FACTORS AFFECTING ACCEPTANCE OF VOLUNTARY HIV COUNCELING AND TESTING AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE IN MEKELLE PUBLIC HEALTH FACILITIES, MEKELLE,ETHIOPIA

BY ATSBHA GEBREKIDAN

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BY

ATSBHA GEBREKIDAN (B.Sc in public health)

ADVISOR

SOLOMON SHIFERAW (MD, MPH)

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III. Dedication

This thesis work is dedicated to my beloved Mother W/ro. Tadelech Asgedom who has been the source of inspiration, engine of courage, and secret for every of my achievements through all affairs of my life.

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List of Abbreviation

AIDS	Acquired Immuno Deficiency Syndrome
ANC	Antenatal Care
ARV	Antiretroviral
BSS	Behavioral surveillance Survey
CI	Confidence Interval
EDHS	Ethiopian Demographic and Health Survey
EPHA	Ethiopian public health association
FHAPCO	Federal HIV/AIDS Prevention &Control Office
FMOH	Federal Ministry of Health
HCT	HIV counseling and testing
HIV	Human Immuno Deficiency Virus
HC	Health center
IRB	Institutional Review Board
MTCT	Mother to Child Transmission
MNCH	Maternal and Child Health
NGO	Non Government Organization
PMTCT	Prevention of Mother To Child Transmission
SPH	School of public health
SPSS	Statistical package for social science
STI	Sexually Transmitted Infections
UNAIDS	Joint United Nations program on HIV/AIDS
WHO	World Health Organization

Abstract

Back ground: - Mother-to-child transmission (MTCT) is by far the largest source of HIV infection children below the age of 15 years. Globally there were an estimated 33 million people living with HIV in 2007. An estimated 370, 000 children under age 15 became infected with HIV in 2007 globally. Almost 90% live in sub-Saharan Africa. Around 90% of all children living with HIV acquired the infection from their mothers during pregnancy, birth or breastfeeding. For women to take advantage of measures to reduce transmission, they need to know their HIV status. Despite this fact many women are not willing to take voluntary HIV counseling and testing.

Objective: - To assess factors that contribute to the low uptake of HCT acceptance among pregnant women attending antenatal care services in public facilities in Mekelle Town

Methodology: - A health facility based cross sectional survey was conducted using structured questionnaire among 384 pregnant women following antenatal care (ANC) at selected health facilities of Tigray region, Mekelle town from February 2009-March 2009.

Results: - A total of 384 pregnant women fulfilling the inclusion criteria were enrolled in the study with 100% of response rate. 353 (91.9%) knew that a mother with HIV can pass the virus to her child. 309 (80.5%) of the pregnant women had heard the existence of PMTCT in the health facilities and 75 (19.5%) didn't know the existence of the program. 252 (65.6%) believed they were at risk for getting HIV. 330(85.9%) discus freely about HIV testing with their husbands which had a significant association with accepting of HIV testing[(AOR (95%CI) = 7.1 (2.78-18.09)]. And of those participants who had been tested 253 (74.6%) were during the current pregnancy. 335(87.2%) of those who were tested received their test result. Both the bivariate and the multivariate have shown that as the number of ANC visits increase the likelihood of accepting HCT among the pregnant women increases [(AOR (95%C.I = 0.14(0.24-0.79)]. Getting pre-test counseling had a significant association with acceptance of HIV testing among the pregnant mothers [(AOR (95%C.I) = 7.01 (2.77- 17.71)].

Conclusions: **-** Increasing frequency of antenatal care visits had a major role in spreading information on HIV/AIDS, MTCT and appears to be a significant factor to increase of HCT acceptance. Discussing freely about HIV sero status with partner is crucial for the acceptance of HCT and successful management of the present and future pregnancies. Despite higher

knowledge of HIV prevention still there are misconceptions influencing HCT/PMTCT uptake like as trust on God, self confidence, husbands faithfulness, fear of stigma and discrimination, they do not want to know their status , could not tolerate the positive result and because of uncertainty about the partners response on HIV testing result. Such factors affected acceptance of HCT among pregnant mothers.

Recommendations: **-** The health facilities should strengthen ANC services utilization and decrease missed opportunities for counseling and testing. To increase acceptance rate of HCT the government, Regional health bureau, zonal health office and the facilities should prepare more sources of information to be accessed by all the families and community members to educate on HIV/ AIDS, MTCT and PMTCT issues. Religious leaders, community leaders and other member of the society should play their role through awareness creation and sensitization activities to reduce the misconceptions of HIV infection among pregnant mothers.

