

**ADDIS ABABA UNIVERSITY FACULTY OF MEDICINE  
DEPARTMENT OF COMMUNITY HEALTH**

*Willingness of pregnant women attending antenatal  
care towards voluntary counseling and testing.*

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## ***Dedication***

*This thesis is dedicated to my lovely wife Genet G/Her.*

*With love to my daughters Luna and Dagmawit.*

*With love to my sisters Furtuna and Alganesh.*

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## Acronyms

<b>AIDS</b>	Acquired Immunodeficiency Syndrome
<b>ANC</b>	Antenatal care
<b>AOR</b>	Adjusted odds ratio
<b>ART</b>	Anti-retroviral Therapy
<b>BCC</b>	Behavioral change communication
<b>CSA</b>	Central Statistical Authority
<b>CSIS</b>	Center for strategic and International Studies
<b>DART</b>	Demonstration of Antiretroviral Therapy
<b>DPCD</b>	Department for Prevention and Control of Disease
<b>EPHA</b>	Ethiopian Public Health Association
<b>FGD</b>	Focus group discussion
<b>FHI</b>	Family Health International
<b>FMOH</b>	Federal Ministry of Health
<b>GOV</b>	Government
<b>H.C</b>	Health center
<b>HIV</b>	Human Immunodeficiency Virus
<b>IEC</b>	Information Education Communication
<b>MTCT</b>	Mother -to- child transmission
<b>NDP</b>	Nodola Demonstration project
<b>NGO</b>	Non governmental organization
<b>OR</b>	Odds ratio
<b>PMTCT</b>	Prevention of Mother -to- child transmission
<b>SPSS</b>	Statistical package for social science
<b>STI</b>	Sexually Transmitted Infections
<b>TB</b>	Tuberculosis
<b>TBA</b>	Traditional Birth Attendant
<b>UN</b>	United Nations
<b>UNAIDS</b>	Joint United Nations program on HIV/AIDS
<b>UNGASS</b>	United Nations General assembly special session for HIV/AIDS
<b>VCT</b>	Voluntary counseling and testing
<b>WHO</b>	World Health Organization

## **Abstract**

Voluntary HIV counseling and testing (VCT) is one of the priority interventions in HIV/AIDS prevention, care and support. VCT is an entry point for the prevention of HIV transmission from mother to child and accessing VCT benefit from PMTCT services.

This study was designed, to assess the magnitude and identify factors associated with pregnant women's expressed willingness towards VCT and describe their knowledge.

Cross-sectional institution based interview survey of 421 pregnant women was held in one district hospital, two health centers and three health stations. The study was complimented with four FGD and Key-informant interviews. The study was done in Wukro & Kleteawlaelo Woredas of Tigray Regional State, north Ethiopia.

The expressed willingness of study participants for VCT was found to be 74.1%. On examination of multiple factors to detect whether there is association with willingness to VCT or not: being multigravida (AOR=7.1, 95%CI=1.05,48.3),intention to discuss HIV positive result with partner(AOR=7.01, 95% CI=1.74,28.15), believing partner has a greater role for VCT(AOR=3.84, 95%CI=1.12,13.23)were found to have an association .The level of awareness on VCT and PMTCT was 80.3 and 88.5% respectively.

This study revealed high-level of awareness about HIV, with as well marked misconception. Expressed willingness was lower when compared to other studies and it was influenced mainly by gravidity of the woman and male partners. Male partner involvement and coordinated IEC can assist to overcome barriers of willingness to VCT.

This study could contribute for VCT and PMTCT program expansion in the study area and elsewhere with similar characteristics.

# 1. Background

## 1-1. INTRODUCTION

World wide, HIV/AIDS poses an enormous challenge on the survival of mankind .In 2005, over 40.3 million people were living with the virus and of those more than 70 % are in sub Saharan Africa (1).

According to the 2004 AIDS in Ethiopia, Fifth Report, the cumulative number of people living with HIV/AIDS by the year 2003 was 1.475 million. The prevalence of HIV was higher in women than in men (3.8% male and 5% female). In 2003, the distribution of HIV prevalence between urban and rural population was 12% and 2.6 % respectively, out of which about 96,000 were children under 5 years of age (2). A total of 128,000 HIV-positive pregnancies and an estimated 35,000 HIV positive births occurred in the same year. Among children aged 0-14 years, there were 35,000 new HIV infections, 25,000 new AIDS cases and 25,000 AIDS deaths (2).

According to the AIDS in Ethiopia, Fifth Report, the HIV prevalence for Tigray Region was estimated to be 4.6% for the year 2004. In the same year, HIV prevalence in the urban population was 12.4 %, and rural prevalence 2.8 %. A total of 93,695 persons were estimated to be living with HIV in 2004 and 13,000 new infections were expected to occur in the same year (2).In Tigray, existing data from antenatal surveillance sites in 2003 show: urban HIV prevalence ranges from 7.4 %, ( Adigrat H.C and Maichew Hospital) to 9.6% (Abiadi H.C); the rural prevalence ranges from 2.1 % ( Workamba H.C) to 6.0% (Atsbi-Wonberta H.C)(2). In Tigray, 8,700 HIV positive pregnancies were estimated and 2,400 HIV positive births were projected to occur in 2004 (2).

Cognizant of the negative socio economic impact of the pandemic in Ethiopia, the Government has taken several steps (3). The priority interventions include voluntary HIV counseling and testing (VCT), Prevention of Mother- to- Child Transmission (PMTCT), Care and Support (2). Many people with HIV in Ethiopia do not know that they are infected, only a small proportion of those with HIV /AIDS have access to reliable voluntary counseling and testing services (4).

Governments and international donors have been strengthening their technical and financial support to improve quality and coverage of VCT. The June 2001 UNGASS declaration of commitment proposed a 20% reduction of infant infection by 2005 and a 50% reduction by 2010 (5). It was designed to achieve this set of goals by ensuring that 80 % of pregnant women get access to; antenatal care, VCT, and all other components of PMTCT. Achievement of those targets relies substantially on identifying pregnant women infected with HIV (5). Missed opportunity for perinatal HIV prevention contributes to more than half of the cases of HIV-infections. ANC settings and HIV testing before delivery are major opportunities for perinatal HIV prevention (6).

Increased utilization of VCT services by different social groups in Ethiopia has contributed to national HIV incidence leveling off and progressing to decline over the last few years (2). Before expansion of programs, a baseline assessment of knowledge attitude and practice about HIV, MTCT, VCT and infant feeding should be conducted on pregnant women (5).

FHI's May 2002 Guideline, courageously explained the importance of identifying target audiences for VCT services and gaining key-informant understanding of client's needs, fears and misconceptions regarding VCT (7). The research on need assessment should also assist country-

specific VCT promotion strategies and messages so that women can make informed choice (7). Ethiopian Public Health Association (EPHA) has recommended more researches to be done with regard to the assessment of VCT demand among special vulnerable groups, which include pregnant women in urban and rural areas (8). So far, numerous researches have been conducted in the country regarding willingness towards VCT independently or concurrence with other study titles. However, the Tigray's Regional status of pregnant women was not ascertained. The endeavor in this study was thus to bridge the evident gap with respect to the knowledge & attitude of pregnant women attending ANC regarding VCT. This could give rise to formulate evidence-based VCT &PMTCT programs in the study area.

## 1-2 LITERATURE REVIEW

### **Voluntary counseling and testing**

Voluntary counseling and HIV testing (VCT) is the process by which an individual undergoes counseling, to enable him /her to make an informed choice about being tested for HIV. In recent years, voluntary HIV testing, in combination with pre and post –test counseling, has become increasingly important in national and international prevention and care efforts. VCT facilitates access to Care and Support the HIV infected and affected. This includes access to interventions to reduce mother- to-child transmission (MTCT) of HIV and continuum of care. Program experiences have also shown that VCT is one of the factors that help to reduce stigma and secrecy surrounding HIV /AIDS (3).

Access to VCT services, however, remains limited and demand is often low. In many high prevalence countries VCT is not widely available and people are often afraid of knowing their sero-status since there is little care and support available following testing. Furthermore, the quality and benefits of VCT, in particular with regard to confidentiality in counseling and access to clinical and social support, vary enormously (4). Access to information on one’s HIV status is a human right as well as a public health measure; people have the right to know their HIV status so that they can protect themselves and others from infection, improve their health care and plan for future (9).

### **Principles of VCT services**

Pre test, post-test counseling and ongoing counseling are part of the services provided at all VCT sites. Services are voluntary, and are used by clients who have already decided that they want to

take HIV test. Confidentiality is an essential component of all the services, at the same time, openness towards partners and families about the status is promoted. Services are anonymous and results are never given over the telephone or disclosed to another person. Clients are identified only by numbers even if they are registered under their name. Counseling sessions are tailored to the individual or couples attending. Continuity of counseling is also emphasized, with the majority of clients seeing the same counselor for pretest, post- test and ongoing counseling (5, 10.).

### **Situation of VCT in Ethiopia**

A situation assessment was conducted in September 2000 on VCT practice in Ethiopia (4). Findings indicated that most health institutions did not follow standardized VCT guideline; confidentiality was maintained in many of the institutions; the demand for HIV testing was growing but service provision by government health institutions was limited due to shortage of physical facilities, test kits and trained staff. Few health facilities had full time counselors; referral system for HIV positive individuals was not well organized and there was no system to monitor and evaluate VCT services (4). FMOH developed a National Guideline for VCT in April 2002 .This Guideline serves for; governmental, non-governmental, private health facilities and freestanding VCT centers and helped to standardize VCT services in the country (4).

Over the last few years, the number of VCT centers and the number of counselor's s has increased enormously as a result of efforts made to build the capacity of the institutions. The number of VCT centers recognized by Federal Ministry of health has reached 535 in 2005 and has continued to increase (11) .According to the Tigray HAPCO Annual Report of 2004-2005, the number of VCT centers has reached 51 of which 43 are Government owned and eight run by

Non Governmental and Charity Organizations. There are also three privately owned testing centers. During 2004-2005 fiscal years, the total number of people accessing VCT service was 19,832, which was dominated by male clients, 60.2% (12).

### **Knowledge and attitude towards VCT and PMTCT**

A study done in Gondar indicated that, the vast majority of the respondents (90%) were aware that one could check his/ her HIV status through blood test, and about 98% of respondents felt that VCT services are necessary (13). In Jijjiga Town, majority of youth (98.5 %) had heard about VCT and mass media was the most frequently reported source of information (14). In Jijjiga, majority of youth (92%) agreed that VCT is important to know sero-status of a person and 98% appealed to be tested. Government organizations were the most preferred sites for VCT (66.5%), followed by private institutions (29.7%) and NGO's (7.9) in Jijjiga. Willingness to pay for VCT services by Jijjiga youth was only 33.6%, most youth (74.3 %) preferred confidential VCT methods while 25.7% preferred Anonymous VCT Model. Youth preferred hospital and youth-center for HIV testing, and wanted cautious, well-mannered, same sex and age or elder counselors. Majority of youth in Jijjiga suggested VCT services to be free of charge. Most preferred physicians to be their counselors, and result to be delivered face to face. Regarding the expansion, the youth in Jijjiga Town recommended VCT for HIV to be available on out reach basis at youth-centers (14).

Another study revealed that a small proportion of mothers in Jimma Town had sufficient knowledge about MTCT (38.8 %) and PMTCT of HIV (41.8%) (15). In the same study area, 84% of mothers visited health institutions for antenatal care out of who 35.7% used VCT services

during their last pregnancy .The same study showed that 62.4 % of pregnant and lactating mothers had good attitude towards VCT (15).

### **Challenges of VCT and PMTCT**

Although the number of people accessing VCT centers continues to grow, there is still a lot of fear and miss-perception associated with HIV, especially around knowing one's status. Fear of stigmatization prevents many people from being tested and determining their HIV-status. Disclosure and discussion of VCT remains particularly difficult for women "Women are soft negotiators "Even if they are negative and know that they are at risk, they have fear (5). A few have strength to discuss the test and initiate condom use at home. There is a lot to be done, especially for poor women or women in rural areas who depend solely on husband's income (5). Studies done in Lusaka showed that 70% of respondents (women) share their test results with their partners. Women who disclose their sero-status were more likely to experience physical abuse, compared to those who did not (16).

A Report from Zimbabwe revealed collection of test result and mother-child follow-up were among the most common challenges which call for district approach and community involvement that were critical to develop PMTCT program in rural settings (17). Several barriers prevent people from accessing VCT services. Barriers include worries about confidentiality; perceived pressure to notify partners or family members; inaccurate risk perception; fear of stigma; lack of information about the realities of living with HIV; and inadequate post-test support care and treatment; VCT is also unavailable in many areas; and services needed to be expanded to reach more people from all risk groups (18).

