አታስተላልፍም 2		
208	አንዲት ሴት የኤች አይ ቪ ቫይረስ ቫይረስ በደሟ ውስጥ ካለ እንዳይተላለፍ የሚያደርግ መንገድ አለን?	- አዎ 1 - የለም 2	209	
209	ቫይረሱን ከእናት ወደማህፀኗ ውስጥ ወዳለ ፅንሰ እንዳይተላለፍ የሚያደርግ ሕክምና መ ሩን ያውቃሉን?	- አዎ 1 - አላውቅም 2	210	
210	የጥያቄ 209 መልስ አዎ ከሆነ ቫይረሱ በደሟ ውስጥ ያለ እናት ቫይረሱን ወደ ማሕፀኗ ውስጥ ወዳለ ፅንሰ እንዳይተላለፍ ምን ማረጋገጫ አለባት?	- የቫይረሱን መተላለፍ የሚቀንስሙኝነት መውሰድ 1 - ጡት ያለማጥባት 2 - ሌላ ካለ ይጠቀስ 3		

ክፍል ሶስትስለበሽታው የመጋለጥ ግላዊ እሳቤ

ተ.ቁ	ጥያቄ	መልሶች	ይለፍ	—
301	የኤች አይ ቪ ቫይረስ ሊያዘኝ ይችላል ብለው ያስባሉን ?	- አዎ 1 - አላስብም/ የለም 2	▶ 302,303 ▶ 304	
302	መቫይረሱ የመያዝ ዕልዎ ምን ያህል ነው ?	- መካከለኛ 1 - ከፍተኛ 2		

303	የጥያቄ 301 መልስ አዎ ከሆነ ምክኒያቱ ምን-ን ነው ?	- ያለ ንድም የግብረሥጋ ግን-ሩነት ስለፈፀምኩ 1 - ኤች አይ ሺ ፖዘቲቭ ከሆነ ሰው ጋርየግብረሥጋ ግን-ሩነት ስለፈፀምኩ 2 - ብዙ የወሲብ ጓደኞች ስለነበሩ 3 - ሌላ ሰው በተወጋበት መርፌ ስለተወጋሁ 4 - ሌላ /ይጠቀስ/ 5		
304	የጥያቄ 301 መልስ አይደለም ከሆነ ምክኒያቱ ምን-ን ነው ?	- በእን- ሰው ተወስኘ ስለም ር 1 - በተበከለ መርፌ ስለማልጠቀም 2 - ሁልጊዜ ንድም ስለምጠቀም 3 - ሌላ /ይጠቀስ/ 4		

ክፍል አራት

የቅ- መ ኤች አይ ቪ የምክር አገልግሎትና የኤች አይ ቪ ምርመራ የተመለከተ ጥያቄ

ተ.ቁ	ጥያቄ	መልሶች	ይለፍ	ኩ-
401	በፈቃደኝነት ላይ ስለተመሠረተ የኤች አይ ቪ የምክር አገልግሎትና ምርመራ ሰምተው ያውቃሉን ?	- አዎ 1 - አልሰማሁም 2 - አላውቅም/ አላስታውስም 88 - መልስ የለም 99		
402	የጥያቄ 401 መልስ አዎ ከሆነ ከዬት ሰሙ?	- ከሬዲዮ፣ ከቴሌቪዥን፣ ከጋዜጣ 1 - ከጤና ባለሙያ/ ከጤና - ርጅት 2 - ከጓደኛ 3 - ከጎረቤት 4 - ሌላ /ይጥቀስ/ 5		
403	ስለኤች አይ ቪ ምርመራ ጥቅም ሰምተው ወይም ተነግሮዎት ያውቃል ?	- አዎ 1 - አልተነገረኝም 2 - መልስ የለም 99		
404	በፈቃደኝነት ላይ የተመሠረተ የኤች አይ ቪ የምክር አገልግሎትና ምርመራ ለነፍሰጡር ሴት ጠቃሚ ነው ብለው ያስባሉን ?	- አዎ 1 - አላስብም 2 - አላውቅም 88 - መልስ የለም 99		
405	ውጤቱን አይንገሩኝ ነገር ግን በፈቃደኝነት ላይ የተመሠረተ የኤች አይ ቪ የምክርና ምርመራ አ- ርገው ያውቃሉን ?	- አዎ 1 - አላደረኩም 2 - አላውቅም/ አላስታውስም 88 - መልስ የለም 99	406 407 409	→

406	በቅርቡ ወይም ለመጨረሻ ጊዜ የኤች አይ ሺ ምርመራ ያደረግሽው መቼ ነው ?	- ባለፈው ዓመት 1 - ከ1-2 ዓመት በፊት 2 - ከ2-4 ዓመት በፊት 3 - ከ4 ዓመት በፊት 4		
407	ለጥያቄ 405 መልሱ አዎ ከሆነ ለመመርመር ምክኒያትዎ ምን ነበር ?	- ለጋብቻ 1 - የሻይረሱን ወደልጆ መተላለፉን ለመከላከል 2 - ፍቅረኛዬን በሻይረሱ ለመከላከል 3 - የራሴን ሁኔታ ለማወቅ 4 - ሌላ /ይጠቀስ/ 5		