1. INTRODUCTION

1.1. Background

Globally, there were an estimated 33 million [30 million—36 million] people living with HIV in 2007. Sub-Saharan Africa remains most heavily affected by HIV, accounting for 67% of all people living with HIV and for 72% of AIDS deaths in 2007. An estimated 370, 000 [330, 000—410, 000] children under age 15 became infected with HIV in 2007**.** Globally, the number of children younger than 15 years living with HIV increased from 1.6 million [1.4 million—2.1 million] in 2001 to 2.0 million [1.9 million—2.3 million] in 2007. Almost 90% live in sub-Saharan Africa. Around 90% of all children living with HIV acquired the infection from their mothers during pregnancy, birth or breastfeeding. According to UNAIDS 2008 report in Ethiopia 980,000 people living with HIV/AIDS, of which 92,000 were children (1).

The transmission of HIV from an infected mother to her child can be prevented almost entirely and has become rare in industrialized countries. However, it still occurs very frequently in developing countries, especially those hardest hit by the AIDS pandemic, where preventive interventions have not yet been implemented on the scale required. Reported transmission rates ranged from 13 - 32% in industrialized countries and from 25 - 48% in developing countries (2).

Mother-to-child transmission (MTCT) is the main mode of HIV infection in children and each day an estimated 1600 children born to HIV-infected mothers become infected, the great majority in sub-Saharan (3) . Of the 100 infants born to HIV infected pregnant or breast feeding women with out ARV prophylaxis, 25 - 40 %infants will be HIV infected. Of those infected, 5-10 %of them will be infected during pregnancy; 10-15% of infant will be infected during labor and delivery, and 5-20% during breast feeding. (4)

Breastfeeding is responsible for a high proportion of mother-to-child transmission in developing countries, where 30% or more of prenatal HIV infections will occur through breast milk. According to calibrated single point estimate (2007) the national adult HIV prevalence is reported to be 2.1 %(7.7% in urban and 0.9% in rural areas). 977,394 Ethiopians are living with HIV/AIDS (41% male, 59% female): an estimated 75,420 HIV positive pregnant women are

anticipated in 2007 which is the highest prevalence occurred in the 15-24 age groups and prevalence is higher among females than males in both urban and rural. Ethiopia is one of the countries most severely hit by the epidemic. Beside the dominant heterosexual transmission, vertical virus transmission from mother to child accounts for more than 90% of pediatric AIDS (4).

1.2. Statement of the problem

The specific problem experienced was the low HCT uptake in the PMTCT program for pregnant women. A pregnant woman whose HIV status is unknown is at an increased risk of obstetric complication such as premature labor, stillbirth or neonatal death. Antenatal clinic data show HIV infection levels in pregnant women hovering at 30%–32% in the early 2000s before declining to 24% in 2004. The latest in south Africa data show a continuing, rising trend nationally in HIV infection levels among pregnant women attending public antenatal clinics: from 22.4% in 1999 to 30.2% in 2005 . The sero-prevalence of HIV among ANC attendees in Tanzania has decreased from 14% in 1995 to 11% in 2003. And there is also a decline in HIV prevalence in Kenya and Uganda among pregnant mothers even though there is a possible erosion of the gains made by Uganda in the 1990s (5). HIV counseling and testing during and before pregnancy offers numerous advantages. For those who are HIV negative, there is motivation to maintain safe behavior to avoid infection and breast feed the baby for the greatest health of the infant. For women who are HIV positive, HCT is an entry point to other HIV/AIDS services including prevention of mother to child transmission of HIV, prevention and management of HIV related illnesses and access to supportive groups that promote positive living. They can also make informed reproductive choices like avoiding unwanted pregnancies (6).

All respondents who accepted HCT were willing to be tested if results remained confidential and 89% would accept if they were tested simultaneously with their partners. 69% of the women who refused HCT attribute their refusal to the social and cultural stigmatization associated with HIV. Overall, the acceptance of HCT appears to depend on the understanding that HCT has proven benefits for the unborn child (7). According to 2007/08 Federal Ministry of health (FMOH), in Tigray 136,817 clients had got ANC services; out of these pregnant women 43,285 had got pre counseling services and 27,901 were tested and 1056(3.8%) was positive. (8) According to the 2007/2008 annual report of Tigray health bureau in Mekelle town 14,433 pregnant women had got

ANC services, of these 8671 mothers had got pre-test counseling but 3533 mothers were tested for HIV and 231(6.5%) of them was positive.

The annual report for Ethiopian Fiscal year 2007/08 (July 1, 1999 – June 30, 2000E.C.) indicates that a total of 429,310 pregnant mothers got ANC service; of those 215,851 pregnant women were tested for HIV (8).