In some settings, VCT services are unevenly distributed, causing under-utilization of certain sites and overcrowding at others. When counselors at over-crowded sites face ever-growing number of clients and inevitably, more positive tests results they frequently “burn out” from stress. Another challenge to scale up VCT services is gender inequality that continues to plague African societies (18).

In Jijjiga, providers found it difficult to discuss sexual issues with youth (14). All VCT sites in Jijjiga lack essential counseling elements, on going counseling, feed back and follow up supervision. Institutions in the Town are suffering from shortage of equipment; some trained counselors were not assigned in the service while non-trained persons were involved in counseling (14). Counselor burnout is a side effect of high demand that can harm a VCT program if it is not addressed. Training of more counselors is needed to avoid losing of counselors due to burn out. Formal quarterly training sessions and supervision do help counselors to recharge energy and ideas (18).

Disclosure of HIV positive result to a partner can make it easier for a woman to access the complete package of PMTCT services and follow program recommendations. However in a Nairobi study, Kenyan, respondents were asked about disclosure of their HIV status to their partner. Their experience was negative as it brought about partner abuse and breakup of their relationship on disclosing the results (19). In the same study, 89% of HIV positive women disclosed to some one. HIV positive women were less likely to disclose their test results than HIV negative women were (69% and 92% respectively,  $p < 0.001$ ) (19).

## **VCT utilization**

Study done to assess utilization of VCT services by Horizon and other partners showed that, the percentage of women who accept an HIV test after counseling ranges between 64% and 83% in eleven African countries (17). Findings from the same study identified that on average 20 to 50% of women do not receive their results for a variety of reasons (17). On the other hand, women pointed out that a positive result was delivered in the context of services to help them have a healthy baby as well as information about living positively with HIV (17). Report from a PMTCT program in rural Zimbabwe showed acceptability of VCT remained above 90 percent within 18 months of implementation (16).

VCT services at Nodola Demonstration Project (NDP) Zambia and demonstration of anti retroviral therapy (DART), South Africa, were serving mainly antenatal clinic attendees (5). In the DART Project (Zola clinic); between October 2000 and February 2001, the average antenatal care attendance per month was 250 women. Pre-test counseling was given to 1243 women in 5 months of these 88.6 % agreed to have HIV test. In 6 clinics in the NDP 974 people utilized VCT services between April 2000 and February 2001, including 846 women and 124 men. In both projects, very few male partners of pregnant women came forward for testing. In the Zola (DART Project), there were only 12 men over a five - month period. However, according to project managers in the NDP, the number of couples and men is slowly increasing, which might be related to the special efforts made through community counselors. Partners/ spouses of female clients require encouragement to utilize VCT services. The fact that so few male partners /spouses are willing to be tested adds to the discrimination and isolation of HIV- positive women.

Counselors see the acceptance of HIV test as a first step for men to take on more responsibility in the partnership including being more understanding of and involved in PMTCT of HIV (5).

In Jijjiga Town, of youth who underwent testing; only 78.1% received pre and post test counseling, 15.3 % only pretest , 1.2% received post-test counseling and 5,4% were not given any counseling(14). From those tested 90.9% were satisfied with the service provided. The reason for not satisfied with the VCT service were; unclarity of the counseling, lack of privacy, no warm reception, unavailability and no link to care and support, lack of confidentiality and expensiveness of fee. According to the providers report, VCT services in hospital and health center were utilized more by pregnant mothers. Being Female, older youth, educated at least to secondary school and being sexually active had statistical significant association with VCT utilization (14).

Research done in Lusaka Zambia, tried to explore the most acceptable format and venue for VCT(19). The study showed that pilot testing in antenatal clinics was well received by 84% of pregnant women requiring testing and 25% having positive HIV serology results. Women with less education, those seeking antenatal care in local clinics, and those seen before third trimester of pregnancy were shown to be associated with acceptance of VCT. It also identified that VCT is feasible in antenatal setting, implementation of same-day HIV voluntary counseling and testing in antenatal clinics is an effective strategy to prevent vertical transmission and should be expanded to include couples to leverage a decrease in heterosexual transmission as well (19).

## **VCT and PMTCT interventions**

In developed countries combination of antiretroviral drugs dramatically reduce the risk of MTCT of HIV. These regimens are expensive and complicated to administer, and as a result, access to these drugs is minimal in developing countries. However, more recent trials have shown encouraging results with less expensive short course regimens. Following those trials, many developing countries have set up pilot projects, which give HIV- positive women access to ARV to prevent MTCT of HIV during pregnancy, labor and delivery. Access to VCT is therefore a prerequisite for PMTCT (5).

Counseling and testing can benefit women who are or who want to become pregnant. Ideally, all women should be advised for and have accesses to VCT. Women receiving VCT in antenatal clinic setting should discuss their options (4).

The core PMTCT activities are: comprehensive MCH (antenatal, postnatal, and child health) services, VCT services, counseling and support about safe infant feeding practices, optimum obstetric care, short course ARV therapy for HIV infected women as well as their children and family planning counseling and services that are linked to VCT (4,5). PMTCT is most effective when undertaken not as an isolated activity, but rather as part of the continuum of HIV/AIDS interventions which ranges from primary prevention to care and support for people living with HIV/AIDS(4). PMTCT system should be strengthened and communities must be prepared for those programs (4, 5).

### 1.3 Statement of the problem

VCT guidelines of Ethiopia emphasize the importance of expanding the service to vulnerable and marginalized groups (4). However, the VCT coverage still does not reach the peripheral parts of the country and women are accessing the service much less than men (2,12, 20).

To date, few researches are available in the country regarding the status of willingness of pregnant women towards VCT. Since there is a desire to expand PMTCT down to the grass root level, it is important to assess the magnitude of willingness for VCT of pregnant women attending ANC. The factors which could hamper the willingness can be identified and appropriate measures could be taken. By doing so, pregnant women can access VCT and benefit from PMTCT package.

Therefore, this study aimed to assess willingness of pregnant women attending ANC towards VCT. In addition, the study examined the factors that could influence willingness of pregnant women for VCT utilization.

## 2-OBJECTIVES

### **General objective: -**

To assess the expressed willingness for voluntary HIV counseling and testing of pregnant-women who attend antenatal care service.

### **Specific objective: -**

- 1) To examine status of willingness towards voluntary HIV counseling and testing among pregnant women.
- 2) To identify factors for willingness towards voluntary HIV counseling and testing.
- 3) To describe the knowledge towards VCT among pregnant women.

## 3-METHODOLOGY

### **Study area**

The study areas were Wukro Town and Keleteawlelo Woreda, situated in the eastern zone of Tigray Regional State, Ethiopia. Wukro is 47 km north of Mekelle, the Capital of Tigray. The area of the study site is 987.83 square kilometers (21). As projected by CSA the total population as of June 2005 was, 107,862 with (60,330 females and 57,532 males. In 2005, there were 27,322 people living in Wukro Town and 90,540 were living in Keleteawlelo (21). The health service coverage in 2003/04 for the study area was 59 % and the antenatal coverage 68.4 %. A total of 1650 pregnant women visited antenatal care clinics in the same year. There were two VCT centers: One in Wukro Hospital and another in Wukro Health Center. There was no antiretroviral therapy for HIV/AIDS patients and no antiretroviral for PMTCT in the study area (23).

### **Study design**

The study was health institution based cross sectional survey. An interview-using questionnaire was administered to pregnant women who were antenatal care attendees. Focus group discussion (FGD) was conducted at the field with two groups of pregnant women and two groups of TBAs' (representing the urban and rural community) using FGD guide. Key informant interview was administered for 10 health workers using key-informant interview guide and open-ended questionnaire.

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## **Study population**

The source populations for the study area were pregnant women who visited government health institutions for antenatal care. The number of antenatal care attendees over the last fiscal year were 1650 (23).

### **Inclusion criteria**

-Pregnant women attending antenatal care in Government health institutions (1 District hospital, 2 health centers and three health stations).

### **Exclusion criteria**

- Those who refuse to participate
- Inability to communicate
- Those that were not registered as antenatal follow-up clients.

### **Source population for the qualitative data were:**

- ∞ Pregnant women who were resourceful and accessible for FGD
- ∞ TBAs who were good informants for FGD.
- ∞ Health professionals working in MCH service, nurse counselors and program managers from Woreda health offices for key-informant interview.

## **Sample size determination**

### **Sample size for Quantitative data**

Sample size was calculated using software epi-info stat calc. Sample size was worked out using the 70% proportion (70 % of respondent for BSS 2002 in Tigray knew that an HIV infected mothers can transmit the virus to her baby through breast feeding (24). The absolute precision

was 4% and with 95% confidence interval. The calculated sample size was 386. Non-response rate in this study was estimated to be 10 % i.e. 38, and hence an overall sample size of 424 pregnant women was taken.

### **Sample size for qualitative data**

Sample for FGD and key-informant interview were conventional type. Two groups of FGD participants were selected. Pregnant women engaged in the two FGD comprised of 17 participants, representing urban and rural community of 8 and 9 respectively. A total of 16 selected TBAs were enrolled in the FGD, 7 from urban and 9 from rural residents.

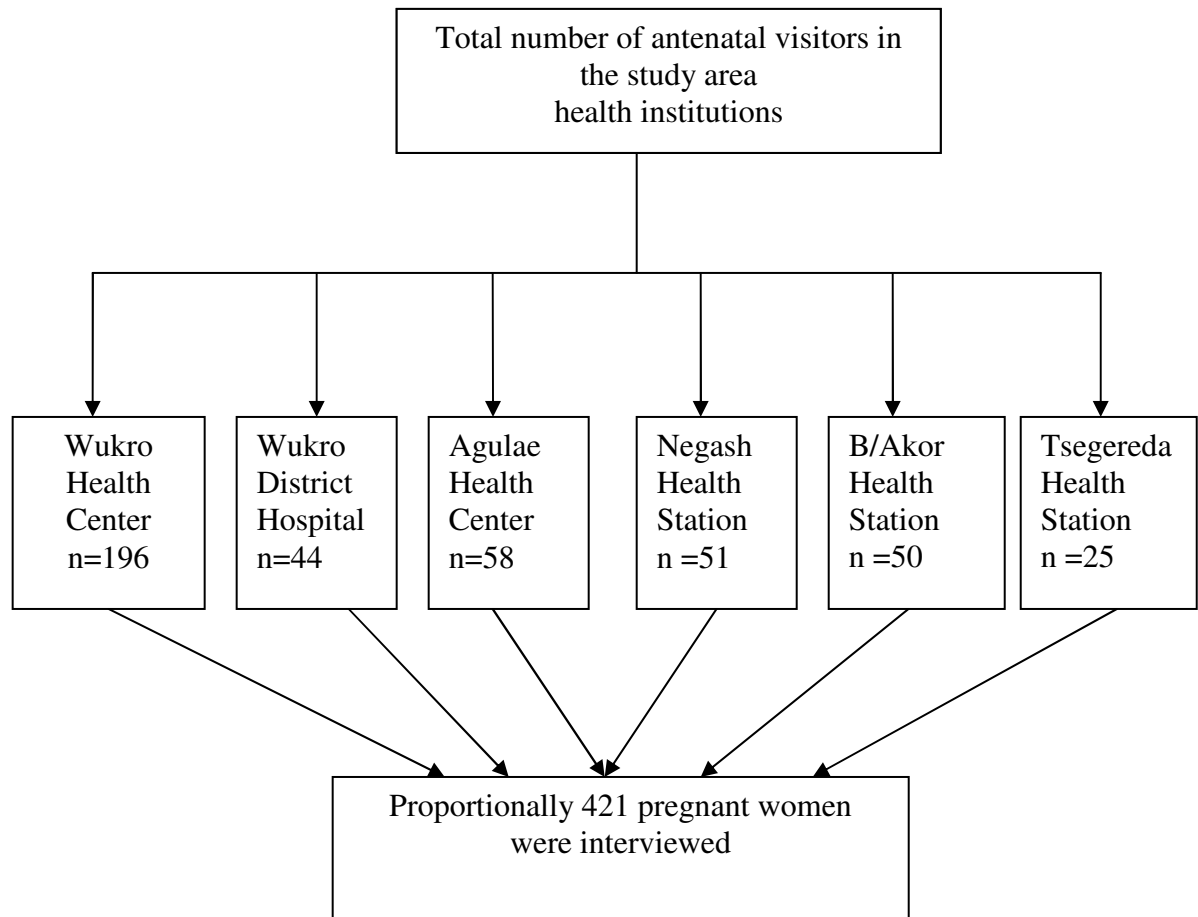
Key-informant interview was employed with, six health workers assigned in MCH activities, two counselors from Wukro Health Center & Wukro District Hospital, Wukro Wereda Disease Prevention and Control Team Leader and the HIV/AIDS Expert of Keleteawlaelo Wereda Health Office.