ተ. ቁ	ጥያቄ	መልሶች	ይለፍ	—
408	የኤች አይ ሺ ምርመራ ያደረጉት በራስዎ ፈቃድ ነው ወይስ ምርመራውን እንዲያደርጉ ተጠይቀው ነው ?	- በፍቃደኝነት ነው 1 - በተጠየኩት መሠረት ነው 2 - ሌላ /ይጠቀስ/ 3		
409	በፈቃደኝነት ላይ የተመሠረተ የኤች አይ ሺ ምርመራ ላለማ-ረግ ምክኒያት ይሆናሉ የሚሏቸው ነገሮች ምን-ን ናቸው?	- በበሽታው ምክኒያት የሚመጣውን ጭንቀት በመፍራት 1 - በሕብረተሰቡ ዘን- መገለልን በመፍራት 2 - ከባል የሚያጋጥምን ምላሽ በመፍራት 3 - ሚስጠር ስለመጠበቁ ስለማልተማመን 4 - ሌላ ካለ ይጠቀስ 5		
410	የኤች አይ ሺ ቫይረስ የደም ምርመራ ከማ-ረግዎ በፊት የምክር አገልግሎት አግኝተው ነበር ?	- አዎ 1 - አላገኘሁም 2	4▶	
411	በተሰጠዎት የቅ-መ ኤች አይ ሺ ምርመራ የምክር አገልግሎት ረክተዋልን ?	- አዎ 1 - አልረካሁም 2		
412	ለኔ አትንገሪኝ ነገር ግን ለራስሽ ውጤቴን አውቀኸል?	- አዎ 1 - አላወኩም 2		

413	ከዚህ በፊት የኤች አይ ቪ ቫይረስ የደም ምርመራ ያደረገ ሰው ያውቃልን?	- አዎ 1 - አላውቅም 2		
414	የኤች አይ ቪ ቫይረስን ከእናት ወደ ልጅ መተላለፍ የሚቀንስ ሕክምና እንዳለ ቢያውቁ ለመመርመር ፍቃደኛ ነዎትን ?	- አዎ 1 - አይደለሁም 2		
415	የኤች አይ ቪ ቫይረስ ምርመራ ማድረግ ለማን የሚጠቅም ይመስልዎታል ?	- ለእናትዬዋ ብቻ 1 - ለልጄ ብቻ 2 - ለእናትና ለልጄ 3 - ለጤና ባለሙያ 4 - ሌላ /ይጠቀስ/ 5		

416	በፍቃደኝነት ላይ የተመሠረተ የኤች አይ ቪ ኤስ-ቪ የምክርና የምርመራ አገልግሎት ማን በሰጥዎት ይመርጣሉ ?	- በሐኪም 1 - በነርስ 2 - በኤች አይ ቪ የምክር አገልግሎት የሰለጠነ 3 - በኤች አይ ቪ በሽተኛ 4 - ሌላ /ይጠቀስ/ 5		
417	የኤች አይ ቪ ኤስ-ቪ ቫይረስን የምርመራ አገልግሎትን በተመለከተ የቱን የምርመራ ዓይነት ይመርጣሉ ?	- ስም ተጠቅሶ በሚስጥር የሚያገለግል ምርመራ 1 - ስም የማይገለጽበት ምርመራ 2 - ሌላ /ይጠቀስ/ 3		

418	የኤች አይ ቪ ቫይረስ የደም ምርመራ ውጤትዎን በምን ዓ ይነት መንገ- ቢሰጥዎት ይመርጣሉ ?	- ፊት ለፊት 1 - በሚስጥራዊ ደብዳቤ 2 - በዘመ- /በጓደኛ/ በኩል 3 - በስልክ 4 - ሌላ /ይጠቀስ/ 5		
419	የኤች አይ ቪ ቫይረስ የደም ምርመራ ውጤትዎን ከወሰዱ በኋላ የምክር አገልግሎት አግኝተዋልን ?	- አዎ 1 - አላገኘሁም 2		
420	የኤች አይ ቪ ኤስ-ቢ የደም ምርመራ ከማ-ረግዎ በፊት ለፍቅረኛዎ /ለባለቤትዎ/ አማክረው ነበር ?	- አዎ 1 - አላማክርኩም 2		
421	የኤች አይ ቪ ኤስ-ቢ የደም ምርመራ ውጤትዎን ካወቁ በኋላ የምርመራውን ውጤት ለፍቅረኛዎ /ለባለቤትዎ ይነግራሉ ?	- አዎ 1 - አልነግርም 2		
422	የኤችአይቪምርመራአንዲደረግልዎትይፈልጋሉ?	- አዎ 1 - አይፈልፈልግም 2		