1.3. Rationale of the study

Only few studies have been conducted in Ethiopia on the magnitude and determinants of acceptance for HIV counseling and testing, one at Army hospital (2005) and the other in 10 selected health centers in Addis Ababa (2006/2007). Studies conducted so far focused on the willingness of pregnant women to accept HIV counseling and testing in Wukro town, Tigray. To the investigator's best knowledge there is no study conducted so far on factors determining the acceptance of HIV test in the region. Most studies did not show some important factors that may influence pregnant women's decision to accept HIV test such as involvement of male partner, and the institutional environment. The purpose of this study was thus to describe the reasons for the low Voluntary Counseling and HIV Testing uptake rate among pregnant women attending antenatal care (ANC) services in public health facilities in Mekelle town Tigray region. The findings of the study will help service providers and other concerned bodies to design mechanisms that will increase utilization of HIV counseling and testing.

2. LITERATURE REVIEW

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

Mother to child transmission (MTCT) of human immune deficiency virus (HIV) is the most significant route of infection in children. More than five million children under the age of 15 have acquired HIV since the AIDS epidemic begin, and almost 4 million of them have already died of AIDS. The vast majority of infected children acquire the virus from their mothers. Although Africa accounts for only 10 percent of world's population, to date close to nine tenth of all HIV infected babies have been born in the region (9).

Sentinel surveillance and HIV prevalence studies among pregnant women living in urban areas suggest that HIV infection rates in Africa range from around 5 percent to 45 percent. HIV infection rates are highest in Southern Africa.

In urban areas of Zimbabwe, Zambia, Swaziland, Botswana, Malawi, and South Africa, more than 25 percent of pregnant women are HIV-infected. In some clinics where data are collected, the rates are as high as 50 percent (10). In South Africa the risk of vertical transmission from HIV infected mother to their infants estimated to be between 19% and 36% depending on whether or not the child is breast fed (11).

2.2 Magnitude of HIV infection among pregnant women

Women are more physically susceptible to HIV infection than men. A number of studies suggest that male- to- female transmission during sex is about twice as likely to occur as female – to- male transmission. For many women including married women their partner's sexual behavior is the most important HIV risk factors. In recent years the overall proportion of HIV positive women has steadily increased in 1997, women were 41% of people living with HIV. By 2002 this figure rose to almost 50%. Several social factors are driving the trend furthermore sexual violence increase the risk of HIV transmission (12).

Married women in most African countries can rarely make decisions about HIV testing and the up take of anti retroviral drugs or changed feeding practices without wider family involvement, particularly that of their spouses (13). The only evidence of declining national adult HIV

prevalence in southern Africa comes from Zimbabwe, where both HIV prevalence and incidence have fallen. Antenatal clinic data show HIV infection levels in pregnant women hovering at 30%–32% in the early 2000s before declining to 24% in 2004. In South Africa, the latest data show a continuing, rising trend nationally in HIV infection levels among pregnant women attending public antenatal clinics: from 22.4% in 1999 to 30.2% in 2005 (a 35% increase) (14).

As in Lesotho, among young women (15–24 years) attending antenatal clinics, HIV prevalence was 39% nationally and 43% in Manzini a slight decrease in HIV prevalence among pregnant women nationally (in Botswana) has been evident since 2001 (36%) to 33% in 2005, especially among those aged 15–24 years. Nevertheless, at least 40% of pregnant women aged 25–39 years were living with HIV in 2005, as was one in two pregnant women aged 30–34 years. In the latter age group, HIV infection levels still appear to be on the rise(5).

Data from Mozambique show HIV prevalence in pregnant women (15–49 years) rose from 11% in 2000 to 16% in 2004, one of the steepest increases seen in sub-Saharan Africa in recent years(5).

In Ethiopia (2005), a total of 29,925 samples were collected from a total of 82 (44 rural and 38 urban) sites. HIV prevalence varied widely across sites in all settings (range 0.0% in Hasengie Health Center in Harari to 24.8% at Federal Police Hospital in Addis Ababa). There were 105,675 HIV-positive pregnancies in the country in 2005(18) According to calibrated single point estimates (2007), the national adult HIV prevalence is reported to be 2.1 %(7.7% in urban and 0.9% in rural). 977,394 Ethiopians are living with HIV/AIDS (41% males, 59% females); an estimated 75,420 HIV-positive pregnant women are anticipated in 2007.Highest prevalence occurs in the 15-24 age group (4).

2.3 Knowledge, Attitude, and Practice on MTCT and HCT

HIV testing and counseling services need to be made available to all women of childbearing age because PMTCT interventions depend upon a woman knowing her HIV status.