### **Sampling procedure for Quantitative data**

Selection of health institutions was based on the number of clients they serve .We assumed the usual trend of antenatal care client flow to health institutions does not fluctuate for every month. Based on the number of customers who visited each health institution of the last year, proportional distribution of samples was carried out to attain the required sample size. Finally, the determined sample for each health institution was achieved through exit interview for continued period until the optimum level was reached. Every antenatal care attendee was approached to participate and those who showed willingness were interviewed. The time for data collection extended from February 3 to March 16, 2005.

**FIG-I**

**Sampling frame for:** - assessment of willingness to VCT of pregnant women attending antenatal care in Wukro and Keleteawlaelo, Tigray Regional State, north Ethiopia, April 2006.



## **Data collection**

### **Quantitative data collection**

Data which were collected in this study: willingness to accept VCT; socio demographic variables; perceived Risk; HIV& MTCT related knowledge; VCT and related knowledge and practice; pattern of result communication; expectations of pregnant women after they receive test results; stigma, care and support related questions

Data collectors and supervisors were trained for two days in Wukro Health Center using a training manual. There were 10 data collectors and two supervisors. Data collectors were 10<sup>th</sup> grade complete female, who were conversant with the local language. Two nurse supervisors were assigned to supervise the data collection process and control the quality at the spot. The interview was administered in the health institutions after pregnant women completed their ANC (exit interview). Data collection was conducted from February to April 2006february

### **Qualitative data collection**

The principal type of data collected regarding qualitative data were, quality of available service, readiness towards expansion of services, view of community and pregnant women on VCT/MTCT/PMTCT, influential people and their role in VCT, pattern of decision making, confidentiality of services and the status of women.

A skilled nurse was moderating the FGD for two of the pregnant women's group and the TBAs' group. Each FGD was recorded using tape recorder. The FGD groups were from the urban and rural community.

Key-informant interviews were conducted by the Principal Investigator. Health professionals were interviewed in their respective health institutions, using open-ended questions. The interview was recorded using notebook.

### **Data quality control**

The questionnaire was adopted from BSS Questionnaire with slight amendment to attain the study objective. Translation of the English version to Tigrigna and back translation to English was done prior the use of the questionnaire. Using a training manual, a two-day training of data collectors and supervisors was held at Wukro. The training included the theoretical background of the study and exercising the questionnaire to minimize errors that could arise during data collection.

Questionnaires were pre-tested to minimize ambiguity of words and applicability to the local context. The pre-testing was held at Frewoyini Health Center in the adjacent woreda to the study area with similar socioeconomic characteristics. The questionnaire was pre-tested in 10 individuals and each data collector had an opportunity to be acquainted with the interview technique.

Data editing was conducted on a daily basis at the field for accuracy, consistency and completeness by the supervisor and Principal Investigator. Ten percent of data was reentered to check for data entry errors. Same sex interview and to minimize social desirability bias non-health worker data collectors were employed. Data were also cleaned during analysis stage by using SPSS 11 statistical package.

## **Variables**

### **Dependent Variable**

Expressed willingness to VCT

### **Independent Variables**

- Socio-demographic variables

Wereda, residence, age, ethnicity, religion, education, occupation, family size, monthly household income, marital status, number of pregnancies, number of births, gestational age and number of antenatal care visits,

- Knowledge of HIV, VCT & PMTCT

Awareness in HIV, VCT and PMTCT, mode of HIV transmission, common misconceptions and discussion about PMTCT.

- Risk perception of HIV

Perceived risk, degree of risk and reason for being at risk

- Attitude and practice towards VCT

Benefit of VCT, had VCT, when was VCT taken, reason for testing,

Satisfaction status, preference of counselor, preferred type of counseling, preference of place for counseling and preference of counselor.

- Discussion of HIV positive result to others

- Male partner's reaction to HIV positive result

- Reason for refusal of VCT

- Stigma and discrimination related variables

## Operational Definitions

Voluntary	The decision to have a test must be made by the client with out coercion.
Confidential	Information shared during counseling must not be shared with others. The HIV test result must only be reported to the client unless the client States the desire to share the result with family members, partner or close friend
Anonymous testing	In this type of test, the client's name or any other identifying information is not sent along with the blood sample, the client is identified through a unique identification number.
Privacy	The physical environment that allow private discussion between client and counselor. The service provider is obliged to keep clients personal details private including test results.
Integrated VCT service	Is a type of VCT service in a given institution incorporated in to all aspects of on going MCH interventions.
TBAs'	Traditional birth attendants are those known by serving women in their locality during child birth non paid with or without training.
Antenatal care attendees	Pregnant women who made one or more visit to health institution for early detection and control of any health problem related to pregnancy , labour and puerperium
Safe Sex	Sexual act using condom; having monogamous relationship with HIV negative partner who has no other sexual partner or having non-penetrative sex.
Willingness to VCT	When a women expresses her verbal agreement to use VCT service if made available.
Informed consent	Agreement which is confirmed by verbal means after being informed by provider

## **Data analysis**

Quantitative data were analyzed using software statistical package epi-info version 6 for data entry and SPSS version 11 for data analysis. To assess quality of data entry the Principal Investigator entered ten percent of data twice. Data were cleaned during analysis. Data were summarized or transformed into a concise form for subsequent analysis. The data analysis of qualitative variables was performed for descriptive information like frequency, percentage, measures of central tendency and measures of dispersion when it was appropriate. The analytic components included odds ratio for categorical variables, 95% confidence intervals, and adjusted odds ratio were computed when they were appropriate.

To analyze the qualitative data, each set of notes were read and re-read until the investigator became intimately familiar with the contents. The recorded tape was carefully reviewed for patterns, possible relationship between themes, contradictory response, or gaps in understanding. Content analysis was performed by categorizing concepts or themes from groups of lower data points and then assessed for similarities and differences. Summary was written in a concise form to make it understandable.

## Ethical consideration

Ethical clearance was obtained from the Department of Community Health and Faculty of Medicine, Addis Ababa University. Letter of agreement to conduct research was obtained from the woreda administration. Individual informed consent was granted by individual respondent at the field.

All documents were kept private and confidential. Respondents were not identified by name in the questionnaire and were allowed to skip a question, a section of the questionnaire or refuse to participate totally, if they were not comfortable at any juncture. Two hundred thirty two pregnant women who were able to read were provided with leaflet containing message about PMTCT at the end of interview. Information about the available services in the woreda was offered in detail for individual respondents if they inquired to know about it. All participants were informed about the purpose of the study. Brief health education for few minutes was delivered at the end of the interview.

## Communication of findings

Result of the study will be submitted to the Department of Community Health, Addis Ababa University, Tigray HIV/AIDS Prevention and Control Office, Tigray Health Bureau, Wukro Health Office and other organizations when deemed necessary. The findings of this study will be presented in the annual scientific conference of Ethiopian Public Health Association, national and Regional conferences and it will be published in reputable journals.

## 4- Results

### 4.1 Quantitative

#### 4-1-1 Socio-demographic characteristics of pregnant women .

In this study, 99.3% of the required sample (421) pregnant women attending antenatal care were included 3 (.07%) study participants refuse to participate. The socio-demographic variables examined were area of residence, age, ethnicity, religion, educational status, occupation, monthly income, family-size, and marital status. Very few questions were also included regarding maternal conditions, which can help understand the status of women such as, gravidity, gestational age and number of antenatal care visit.

Majority of the respondents were from Keleteawlaelo 230(54.6%), while the remaining were from Wukro Town 191 (45.4%) (Table-1). Urban respondents outnumbered rural respondents, 57% and 43% respectively. Almost all respondents, 408 (96.9%) belonged to the Tigray ethnic group. Pertaining to the educational status, 183(43.5%) were Illiterate, 13(3.1%) could read and write, grades 1-4 accounted for 16 (14.3%), grades 5-8 were 87(20.7%), grades 9-12 were 64(15.2%) and the remaining few respondents 14(3.3%) were at the level of higher education.

Majority of respondents 297 (70.5 %) were housewives. Nearly all respondents 391(92.9%) were married, 22( 5.2 % ) were single, 7 divorced (1.7 %) and one widowed (0.2 %). Majority of respondents were Orthodox Christians 394(93.5%), 21 (5%) were Muslim, 4(1. %) were Catholic and the remaining 2 (0.5%) identified themselves as protestant (Table-1).

Antenatal care service is delivered in all health institutions in the study area. Little less than half of the respondents were from Wukro Health Center 196(46.6%) whereas the rest were from, Wukro Hospital 43(10.2%), Agulae Health Center 57(13.5%), Batiakor Health Station 50 (11.9%),Negash Health Station 50(11.9 %) and Tsergereda Health Station 25(5.9%) .The age of respondents ranged from 16 - 46 years and the mean age was  $24.78 \pm 5.6$  SD years standard deviation . Majority of the respondent 341(81 %) were between the age of 16 and 29 years age the remaining 80 (19%) were above thirty years. Median household family size of the study participants was 2.66, standard deviation 1.86 (see Table-1). Median household monthly income of study subjects was 200.00 Et. birr.

The earliest time for ANC visit for follow up was three months of gestation and continued follow up until nine months of gestation. The mean gestational age was 6.86 months with standard deviation of 1.5 months. Primigravida women contributed 26.1 %, multigravida women were 62.2 % and grand multigravidarum women accounted for 11.7% of respondents. Pregnant women who visited health institutions for the first time were 165(39.2% ), second to third visit 146(37.7%) and above three visits 110(26.6%).For most respondents occupation of male partners was farming 146(34.7%) followed by daily labor 85(20.2%),solider 72(17.1%), Government and private employees 72(17.1%), other professions account for the remaining 55(13%) .

Table -1 Socio-demographic characteristics of the study participants in Wukro and Keleteawlaelo

Woredas, 2006.

Variable and response	frequency	%	
Woreda(n=421)			
Wukro town	191	45.4	
Kleteawlaelo	230	54.6	
Residence(n=421)			
Urban	240	57	
Rural	181	43	
Ethnicity (n =421)			
Tigray	408	96.9	
Amhara	8	1.9	
Erob	3	0.7	
others	2	0.4	
Educational status (n=421)			
Illiterates,	183	43.5	
Read& write	13	3.1	
Grade 1-4	60	14.3	
Grade 5 - 8	87	20.7	
Grade 9-12	64	15.2	
Higher education	14	3.3	
Occupation of pregnant women(n=421)			
Housewife	297	70.5	
Unemployed	66	15.7	
Daily laborers	41	9.7	
Gov /privet employee	17	4.1	
Marital status (n=421)			
Married	391	92.9	
Single	22	5.2	
Divorced	7	1.7	
widowed	1	0.2	
Religion (n=421)			
Orthodox	394	93.6	
Muslim	21	4.9	
Catholic	4	1.0	
Protestant	2	0.5	
Health institution (n=421)			
Wukro health center	196	46.5	
Wukro district hospital	43	10.2	
Agulae health center	57	13.5	
Negash health station	50	11.9	
Bati-akor health station	50	11.9	
Tsegereda health station	25	5.9	

Table -1-Continued

Variable and response	frequency	%	
Age in years ( n=421)			mean=24.78 ±5.6 SD years median=24
15-24	227	53.9	
25-34	154	36.6	
35-46	40	9.5	
Family size (n=421)			mean=2.66 SD=0.81person
One to three	221	52.5	
4-6	116	27.6	
7-11	84	19.9	
House hold income(n=421)			mean=308.46± 288.2 Eth .birr SD.
No income Stated	18	4.3	
1-200 birr	195	46.3	
201-400 birr	104	24.7	
401-700 birr	65	15.4	
701+ birr	39	9.3	
Gestational age in months (n=421)			mean =6.9 ± 1.5 months
3 months	11	2.6	
4-6 months	141	33.5	
7-9 months	269	63.9	
Number of pregnancy(n=421)			
1	110	26.1	
2-5	262	62.2	
6-11	49	11.7	
Number of ANC visits(n=421)			
1 <sup>st</sup> visit	165	39.2	
2 <sup>nd</sup> to 3 <sup>rd</sup> visits	146	34.7	
4 <sup>th</sup> and more visits	110	26.1	
Occupation of male partners(n=421)			
Farmers	146	34.7	
Daily laborer	85	20.1	
Solider	72	17.1	
Gov/private employee	72	17.1	
Others	55	13.0	

#### **4-1-2 Knowledge towards HIV/AIDS of pregnant women attending ANC**

Knowledge of respondents about HIV/AIDS in this study was 412 (98%)(Table-2). A considerable number of the participants, who knew about HIV/AIDS 380 (92%), mentioned at least one means of prevention of HIV. On the other hand 29 (7.6%) of those who were aware of HIV said it can be cured. Multiple sexual partner-ship was recognized by 99.2% of the respondents as mode of HIV transmission. Forty-seven (12.4%) of the respondents said that HIV can be transmitted if some body live with an infected person. The other most frequently mentioned misconception was transmission of HIV through insect bite, which accounted for 147(38.7%)

Table-2 Knowledge of pregnant women about HIV/AIDS in Wukro and Keleteawlaelo Woredas, of Tigray Regional State north Ethiopia, 2006.

Variable and response	frequency	%	
Know HIV/AIDS (n=421)			
Yes	412	97.9	
No	9	2.1	
Know mode of transmission (n=412)			
Yes	380	92.2	
No	32	7.8	
Can HIV/AIDS be cured (n=380)			
Yes	29	7.6	
No	340	89.5	
I don't know	11	2.9	
HIV can be transmitted through multiple sexual partnership (n=380)			
Yes	377	99.2	
No	3	0.8	
Living with HIV infected person can transmit HIV(n=380)			
Yes	47	12.4	
no	308	80.8	
I Don't Know	24	6.3	
No response	2	0.5	
Insect bite can transmit HIV(n=380)			
Yes	147	38.7	
No	178	47	
I don't know	50	13.2	
No response	5	1.1	

#### **4-1-3- Knowledge of pregnant women towards mother to child transmission of HIV**

Pregnant women who knew HIV can be transmitted from mother to child were 335(88.2%) (Table-3). The time during which HIV could transmit from mother to child was inquired. The majority of the respondents 309(92%) were aware of the transmission of HIV during lactation. Almost equal number agreed on its transmission during labor and delivery 305(91%). A considerable number of respondents said that HIV can be transmitted during pregnancy 290(87%) . Knowledge of PMTCT was considerably high 218(65%), but only 185(55.3%) could mention the means used to prevent HIV transmission from mother to child. Among the prevention methods, avoiding breastfeeding was the most frequent response 158(86%). A very low number of respondents 46(25%) mentioned anti-retroviral drugs can reduce transmission of HIV from mother to child.

When asked about with whom they had discussed concerning PMTCT during their recent pregnancy, most of respondents said they had discussion with health professionals 135(73%), with their partners 134(73%) and 73(39.5%) discussed with mothers (see Table-3).

Table-3 Knowledge of pregnant women about mother to child transmission of HIV in Wukro and Keleteawlaelo Woredas of Tigray Region north Ethiopia, 2006.

Variable and response	frequency	%	
Can HIV infected women transmit HIV to her child (n=380)			
Yes			
No	335	88.2	
I Don't Know	24	6.3	
	21	5.5	
Can HIV infected women transmit HIV to her child during pregnancy (n=335)			
Yes	290	86.5	
No	30	9	
I Don't Know	14	4.2	
No response	1	.3	
Can HIV infected women transmit HIV to her child during delivery (n =335)			
Yes	305	91	
No	10	3	
I Don't Know	18	5.4	
No response	2	.6	
Can HIV infected women transmit HIV to her child during lactation (n =335)			
Yes	309	92.2	
No	14	4.2	
I Don't Know	12	3.6	
Can we minimize HIV transmission from mother to child (n=335)			
Yes	218	65.1	
No	93	27.8	
No response	24	7.1	
Do you Know any means that can reduce MTCT (n=218)			
Yes			
No	185	84.9	
No response	17	7.8	
	16	7.3	
Means for PMTCT for HIV infected women ( n=185)			Multiple response
Avoid breast feeding	158	85.4	
Administration of ARV drugs	46	25	
Operative delivery	8	4.3	
Discussion about MTCT (n=185)			Multiple response
With Health Workers	135	73	
With male partners	134	42.4	
With Mother	73	39.5	

#### 4-1-4 Risk perception of pregnant women attending ANC

The level of perceived vulnerability towards HIV /AIDS was 164(39%) of (Table-4).The degree of risk according to the respondents opinion was, 81(49.4%) moderate, 50(30.5%) low, 12(7.3%) high and 21(12.8%) did not know the level of their risk. The major reason 51(44.7%) for being at high risk was that male partners are not loyal to their wives/partners

Table -4 Risk perception towards HIV and reason for being at high risk, of pregnant women attending ANC in Wukro and Keleteawlaelo Woredas of Tigray Regional State, 2006.

Variable and response	frequency	%	
Do you feel at risk of HIV infection N=421			
Yes	164	38.9	
No	257	61.1	
Degree of risk of HIV(N=164)			
Low	50	30.5	
Moderate	81	49.4	
High	12	7.3	
I don't know	21	12.8	
Reason for being at risk(N=114)			Multiple answers
Had multiple sexual partnership	6	5.3	
Had un protected sex with non regular partner	30	26.3	
My partner is not faithful	51	44.7	
Had injecting with contaminated syringe	4	3.5	

#### 4-1-5 Knowledge & utilization of VCT of pregnant women.

Majority of respondents were informed about VCT 338(80.3%) (Table-5).The most frequent source of information were health institutions 245(72.5%) followed by radio (47.3%), public meeting (30.5%) and television (26.6%). A considerable number of respondents, 326(96.5%) claimed that VCT is important to pregnant women .Explanation Stated for benefit of VCT to expectatant mothers by study participants were: it can help plan for the future 173(51.1%), almost equal number of respondents 168(49.6 %) said that it helps prevent MTCT.

From the total study respondents, 81(19.2%) pregnant women were tested for HIV some day in their life. The test were done: within the past 6 months 10(12%), 7-11 months in 20(25%),more than one year 51(63%) . Purpose of VCT was, 60.4 % for marriage, 24.7 % to know their status ,12.3 % said to safeguard their new born and other reasons constitute 8.6%. Almost all tested women were volunteered to be tested 80(99.9%) but one women said she did not volunteer. The reason she explained was some body forced her to be tested while she was looking for a job abroad. Majority of the tested women were comfortable (94%) with the privacy of testing and counseling rooms but five pregnant women were doubtful on the privacy of counseling room .Almost all tested 98.8% study participants in the study area received test result.

Table -5 Knowledge and previous history of VCT of pregnant women attending ANC in Wukro and Keleteawlaelo Woredas Tigray Regional State , north Ethiopia ,2006.

Variable and response	frequency	%	
Have you ever heard about VCT (n=421)			
Yes	338	80.3	
no	83	19.7	
Source of information for VCT (n=338)			Multiple answers
Health institution	245	72.5	
Radio	160	47	
Public gathering(meeting)	103	30.5	
Television	90	26.6	
School	74	21.9	
Neighbors	45	13.3	
Friends	41	12.1	
Printed media	33	9.8	
VCT important to pregnant women (n=338)			
Yes	326	96.5	
No	12	3.5	
Benefit of VCT to pregnant women (n=338)			Multiple answers
Help to plan for future	173	51.1	
To be advantaged from PMTCT services	168	49.6	
Just to Know status	128	37	
To protect partner	62	18.2	
Ever had VCT (n=339)			
Yes	81	23.9	
No	258	76.1	
Time VCT was taken for the last time (n=81)			
< 6 months	10	12.2	
6 to 11 months	20	24.7	
1 to 2 years	22	27.2	
Above 2 years	20	24.7	
Do not remember	9	11.1	
Reason for utilizing VCT (n=81)			Multiple answers
Marriage	49	60.4	
Protect my child	10	12.3	
Know my status	20	24.7	
Other reasons	7	8.6	
Privacy of the counseling room (n=78)			
Yes	73	93.6	
Not at all	5	6.4	
Test result collected (n=80)			
Yes	79	98.8	
No	1	1.2	

#### **4-1-6 Attitude towards VCT of pregnant women attending ANC.**

When asked about their intention to get counseled and tested for HIV about three fourth of pregnant women 312(74.1%) were willing to have VCT, whereas 109(25.9%) rejected the use of VCT during pregnancy even if it is made available free of charge(Table-6). The benefit expected from VCT by pregnant women who approve it was to: plan the future 84.3%, bring about a child free of HIV 32.4%, to take fundamental action to prevent MTCT, 22.8% said to take basic action if result turned to be positive for HIV and the remaining 11.5% to protect their partner . The most selected testing method was confidential type 248(79.5%) Same day result delivery was the most accepted time for pregnant women .Female counselors were accepted by 43% of respondents and 42% did not discriminate against sex of counselor. A little over half, 52% of respondents liked their counselor's age to be greater than their age, 36.5% did not mind about the age of counselor and the remaining 11.9% prefer same age or less than their age.

Majority of the respondents, 267(86%) approve to pay for VCT. Of those approved paying, 118(44.2%) were willing to pay less than five Birr, 73(27.3 %) suggested 5-10 birr, 21(7.9%) would pay 11-25 Birr and the remaining 55(20.6%) were willing to pay more than twenty five Birr (see Table-6). The preferred VCT sites for pregnant women to be tested in the future were: 41.7% Health Center, 33.7% District Hospital, 17% Health Post, 3.5% Outreach site and 2.5% did not make a decision.

Table-6 Attitude towards VCT of pregnant women attending ANC in Wukro and Keleteawlaelo Woredas Tigray Regional State , north Ethiopia ,2006.

Variable and response	frequency	%	Remark
Are you willing to take VCT during pregnancy (n=421)			
Yes	312	74.1	
No	109	25.9	
Reason for willingness to VCT (n=312)			Multiple answer permitted
Plan for future	263	84.3	
To have HIV free baby	101	32.4	
To take necessary action	71	22.8	
Protect my partner	36	11.5	
Preferred testing method (n=312)			
Confidential	248	79.5	
Anonymous	26	8.3	
Like that of routine blood test	35	11.2	
others	3	1	
Preferred time for delivery of test result (n=312)			
Same day	213	68.3	
Second day	25	8.0	
3 <sup>rd</sup> to 7 <sup>th</sup> day	33	10.6	
After one week	41	13.1	
Preferred sex of counselor (n=312)			
Male	48	15.4	
Female	133	42.6	
Both can be	131	42	
Preferred age of counselor (n=312)			
Greater than age of the client	161	51.6	
Same or less than the clients age	37	11.9	
No age discrimination	114	36.5	
Willing to Pay for VCT (n=312)			
Yes	267	85.6	
No	45	14.4	
Amount of money proposed to pay (n=267)			
<5 Et .Birr	118	44.2	
5 -10 Et .Birr	73	27.3	
11-25 Et. Birr	21	7.9	
> 25 Et .Birr	55	20.6	
Preferred site for VCT (n=312)			
Health Center	130	41.7	
District Hospital	105	33.7	
Health Post	53	17	
Outreach Site	11	3.5	
Private clinic	5	1.6	
No particular site	8	2.5	

#### 4-1-7 View of pregnant women regarding HIV result communication , decision making , stigma and discrimination .

When asked about communication of HIV positive result , 284(91% ) pregnant women affirm to communicate result with their partners,265( 85 % ) with health workers and 265 (65%) with their mother (see Table-7). On the reaction of men towards HIV positive result, 175(56%) said that their partners will accept them and will try to cope with the problem , a considerable number of respondents 115(37%) replied psychological harassment is likely. Quite a high number of respondents disagree that financial support from partner will be discontinued because of declaring HIV positive test result .

According to 332(79%) of the respondents health workers play a major role for a pregnant women to take part in VCT,. Partners and mothers can also influence pregnant women to be tested according to 320(76%) respondents and 215(51%) of the respondents respectively (Table-7).

Pregnant women refrain from VCT as a result of different reasons ,the most recognized factors were being feared 250 (59.4%) in case the result turns positive, followed by stigma and discrimination 185(44%) and unavailability of the service 152(36%) of respondents. When respondents were asked for possible reaction of the community towards HIV positive pregnant women they gave different answers. Neglect by family was likely for a considerable number of respondents 137(32.5%). Rejection of HIV positive women by friends was a factor for 226(53.7%) of respondents. Emotional support from friends is unlikely or is doubtful for 304 (72.2%) of participants. Majority of respondents, 298(70.8%) did not agree that pregnant women

would get financial support from the community if they are positive for HIV. Only 204 (48.5%) of the women said that religious leaders will provide spiritual support to HIV positive pregnant women. Thirteen (3%) of respondents said they will take revenge if their test result turned to be HIV positive. Disclosure of HIV positive result to the public was accepted by 169(40.1%) .

**Table-7** View of pregnant women towards pattern of HIV result communication , decision making & Stigma and discrimination in Wukro and Keleteawlaelo woredas Tigray Regional State, north Ethiopia ,2006.

Variable and response	frequency	%	
Ready to communicate test result(HIV +) (n=312)			Multiple answer allowed
With Partner	284	91.0	
With Health worker	265	84.9	
With Mother	202	64.7	
With Sister	179	57.4	
With Father	177	56.7	
With Brother	168	53.8	
Possible reaction of male partner for HIV+ result (n=312)			>>
Insult or bad remark	79	25.3	
Psychological harassment	115	36.9	
Physical violence	64	20.5	
Breaking marriage	119	38.1	
Accept the problem like his own	175	56.1	
Stop financial support	72	23	
Who play a major role for pregnant women to accept VCT(n=421)			>>
Partner	320	76	
Health worker	332	78.9	
Mother	215	51.1	
Sister	204	48.5	
Father	203	48.2	
Brother	184	43.7	
Community leader	92	21.9	
Neighbor	69	16.4	
Reason for not accepting VCT by pregnant women (n=421)			>>
Unavailability of service	152	36.1	
Fear of stressful condition for HIV+ result	250	59.4	
Fear of stigma and discrimination	185	43.9	
Fear of rejection by husband	125	29.7	
Not trusting confidentiality of the test	72	17.1	
Lack of money	81	29.2	
Other reasons	46	10.9	
Expected reactions for HIV positive pregnant women (n=421)			>>
Mistreated by family	137	32.5	
Rejection by friends	226	53.7	
Emotional support from friends	117	27.8	
Cease sexual intercourse	309	73.4	
Spiritual support from religious leaders	204	48.5	
Financial support from community	123	29.2	
Take revenge	13	3.1	
Disclose result to the public	169	40.1	

#### 4-1-8 Association between the dependent variable, expressed willingness to VCT and explanatory variables.

In order to measure the association between the dependent variable expressed in terms of willingness to VCT and a number of explanatory variables, crude OR and adjusted OR with 95% CI were employed (Table-8). Bivariate analysis was done for: residence, Woreda, age, health institution, income, religion, occupation, education, family size, marital status, gestational age, ANC visits, parity, gravidity, knowledge of HIV, knowledge of VCT, knowledge of PMTCT, cure status of HIV, transmission of HIV by insect bite, risk perception, having VCT previously, knowledge of the benefit of VCT to pregnant women, discussion with male partner, role of partner in accepting VCT, stress as a reason for declining VCT, neglect by family, stigmatization by family members and disclosure of test result. All variables found to have association were included for logistic regression analysis to control for confounders.

After controlling for confounders, number of pregnancy being two to five (OR=7.12, 95%CI 1.05, 48.30), women who experience open discussion with partner (OR=7.01, 95%CI 1.74, 28.15) and women who believe partners play major role towards VCT (OR=3.84 95%CI 1.12,13.23) were found to be significantly and independently associated with willingness to VCT .

Table 8: logistic regression result of the dependent variable expressed willingness to VCT and explanatory variables of pregnant women attending ANC at Wukro and Klete-awlaelo, Tigray Regional State, north Ethiopia ,2006.

Variable	Willingness for VCT		OR (95%CI) Crude	OR (95%CI) Adjusted
	Yes(n)	No(n)		
Woreda				
Wukro	160	31	2.65 (1.65,4.24)	3.76(.48,29.62)
Keleteawlaelo	152	78	1.00	1.00
Residence				
Urban	198	42	2.77(1.768 ,4.32)	0.10 (.01,1.09)
Rural	114	67	1.00	1.00
Gravidity				
Primi gravid	97	13	3.618 (1.58,8.31)	4.79(.534,42.66)
Multi gravid*	182	80	1.10 (0.57,2.12)	7.12(1.05,48.30 ) *
Grand multi gravid	33	16	1.00	1.00
Health institution				
Health centers	210	43	4.2 (2.614, 6.832)	7.75(0.47,128.5)
District hospital	35	8	3.79( 1.63,8.81)	5771 (0 1, 2 .32)
Health stations	67	58	1.00	1.00
Education				
Illiterate	114	69	0.14 (0.06, 0.37)	1.72(0.24,12.43)
Read & write to grade 8 <sup>th</sup>	126	34	.031(0.12,0.77)	1.97 (0.39,9.94)
Secondary to higher education	72	6	1.00	1.00
Knowledge of HIV/AIDS				
Yes	309	103	6 (1.47,24.4)	nullified
No	3	6	1.00	
Knowledge of mother to child transmission				
Yes	269	66	2.45(1.025 ,5.833)	
No	15	9	1.00	nullified
Risk of HIV				
Yes	147	17	0.21 (0.12,0.36)	0.84 (.24, 2.93)
No	165	92	1.00	1.00
Know VCT				
Yes	273	65	4.7 (2.85,7.88)	
No	39	44	1.00	nullified
Discussion freely with partner				
Yes	125	9	6.94(2.84,16.94)	7.01(1.74,28.15) *
No	34	17	1.00	1.00
Had VCT previously				
Yes	79	2	13.03(3.11,54.5)	8.24 (.78, 87.54)
No	194	64	1.00	1.00
Believe partner has a great role in VCT				
Yes	246	74	0.56(0.34, 0.92)	3.84 (1.12,13.23) *
No	66	35	1.00	1.00
Stress is the reason to decline VCT				
Yes	202	48	2.33(1.48,3.62)	0.37 (.05, 2.48)
No	110	35	1.00	1.00
Suspect maltreatment by family if HIV positive				
Yes	87	50	0.46(0.29 ,0 .716)	0.60 (.12, 2.95)
No	225	59	1.00	1.00
Stigma is the reason to avoid VCT				
Yes	150	35	1.96(1.24, 3.1)	0.39(.08, 1.84)
No	162	74	1.00	1.00
Disclose test result				
Yes	140	29	2.24 (1.39,3.63)	0.36(.39,6.49)
no	80	175	1.00	1.00

\* Significantly associated with willingness to VCT

## 4-2 Qualitative

### 4-2-1 Summary results of focus group discussion with traditional birth attendants and pregnant women

Almost all FGD participant TBAs and pregnant women stated that HIV has created a burden to the community in terms of illness, death, economic problems, orphanage and increased suffering of old people due to death of the young. They have also explained HIV has hampered development and aggravated poverty. All participants of the FGD said that, VCT is a voluntary process to know one's HIV status. All participants explained the importance of VCT to know the status before and after marriage. One TBA from the town said "VCT helps to manage good life" and another one from the town FGD group added, "VCT helps newly married couples to be free from HIV and to remain faithful". Two participant TBAs from the town said "VCT should be done for two occasions before marriage and at interval of three months".

The ideal period for VCT that all FGD participants agreed was before marriage. Two TBAs from the rural group and five TBAs from the town said "VCT should be done during pregnancy in order to have HIV free baby". Only one woman from the town FGD members of TBAs said that she had convinced one of her Family planning client to get tested before remarriage after divorce.

Almost all participants said that the best places to have VCT are government health institutions where they go for antenatal care visit. Female matured enough and considerate counselors were the most favored according to the FGD participants. However, very few participants (two from town and two from the rural side TBAs) said that they did not mind about the sex and age rather

they are concerned about the competence of the professional and confidentiality of the testing process.

All FGD participants except one pregnant woman were aware of mother-to-child transmission of HIV and the major sources of information were health institutions and radio. However, there was a misconception about the rate of transmission. Four from the town (2 TBAs and 2 pregnant women) and eight study participants (3 TBAs and 5 pregnant women) from the rural sites said that there is no chance of being free from HIV for a baby born from an infected mother. One woman said, “A baby sharing every thing from his/her mother’s womb, there is no way to be free from HIV”. All participants said that HIV could be transmitted from mother-to-child through breastfeeding. Considerable number of participants (14 from the town and 13 from the rural) said that HIV can be transmitted from mother to child during pregnancy and during child birth.

As far as prevention is concerned all participants from the four groups said that avoiding breastfeeding can prevent HIV transmission to the baby. Three FGD participants from the rural group and ten from the town stated that some sort of drug (to mean ART) can prevent HIV transmission to the baby. Very few FGD participants (one from the rural and three from town) stated that minimizing friction during childbirth can minimize HIV transmission. Only two from the town and one from the rural group knew that operative delivery can minimize HIV transmission to the newborn. Provision of vitamins and good nutrition was proposed to have a role in preventing HIV transmission by one TBA from the town. Majority of the FGD participants pregnant women from the town and all from the rural site said that they have or would never discuss with any member of the family about VCT and PMTCT of HIV during their pregnancy.

One participant from the countryside said “HIV/AIDS and blood testing is the most feared & sensitive issue to talk about”.

All FGD participant TBAs showed interest to serve their respective community in terms of mobilizing and counseling of pregnant women to utilize HIV counseling and testing services. According to the FGD participants’ view, pregnant women are not tested for HIV due to unavailability of the service, distance from their vicinity, not integrated with MCH service. Fear of bad outcome, stigma and discrimination were raised as well by the rural group. The urban group of participants pointed out that poor understanding of the benefit of VCT, stigma and discrimination were the reasons for declining from having VCT.

Majority of FGD participants expected negative reaction from male partners if they knew the positive HIV status of pregnant women. Majority said that men could take the following action against their partner: beat, disgrace, reject, divorce, insult and interrupt financial support. Very few FGD participants said that male partners might be depressed in the first occasion and then try to cope with the problem to reassure their female partners.

Community response to HIV positive pregnant women varies between the rural and urban FGD participants. The rural community is more likely to stigmatize and discriminate due to inadequate knowledge and misconception of HIV transmission. One pregnant women said “Except my relative no one will sit beside me if my test result is positive for HIV”. The urban group said there is still stigma and discrimination but its intensity is relatively improved these days.

#### **4-2-2 Summary of Key-informant interview for Health workers**

To assess the situation of VCT, the institutional capacity and demand of health workers in the study area, 11 health professionals were interviewed using open ended questionnaire. Informants said that Wukro Health Center and Wukro District Hospital are engaged in provision of VCT service to the woreda population and other adjacent districts. Referral for ART and to care and support providing institutions is part of the VCT process. VCT is integrated with STI and TB programs at the Stated institutions. There are five counselors assigned to run the service. None of the health professionals in the study area had an opportunity to be trained on ART, PMTCT of HIV and related topics.

The number of VCT clients was increasing from time to time in the two VCT sites. Most clients were youth group, military and people for pre marriage screening. Over the last six months (from July – December 2005), the number of VCT clients was 441 of which 53 % were male and 47% female. However, the HIV positivity of test result varied from 24% in male to 34 % in females. One hundred ninety four clients came from the town and 57(29.4%) were positive for HIV. Two hundred fifty clients were from rural of who 71(28%) were positive for HIV.

Health workers claimed that they have little information about PMTCT and ART. There is great desire and conviction to implement PMTCT and to integrate VCT with MCH programs. The possible challenge that could arise from integration of the program was work over load to the assigned personnel, demand for commodities and supplies.

The reasons listed for low utilization of VCT by pregnant women from the health professionals' perspectives were; stigma and discrimination, ignorance of the benefit from VCT, low risk perception and male partner dominance. The unavailability of the service in rural settings could be the reason for not undertaking VCT. Providers urge the establishment of VCT and PMTCT programs in the woredas including ART service. Which they consider it could minimize the suffering of PLWHA including HIV infected pregnant women.

Health workers assure that VCT can be integrated with the existing MCH services in the woredas. They urge for the availability of supplies and commodities to run the program effectively and call for training of professionals that they said is indispensable for success of VCT and PMTCT in the area. Health workers appeal for Program managers, health workers and the community at large to be sensitized concerning PMTCT and VCT programs before expansion of the program.

## 5- Discussion

The purpose of this study was to examine pregnant women's expressed willingness towards VCT in Wukro and Keleteawelaelo woredas. From the total study participants 312(74%) approved VCT to be taken during pregnancy. This figure is lower than studies done on Diredawa antenatal care attendees (96%) and the general population done in Gondar 95.2% (13,25). This discrepancy could arise due to the reason that Diredawa study participants were purely from the town, there are also different organizations advocating on the importance of VCT. The population-based survey done in Gondar comprise male and female participants whereas this study include only women which are disadvantaged and marginalized group of the society.

In this study, almost all respondents were aware of HIV. Findings on knowledge of HIV were consistent with studies done in Gondar, Diredawa, Jijjiga and Jimma towns (13,14,15,25). The source of information for pregnant women was virtually the same as in other studies (12,13,14,24, 25). The major source of information for Mekelle Town was different from this study area. Health workers were the main source of information for Wukro and Keleteawelaelo whereas radio was primary source of information for Mekelle Town (26). This could be due to the reason that women in the study area may posse less number of Radios or did not have spared time to listen radio messages.

Misconceptions regarding HIV /AIDS were a bit higher than the study done elsewhere in the country (13,14). Some of the misconceptions were; considering insect bite as mode of transmission, believing that if a person is living with HIV infected person he/she will contract HIV and the likes. The difference of misconception could arise from the variation of study

population since our study participants were from urban and rural pregnant woman they may have less access to detailed concepts of HIV/AIDS messages. This issue requires careful handling and further research. Such misconceptions will have to be overcome by extensive and broad based IEC. If not, the existing stigma, discrimination, and denial of actual events related to HIV will continue to prevail.

Pregnant women's knowledge of mother-to-child transmission was found considerable to be high. When compared with the study in Gondar the proportion was lower (13). Nearly half of perinatal HIV infection has been prevented with Niverapin (antiretroviral drug) in some African countries (27). In spite of the fact that ARV drugs have such a potential to reduce HIV transmission, very few in our study participants were aware of the existence of any drug to reduce MTCT of HIV in the study area. According to the findings of this study, lower percentage of respondents knew that one could check his/her HIV status using blood test compared to the study done in Gondar (13). This discrepancy could arise from the fact that women have less opportunity for accessing media messages and their status is low than the general population. This implies that considerable number of study participants were incriminating non HIV/AIDS patients as having the disease based on physical appearance and other signs. Since knowledge allows people to exercise positive behavior it is time to design a strategy that could enhance the knowledge of pregnant women.

HIV transmission through breast-feeding is very marked among breast-feeding populations that account for 15-20 percent of MTCT of HIV (27). In this study, HIV transmission through breast-feeding was recognized by respondents that could suggest having an effect in selecting feeding options for HIV positive lactating women. This result was substantiated both by the qualitative

and quantitative assessments. Therefore, existing knowledge should be built-up further to attain PMTCT of HIV programs for better impact. Further research should be considered to assess breast-feeding pattern and attitude towards alternative feeding of women.

Clients accessing VCT centers were dominated by males but the percentage of positivity is higher in females according to the documents from VCT sites in the study area. This finding was consistent with that of the study done in Anagazi, Tanzania (20). This could be due to Biological and social vulnerability of women. The number of pregnant women who had VCT in their lifetime in this study area was less than that of Gondar Town 19% and 33% respectively (13). The number of pregnant women who had VCT in the study area was higher than a Tanzanian study 19% and 7% respectively (28). The variations of VCT up take between Tanzanian study and this study could be due to time variation as the Tanzanian study was done four years back. On the other side the difference between our study and the study done in Gondar could be as a result of population variation because only pregnant women are involved in this study whereas the Gondar study consist of adult population.

Test result collection by those who ever had VCT was promising in the study area. Almost all tested women 79(98.8%) collected their test result. This figure is much higher than findings in Gondar and Jijjiga (13,14). A similar study in East Africa pointed out that 25-35% of clients never came for test results to VCT sites. In USA, around 40% of clients did not appear for test result collection. Similarly in Zimbabwe, there was a record of 15% disappearance from test result collection(9).However, with the same day result delivery , the practical reason for not returning for test result were removed , but counselors should ensure that clients really do want the test result and they are not taking it under pressure (9). High result collection pattern in this

area: could be due to the reason that they are using local institutions, majority took the test for marriage purpose, the counseling process may be attractive, confidentiality may be kept well to take test result and they are expecting themselves at low risk. This experience should be shared with other institutions.

A pilot study in Lusaka, Zambia, demonstrates preference of study participants to collect test result within the same day was 83%, whereas for Wukro and Kleteawlaelo it was 68% (9). This could be due to the reason that women expect the result delivery process would take long time .The other possibility can also be there are different Governmental organization and NGO which were actively involved in advocating the importance of test result collection in the other studies.

Preference of counselors by study participants was consistent with other studies done in the country. Female and age above the clients were preferred by study participants (13, 14 & 15). The other most important concerns were competence of the counselor and confidentiality of test result. Government health institutions were most accepted sites of VCT. The majority of respondents 79% in this study area preferred confidential testing similarly 70% study participants in Gondar and 74.3% in Jijjiga towns went for confidential testing which was comparable with This study (13,14). This shows there is a great concern for secrecy, VCT clients also trust on documentation and believe their name will not be accessible to others except their counselor.

Similar to another study in Kano, Nigeria, both qualitative and quantitative results established the inhibitors for VCT up take .The factors were individual's fear of perceived consequence of being positive, poor couple communication, disempowerment of women and denial about HIV risk (29). Coherent to other studies this study showed that women were blamed for bringing the virus

in to the household and expected risk of violence or discrimination of various kinds upon disclosure of their HIV status. This problem of violence could be particularly acute for pregnant women who for the first time knew their test result at ANC clinics (30).

Factors that have influence on willingness for VCT during pregnancy vary from country to country and from Region to Region. In this study, factors that favor VCT approval were: being multigravida, pregnant women who explain they have interest to discuss about positive test result to partner and women who believe their male partners have vital role to take VCT. This study has established the factors that are affecting for VCT willingness are related with low status of women. Women in this study have very little power to make decision simultaneously their freedom to seek for VCT was very much limited.

In this particular study, multigravida had seven fold amplified (OR=7.12, 95%CI 1.05, 48.30) interest to approve VCT than grandmultigravid women. Those who discuss with partner freely regarding positive test result have about eight times increased intention (OR=7.74, 95%CI 1.74, 28.15) than those not discussing with partner. Pregnant Women who believe that their male partners have a major role to accept VCT were having almost four times increased willingness (OR=3.84, 95% CI 1.22, 13.23) than those not having the notion of partners role.

Like the one done in Tanzania this study demonstrated the association of male partners' role and its implication in VCT up take (28). If pregnant women are to participate fully in VCT and benefit from PMTCT efforts, their male partner must be committed and involved in the process. All the qualitative study participants also urged male participation for the success of the program. In order for a pregnant woman to be tested, free discussion with her partner and other members of

family should be encouraged .In spite of this fact, free discussion is not accepted by considerable number of study participants. This can hamper the intention of pregnant women to be tested thereby hindering the advantage from VCT and subsequent care and treatment.

Majority of the interviewed health professionals and TBAs'; lack deep knowledge about the linkage of VCT, PMTCT and ARV therapy. In order to benefit pregnant women from VCT the capacity of health workers and TBAs should be built-up. The mechanism of capacity building could be through cascade of workshops, on-job trainings and supervision.

WHO report, 2002, identified that when HIV infection is prevalent VCT should be routinely available in health institutions (31). Study participants for FGD and key-informant interviews were in favor of this notion. Expansion of VCT encompasses a very great challenge in low-income countries, which require strong leadership and monitoring and evaluation of the program (30). Projects done in Tanzania, Zimbabwe, South Africa and Zimbabwe showed that it was feasible to expand PMTCT by way of increasing VCT in large scale to pregnant women in developing countries (5,17,28). Study participants of key informant interview in this study also insisted for expansion of VCT in large scale to pregnant women. Health workers were also ready and strongly urged for the start up of PMTCT program in the study area. The reason why they are insisting for start up of such a program could be they were informed about the advantage gained in the pilot study areas of PMTCT of HIV elsewhere in the region.

## 6-Conclusions and recommendations

### 6-1 Conclusion

This study has indicated the status and factors associated with willingness for VCT of pregnant women. Our study established that the number of pregnant women willing to undergo VCT in Wukro and Keleteawlaelo were lower than those reported in other studies in the country. Our study has also identified the status of knowledge of pregnant women about HIV/AIDS, VCT, and MTCT that was relatively high. However, it also made clear that there was marked misconception in our study participants, which requires to be addressed systematically. This study also showed that the number of women accessing VCT previously were almost one fifth of the total participants. Almost all tested participants collected their HIV test result which was encouraging finding.

In our study being Multigravid, women who could discuss freely with their male partners about results of HIV testing, and women who considered that male partners play major role in VCT uptake were predictors for willingness to consider VCT. This study also indicated value of male partners influence on decision-making pattern of women towards VCT service utilization. Our study has also showed participants expected physical, psychological and social problems if they disclose positive test result to their partners.

This study provides useful insight for the planning and implementation of VCT programs. Our findings can be used as a useful tool to expand PMTCT services. They can serve as basis to integrate VCT with MCH programs in rural and urban areas of the Region in particular and the country in general .Our study has identified that health workers' and TBAs' readiness for provision of PMTCT of HIV in ANC setting

## 6-2 Recommendations

- Empowerment of women to make informed choices about VCT. This could ensure easy access for prevention, treatment, care and support.
- Intensify coordinated and targeted IEC program to convince pregnant women in order to utilize VCT. Develop gender sensitive IEC campaign to the community. Address stigma and discrimination through strong IEC.
- Promote couple counseling.
- Strengthen post test counseling and care and support services for pregnant women.
- Integration of VCT with MCH activities in health institutions.
- Develop strategy for community mobilization and support of the program.
- Develop a strategy for monitoring and evaluation of the program.
- Training of health professionals.

## 7-Strength and limitations

### 7-1 Strength of the study

- ✓ This study adopts standard questionnaire from BSS survey with reasonable modification.
- ✓ The sample size was large enough with precision of 4%.
- ✓ Intensive training and day-to-day supervision were conducted for data collectors.
- ✓ Data collection was carried out by same sex (female) non-health professional interviewers to minimize bias.
- ✓ The study incorporated health institutions at the grass root level, i.e. health stations, health centers and district hospital.

### 7-2 Limitation of the study

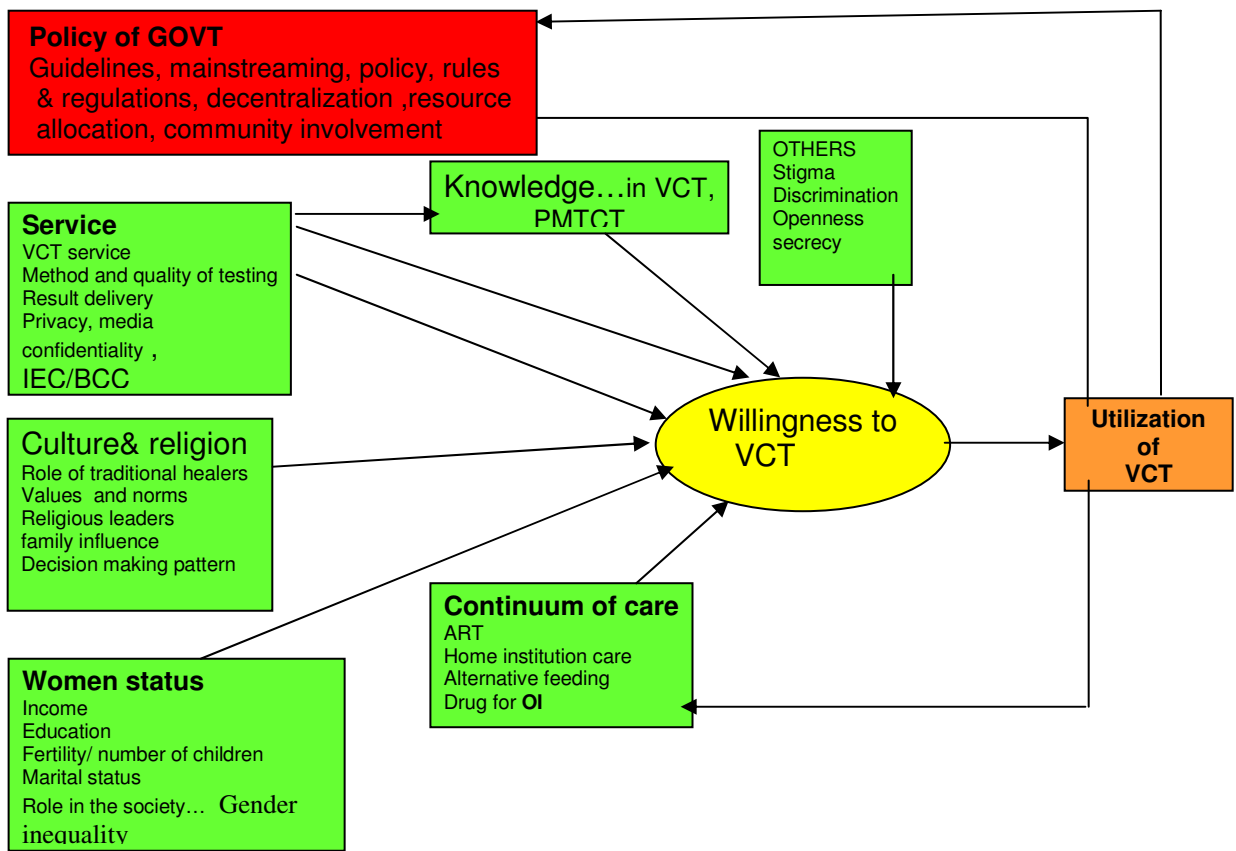
- ❖ As in other behavioral surveys, respondents may not reply openly to sensitive and private questions.
- ❖ It was institution based.
- ❖ Like any cross sectional study it fails to show causal relationship

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**Fig II Conceptual frame work showing the linkage between Willingness to VCT and Other factors**





# Annex I Questionnaire for Pregnant women attending antenatal care service in Wukro and Keleteawlaelo Woredas

## Section 0 : Questionnaire Identification

001-Date \_\_\_/\_\_\_/\_\_\_

002 Questionnaire Identification Number - \_\_\_\_\_

003 Region Tigray

004 Woreda \_\_\_\_\_

005 Kebele \_\_\_\_\_

006 Sub kebele Kushet \_\_\_\_\_

007-Residence Urban

Rural

## Introduction

My name is \_\_\_\_\_. I am working as data collector in the survey conducted by Addis Ababa University Medical faculty community health department. We are interviewing pregnant women here about willingness of VCT, Knowledge and barriers to VCT utilization. This study is designed to generate information for program expansion and designing strategies for MTCT prevention in the Region and else where with similar characteristics. To attain this purpose, your honest and genuine participation by responding to the question prepared is very important highly appreciated.

## Confidentiality and consent

We would like you to answer some personal questions that some people may find it difficult to answer . Your answers are completely confidential. Your name will not be written on this form . The nurses, doctors and other health workers people will not be told what you have said in relation to your name. You can refuse to answer a single question, more than one question to the extent to stop the interview at any step if you are not comfortable. However your honest answer to these Questions will help us to understand the magnitude of willingness for VCT and barriers associated with the Acceptance of the service We appreciate your kindness to be part of the study. The interview will take about 15- 25 minutes. Are you willing to participate?

IF the answer is yes  → Continue

No  → Stop

Name of health institution \_\_\_\_\_

Kebele/Tabia \_\_\_\_\_

Signature of the interviewee certified that respondent has given informed consent verbally

Checked by supervisor NAME \_\_\_\_\_ SIG \_\_\_\_\_  
DATE \_\_\_\_\_

## Section 1 : Socio demographic and economic information

Sr. no	Question	Coding category	Skip	Code
101	How old are you?	_____ years		
102	To what ethnic group you belong?	<ul style="list-style-type: none"> <li>• Tigray 1</li> <li>• Amhara 2</li> <li>• Afar 3</li> <li>• Oromo 4</li> <li>• Others ( specify) 5</li> </ul>		
103	What is your religion?	<ul style="list-style-type: none"> <li>• Orthodox 1</li> <li>• Muslim 2</li> <li>• Protestant 3</li> <li>• Catholic 4</li> <li>• Others( specify)_____ 5</li> </ul>		
104	What is the highest level of education you reached?	<ul style="list-style-type: none"> <li>• Illiterate 1</li> <li>• Able to read and write only 2</li> <li>• Grade 1 - 4 3</li> <li>• Grade 5-8 4</li> <li>• Grade9-12 5</li> <li>• Tertiary level 6</li> </ul>		
105	What is your occupation at this time?	<ul style="list-style-type: none"> <li>• Student 1</li> <li>• House wife 2</li> <li>• Un employed 3</li> <li>• Housemaid 4</li> <li>• Daily laborer 5</li> <li>• Merchant 6</li> <li>• Gov't employee 7</li> <li>• Privet employee 8</li> <li>• Farmer 9</li> <li>• Others( specify) - _____ 10</li> </ul>		
106	What is your Household earning estimated in birr per month?	_____ eth birr _____		
107	What is your family size?	_____		
108	What is your marital status?	<ul style="list-style-type: none"> <li>• Single 1 → 1</li> <li>• Married 2</li> <li>• Divorced 3 →</li> <li>• Widowed 4 →</li> </ul>		

Sr. no	Question	Coding category	Skip	Code
110	If you are married are you living together?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> </ul>	→ 111	
111	If you are separated for how long?	<ul style="list-style-type: none"> <li>• &lt; 1 month 1</li> <li>• 1 month to six months 2</li> <li>• &gt; 6month 3</li> </ul>		
111	number of pregnancies you have?(including the current one)	_____		
112	How many months of gestation are you now?(approximate)	_____		
113	How many antenatal care visits you made in the current pregnancy?	<ul style="list-style-type: none"> <li>• Only one 1</li> <li>• Two to three 2</li> <li>• More than three 3</li> </ul>		
114	What is the profession of your husband?	<ul style="list-style-type: none"> <li>• Student 1</li> <li>• Military 2</li> <li>• Un employed 3</li> <li>• Daily laborer 4</li> <li>• Merchant 5</li> <li>• GOV't employee 6</li> <li>• Privet employee 7</li> <li>• Farmer 8</li> <li>• Others( specify) - _____ 9</li> </ul>		

## Section2 knowledge and attitude towards HIV, MTCT AND PMTCT

Sr. no	Question	Coding category	Skip	Code																																																		
201	Have you ever heard of HIV or disease called AIDS ?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> </ul>	301																																																			
202	Do you know how HIV is transmitted?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• No response 99</li> </ul>	301																																																			
203	If your answer to question no202 is yes mention the way HIV/AIDS is transmitted? <b>(More than one answer is possible)</b>	<ul style="list-style-type: none"> <li>• Sexual intercourse 1</li> <li>• Through Infected blood transfusion 2</li> <li>• From sharp objects 3</li> <li>• From mother to child 4</li> <li>• Injection with un sterile needle 5</li> <li>• Other (specify)_____ 6</li> </ul>																																																				
204	Can HIV/AIDS be cured	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• I don't know 88</li> <li>• No response 99</li> </ul>																																																				
205	How can people protect themselves from getting HIV/AIDS? <b>(multiple response)</b>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Yes</th> <th>no</th> <th>DN</th> <th>NR</th> </tr> </thead> <tbody> <tr> <td>204.1 Abstinence</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.2 Avoiding multiple sexual partnership</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.3 Avoiding sharing sharp</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.4 Avoiding mosquito bite</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.5 Avoiding physical contact</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.6 Avoiding physical contact</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.7 avoiding eating together</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.8 avoid living together</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>204.9 Others_____</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> </tbody> </table>		Yes	no	DN	NR	204.1 Abstinence	1	2	88	99	204.2 Avoiding multiple sexual partnership	1	2	88	99	204.3 Avoiding sharing sharp	1	2	88	99	204.4 Avoiding mosquito bite	1	2	88	99	204.5 Avoiding physical contact	1	2	88	99	204.6 Avoiding physical contact	1	2	88	99	204.7 avoiding eating together	1	2	88	99	204.8 avoid living together	1	2	88	99	204.9 Others_____	1	2	88	99		
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206	Can a pregnant women living with HIV/AIDS transmit the disease to her un born baby?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• I don't know 88</li> <li>• No response 99</li> </ul>	301																																																			
207	Can an HIV infected women transmit to her child during pregnancy?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• I don't know 88</li> <li>• No response 99</li> </ul>																																																				

Sr. no	Question	Coding category	Skip	Code																																													
208	Can an HIV infected women transmit to her child during child birth?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• I don't know 88</li> <li>• No response 99</li> </ul>																																															
209	Can an HIV infected women transmit the virus to her child through breast milk?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• I don't know 88</li> <li>• No response 99</li> </ul>																																															
210	Is there any means to avoid transmission of HIV from mother to her child?	Yes 1 No 2 I don't know 88 No response 99	<ul style="list-style-type: none"> <li>☛ 301</li> <li>☛ 301</li> <li>☛ 301</li> </ul>																																														
211	Do you know the existence of intervention which can reduce mother to child transmission?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• No response 99</li> </ul>																																															
212	What Is? are the Means / intervention which can reduce mother to child transmission?	Avoiding breast feeding 1 Antiretroviral drugs 2 Others(specify) 3 Don't know 88 No response 99																																															
213	Have you ever discussed about HIV AIDS and how to prevent it with----- ?  <b>(multiple response)</b>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> <th>DN</th> <th>NR</th> </tr> </thead> <tbody> <tr> <td>Your Partner</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>Your Father</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>Your Mother</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>Your Sister</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>Your Brother</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>.&gt;&gt; Neighbor</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>Others</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> </tbody> </table>		Yes	No	DN	NR	Your Partner	1	2	88	99	Your Father	1	2	88	99	Your Mother	1	2	88	99	Your Sister	1	2	88	99	Your Brother	1	2	88	99	.>> Neighbor	1	2	88	99	Others	1	2	88	99		1	2	88	99		
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### Section 3: personal risk perception

Sr. no	Question	Coding category	Skip	Code																																
301	Do you think you can contract HIV virus?	<ul style="list-style-type: none"> <li>• Yes 1</li> <li>• No 2</li> <li>• I don't know 88</li> <li>• No response 99</li> </ul>	<p>→ 305</p> <p>→ 305</p> <p>→ 305</p>																																	
302	What is your chance of contracting HIV infection?	<ul style="list-style-type: none"> <li>• Low 1</li> <li>• Moderate 2</li> <li>• High 3</li> <li>• I don't Know 88</li> </ul>																																		
303	<p>If the answer is low moderate or high to (302)</p> <p>Tell me the reason/s for being at risk?</p> <p><b>(More than one answer is possible)</b></p>	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> <th>NO resp once</th> </tr> </thead> <tbody> <tr> <td>I had multiple sexual partners</td> <td>1</td> <td>2</td> <td>99</td> </tr> <tr> <td>I had un protected sex</td> <td>1</td> <td>2</td> <td>99</td> </tr> <tr> <td>I don't trust my husband</td> <td>1</td> <td>2</td> <td>99</td> </tr> <tr> <td>Injection with un sterile needle</td> <td>1</td> <td>2</td> <td>99</td> </tr> <tr> <td>sexual contact with HIV positive person</td> <td>1</td> <td>2</td> <td>99</td> </tr> <tr> <td>Invasive traditional medicine</td> <td>1</td> <td>2</td> <td>99</td> </tr> <tr> <td>others</td> <td>1</td> <td>2</td> <td>99</td> </tr> </tbody> </table>		YES	NO	NO resp once	I had multiple sexual partners	1	2	99	I had un protected sex	1	2	99	I don't trust my husband	1	2	99	Injection with un sterile needle	1	2	99	sexual contact with HIV positive person	1	2	99	Invasive traditional medicine	1	2	99	others	1	2	99		
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## Section 4: voluntary HIV counseling and testing Knowledge and attitude practice.

Sr. no	Question	Coding category	Skip	Code
401	How can a person know his HIV status?  <b>(More than one answer is possible)</b>	Testing his blood 1 Simply by looking 2 By physical examination , of health professional 3 Other _____ 4 I don't know 88 No response 99		
402	Have you ever heard of voluntary counseling and HIV testing?	• Yes 1 • No 2 • No response 99		
403	What is your source of information  <b>(More than one answer is possible)</b>	Radio 1 Television 2 Health institution/workers 3 Friend 4 Neighbors 5 Kebeles meeting 6 Printed materials/poster/ leaflet 7 Others _____ 8		
404	Do you agree that VCT is important?	Yes 1 No 2 I dint know 88 No response 99		
405	Do you think voluntary HIV counseling and testing is important for pregnant women?	Yes 1 No 2 I dint know 88 No response 99		
406	What benefits of VCT for pregnant women do you know? <b><u>Read all options</u></b>  <b>(More than one answer is possible)</b>	Yes no DN NR Prevention of partners 1 2 88 99 Knowing your self 1 2 88 99 Self care for future 1 2 88 99 Prevention of mother to child transmission 1 2 88 99 others specify 1 2 88 99		
407	Please don't tell me the result?. Have you ever had voluntary counseling and testing?	Yes 1 No 2	412	

Sr. no	Question	Coding category	Skip	Code																											
408	When have you done your recent HIV test?	Up to six month 1 6-12 months 2 1-2 year back 3 > 2 years 4 I don't remember it 88																													
409	For what purpose did you take the test?  ( <b>more than one answer is allowed</b> )	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">yes</th> <th style="text-align: center;">no</th> </tr> </thead> <tbody> <tr> <td>Marriage</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>To protect my child</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>To protect my partner</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>To know my status</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Others</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>I don't have any reason</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>No response</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		yes	no	Marriage	1	2	To protect my child	1	2	To protect my partner	1	2	To know my status	1	2	Others	1	2	I don't have any reason	1	2	No response	1	2		1	2		
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Others	1	2																													
I don't have any reason	1	2																													
No response	1	2																													
	1	2																													
410	Were you volunteer while taking the test?	Yes 1 No 2	417																												
411	Did you receive counseling before testing?	Yes 1 No 2	*14																												
412	What was your satisfied level with the counseling given?	Good 1 Very good 2 Bad 3 No response 99																													
413	How Was the privacy of the room in the room where you take VCT you are counseled?	yes 1 not at all 2 I am not sure 3 I don't know 88 No response 99																													
414	Please don't tell me the results. Were you told the result?	Yes..... 1 No ..... 2	418																												
415	Which way of did you received your result?	Face to face 1 Through my partner 2 Through family 3 Through my boss 4 Through telephone 5 Others specify _____ 6																													
416	Were you given post test counseling before delivery of the result?	Yes 1 No 2 Don't know 88 No response 99																													

Sr. no	Question	Coding category	Skip	Code
417	If you were not volunteer who forced you to be tested? <b>probe</b>	My partner/husband 1 My father 2 My mother 3 My employer 4 Officials GOV't 5 Other specify _____ 6 No response 99		
418	Do you have intention to be tested if the service is made available during pregnancy?	Yes 1 No 2	430	
419	What advantages do you expect by taking VCT during pregnancy? (Multiple answers are allowed)	To lead future life..... 1 To protect my child from HIV.....2 To take necessary protective measure..... 3 To protect my partner..... 4 Other reasons.....5 I don't Know any reason .....88		
420	Which method of testing do you suggest for a pregnant women who likes to be tested?	Confidential linked test 1 Anonymous 2 Like any routine blood test 3 Others _____ 4		
421	Which way of result delivery do you prefer?	Yes No Face to face 1 2 Secretive letter 1 2 Through relatives 1 2 Through partner 1 2 Telephone 1 2 Other (specify)_____ 1 2 I don't know 1 2 No response 1 2		
422	When do you think is the ideal time to receive test result?	Same day.....1 After one day.....2 From3-7 days..... 3 After one week.....4 Other options.....5		
423	Which sex is accepted to be a counselor?	Male..... 1 Female.....2 Both can be..... 3		
424	What age do you think is acceptable to be a counselor?	Same to my age.....1 Under my age..... .2 More than my age..... 3 Age doesn't matter.....4		

Sr. no	Question	Coding category	Skip	Code																																																		
425	Which site is convenient for you to be tested?	Clinic 1 Health post 2 Health center 3 Hospital 4 Out reach site 6 Others specify _____ 7 I don't know 88 No response 99																																																				
426	Are you willing to pay reasonable fee for VCT?	Yes.....1 No.....2 No response 99	----- ☛428 ☛428																																																			
427	How mach payment do you think is fair?	Less than 5 birr 1 5 -10 birr 2 11-25 birr 3 More than 25 birr 4 No response 99																																																				
428	To whom you would tell in case your HIV test turn to be positive? Ask all questions	<table border="1"> <thead> <tr> <th></th> <th>Y</th> <th>No</th> <th>DN</th> <th>NR</th> </tr> </thead> <tbody> <tr> <td>428-1 Your Partner</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-2 Your Father</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-3 Your Mother</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-4 Your Sister</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-5 Your Brother</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-6 . Neighbor</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-7 Community leaders</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-8 Health worker</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> <tr> <td>428-9 others</td> <td>1</td> <td>2</td> <td>88</td> <td>99</td> </tr> </tbody> </table>		Y	No	DN	NR	428-1 Your Partner	1	2	88	99	428-2 Your Father	1	2	88	99	428-3 Your Mother	1	2	88	99	428-4 Your Sister	1	2	88	99	428-5 Your Brother	1	2	88	99	428-6 . Neighbor	1	2	88	99	428-7 Community leaders	1	2	88	99	428-8 Health worker	1	2	88	99	428-9 others	1	2	88	99		
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428-9 others	1	2	88	99																																																		

429	If you tell positive test result to your husband/boy-friend/spouse what reaction do you expect?				
	Possible reaction	yes	no	I don't know	No response
429-1	Insult me	1	2	88	99
429-2	Psychological harassment	1	2	88	99
429-3	Physical violence	1	2	88	99
429-4	Marriage disruption	1	2	88	99
429-5	Accept it as his problem	1	2	88	99
429-6	Stop financial support to me	1	2	88	99
429-7	Others_____	1	2	88	99

430	Who make decides for the pregnant women to accept VCT?									
	Role played by	Yes	No	DN	NR					
430-1	Your Partner	1	2	88	99					
430-2	Your Father	1	2	88	99					
430-3	Your Mother	1	2	88	99					
430-4	Your Sister	1	2	88	99					
430-5	Your Brother	1	2	88	99					
430-6	. Neighbor	1	2	88	99					
430-7	Community leaders	1	2	88	99					
430-8	Health worker	1	2	88	99					
430-9	others	1	2	88	99					
		1	2	88	99					

431	What is/are the reasons you know that make pregnant mothers refuse VCT?				
	Reasons	Yes	No	No response	
431-1	In availability of the service	1	2	99	
431-2	Inability to deal with stress of being positive.	1	2	99	
431-3	Fear of rejection by partner	1	2	99	
431-4	I don't have trust on confidentiality	1	2	99	
431-5	Fear of stigma/ discrimination	1	2	99	
431-6	lack of money	1	2	99	
431-7	Other (specify)_____	1	2	99	

### Section 5: stigma discrimination & care and support related questions

501	If your test result is positive how likely is the following might happen?				
		agree	disagree	I/D/K	No response
501-1	Neglect by family	1	2	88	99
501-2	Marital breakage	1	2	88	99
501-3	Physical abuse by spouse/partner	1	2	88	99
501-4	Neglect by friends	1	2	88	99
501-5	Increase emotional support from friends and.	1	2	88	99
501-6	Strengthen relation ship with spouse	1	2	88	99
501-7	Increased emotional support from health professional	1	2	88	99
501-8	Stop sexual relationship	1	2	88	99
501-9	Spiritual support from religious leaders	1	2	88	99
501-10	Skill building training from community	1	2	88	99
501-11	Financial support from community	1	2	88	99
501-12	Economic Support from religious institutions	1	2	88	99
501-13	Loose hope	1	2	88	99
501-14	Take revenge	1	2	88	99
501-15	Disclose test result to the public	1	2	88	99
501-16	others	1	2	88	99

This is the end of our questionnaire thank you very much for taking your time to answer those questions; I appreciate your co operation  
thank you !

Time the interview ended \_\_\_\_\_

## **Annex II. REGISTRATION FORM FOR FGD AND IN DEPTH INTERVIEW**

**Title of the study:** Assessment of willingness to VCT of pregnant women attending antenatal care.

- FGD/ interview identification code \_\_\_\_\_
- Date \_\_\_\_\_
- Full name of participant \_\_\_\_\_(optional)
- Sex \_\_\_\_\_
- Age \_\_\_\_\_
- Education status \_\_\_\_\_
- Occupation \_\_\_\_\_
- Any other information \_\_\_\_\_

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## **Annex-III Topic guide for FGD to Pregnant women**

You are all welcome!

we are happy that you devote your precious time to discuss with us. We are a group from A.A.U department of community health and Tigray Regional Health Bureau. We are conducting a study called Expressed willingness of VCT in pregnant women and we like to see the determinant factors. the results generated from this study will be useful for program designing and expansion in this area and else where when deemed important.

You all are selected for your reach information you have to share with us. You should feel free to provide your information. Your name will not be disclosed to any one . If you don't want to say any thing you can avoid it , you can also refuse to continue the discussion.

(The facilitator invites participants to introduce their name to participants)

Date\_\_\_\_\_

Time started\_\_\_\_\_

1 Please tell me how much a trait is HIV for Your community?

2 can you tell me what you pregnant women Knew about VCT?

probe - what is your Experience ?

Would you explain it?

Any thing else ?

3When should a women or a Girl should under take VCT?

Explain what the reason is?

Any example you know?

4 Where is the ideal place for pregnant women to test their blood for HIV?

Can you elaborate please?

5 Who should work as a counselor?

probe for sex age etc ...

Why do you suggest ?

Any thing else?

6 What do you know about mother-to-child transmission of HIV?

Explain it more?

7 What measures are Useful in prevention of mother to child transmission?

probe for more explanation ?

How can it be applied to the context of our community?

Explain more?

Give your experience?

8 What conditions or in what circumstance do you know that hamper utilization of VCT by pregnant women?

what else ?

probe for physical social environment and economic reasons?

9 What will be the possible reaction of men( husband/ boy friend) if A pregnant women tell him she is positive for HIV test?

probe Please more explanation?

What else?

What is your Experience?

## **Annex-IV Topic guide for FGD to Traditional Birth Attendants**

You are all welcome!

we are happy that you devote your precious time to discuss with us. We are a group from A.A.U department of community health and Tigray Regional Health Bureau. We are conducting a study called Expressed willingness of VCT in pregnant women and we like to see the determinant factors. The results generated from this study will be useful for program designing and expansion in this area and else where when deemed important.

You all are selected for your reach information you have to share with us. You should feel free to provide your information. Your name will not be disclosed to any one . If you don't want to say any thing you can avoid it, you can also refuse to continue the discussion.

(The facilitator invites participants to introduce their name to participants)

Date\_\_\_\_\_

Time started\_\_\_\_\_

1 Please tell me how much a trait is HIV for Your community?

2 can you tell me what you know about VCT?

probe - what is your Experience ?

Would you explain it?

Any thing else ?

3 When should a women or a Girl under take VCT?

Explain what the reason is?

Any example you know?

4 Where is the ideal place for pregnant women to test their blood for HIV?

Can you elaborate please?

5 Who should work as a counselor?

probe for sex age etc ...

Why do you suggest ?

Any thing else?

6 What contribution you can have in respect to VCT ?

7 What is your view if you are selected to serve your community as a counselor?

probe the burden on other services and the advantage?

8 What do you know about mother-to-child transmission of HIV?

Explain it more?

9 What measures are Useful in prevention of mother to child transmission?

probe for more explanation ?

How can it be applied to the context of our community?

Explain more?

Give your experience?

10 What role can you play in respect to PMTCT ?

Explain more?

11 What conditions or in what circumstance do you know that hamper utilization of VCT by pregnant women?

what else ?

probe for physical social environment and economic reasons?

12 What will be the possible reaction of men (spouse/ boy friend) if A pregnant women expose her self as HIV positive ?

Probe- Please explain more?

What else?

What is your Experience?

13 What will be the possible reaction of community members, if pregnant women explain that she is positive for HIV test?

Please explain more?

What else?

What is your Experience?

## Annex V Topic guide for Key-informant interview

I am happy that you devote your precious time to answer my Question. My name is \_\_\_\_\_ I came from AAUFM – DCH . I am conducting a study in title ’’ willingness of pregnant women to take VCT’’. The aim of this study is to improve and expand VCT service for pregnant women.

Now please feel free to give your opinion . You can avoid part of any question or quit response at any moment if you are not comfortable.

1- Name of health institution..

Name of health worker.....

Position/profession .....

2 Describe what activities are being done in relation to VCT and PMTCT in your setting?

- What was your planned activity? .....
- Achieved?.....

(For institutions with VCT number of clients, Type of test, Sex of Customers, out come of the test Types of counseling, fee and amount, privacy, linkage with Reproductive health service, linkage with care and support, ...Etc)

3 What trainings were given to health professionals in related to VCT& PMTCT?

- Organized by?
- Quality?
- Duration? .... Etc

4 How do you see the readiness of your institution to integrate VCT with MCH activities?

- Who has the power to decide on?
- The time estimated to make it certain?

5 What IEC materials are availing in this institution?

- Frequency of use
- Type

6 What practical challenges do you expect by integrating VCT with MCH programs?

7 What do you know a pregnant women can benefit from VCT?

8 What additional resources and policies do you know that facilitate the Integration of VCT?  
Commodities, supplies, personnel...etc.

9 What do you think than many pregnant women do not like to be tested /are not tested during their pregnancy?

- Probe for their Experience ...
- Explain more...

10 may I have your recommendations please?