Primary prevention of HIV infection among future parents and avoidance of unwanted pregnancies among women infected with HIV are fundamental long term strategies in the prevention of

transmission of HIV to infants. The use of antiretroviral drugs during pregnancy and delivery has been shown to be effective in reducing the transmission of HIV from mothers to infants (3). With out intervention 40% of infants born to HIV infected mothers and breastfed ≥ by 2005, reduce the proportion of infants infected with HIV by 20 per cent, and by 50 per cent by 2010, by: ensuring that 80 per cent of pregnant women accessing antenatal care have information, counseling and other HIV prevention services available to them (4).

Unfortunately many studies have shown that the knowledge about mother to child transmission of HIV, including prevalence, points of transmission during pregnancy, delivery and breast-feeding is lacking (8).

In Nigeria, 70.6% of mothers of infants at a hospital believed that a mother can transmit HIV to her child while only 58% believed that a baby could be infected through breast milk (8). Other study shown that; of the total of 202 Indian women surveyed, 189 women (94%) had heard of HIV/AIDS and 60% of them had relatively good knowledge regarding risk factors for HIV transmission. However, 48% did not know that there are "means to prevent mother-to-child HIV transmission."(7).

Cross-sectional study was conducted in Khartoum Teaching Hospital Sudan, to investigate pregnant women's basic knowledge and attitude toward HIV and mother to child transmission as well as voluntary counseling and testing. Out of the 1,005 women investigated, 79% had basic knowledge about HIV. Those who were resident in Khartoum and whose age was 26.1 years and their education level was secondary and above were found to be more knowledgeable about HIV. More than half of respondents were aware of mother to child transmission. Older ≥26.1 years, educated, and working mothers were found to be more knowledgeable about mother to child transmission. Willingness to undergo the test was demonstrated in 72.8% of respondents. However, only 30.3% had the test done (16).

Study undertaken in Ghana to assess the perception and attitude of 270 antenatal clinic attendants towards HIV counseling and testing, it was found that although 92.6%of respondents indicated a willingness to get tested, only 51% considered HIV testing for pregnant women to be useful. Most (93.6%) indicated they would like their husbands (partners) to know the result of the test and

52.2% indicated that their husbands would be willing to accompany them to antenatal clinic (ANC) at least once during the pregnancy (17).

In Uganda, a qualitative study found that although almost all the women in their study were willing to take an HIV test and to reveal their HIV status to the maternity staff, they were anxious about the confidentiality of the results of their test (18).

They also feared that once the maternity staff knew their sero-status, they might refuse to take care of them. Many of them expressed concern about the possibility of being blamed, separated or subjected to domestic violence once their husband knew they were HIV positive.

Most of the women who took the test also refused to come back for their results. Those who refused the test indicated that they thought they were HIV positive and confirmation through testing could accelerate the progression of the disease. They were also afraid of the reaction of their relatives, particularly their spouses. Some of the women did not consider pregnancy to be an appropriate time to do an HIV test (18).

Cross sectional studies conducted at Arbaminch hospital in Ethiopia among 484 pregnant mothers and a community based cross sectional study conducted in North West Ethiopia among 992 women of child bearing age in 2003 found that the majority of the participants (>70%) were willing to accept HIV test, PMTCT interventions if offered and the modes of HIV transmission were well known to them except that some of participants in North West Ethiopia were not sure whether condom could prevent HIV transmission(19, 20). PMTCT baseline survey done in Ethiopia on April 2004 showed that; Forty-four percent of the women (392/900) were able to name at least 2 modes of HIV transmission and 41% (n=366/900) named 3 or more modes. Unprotected sex 91.2% (n=821/900) and use of contaminated instruments 76.6% n=689/900) were the most commonly reported modes of transmission (21).

A community based study in Addis Ababa indicated every body has heard of HIV/AIDS. Every body knows it is transmitted sexually and through sharing contaminated cutting piercing instrument. Blood transfusion and mother-to-child transmission of the virus were mentioned by about a quarter of the informants both spontaneously and after probing. The study reported a gap in this area (22). Other studies conducted in Zimbabwe from 2001 to 2003, in Malawi from 2002 to

2003 and in Barbados in 2002 among pregnant women found that more than 70% of the pregnant mothers counseled for HIV were tested for HIV (23, 24). But in Ethiopia from January to December 2007, 454,407 pregnant women visited ANC clinics; among these 241,945(53.2%) received pretest counseling and 157,919(34.8%) were tested for HIV (25).

2.4 Factors associated with the acceptance of HCT among pregnant women

Acceptability is the starting point for the success and impact of any health intervention. A number of studies have used both quantitative and qualitative methods to assess the acceptability of HCT in sub-Saharan Africa.

In an international survey of voluntary HIV testing programs in developing countries in 1997, in spite of many obstacles, HCT was feasible and acceptable for pregnant women aiming to reduce their risk of transmitting HIV to their children. Acceptance rates of between 53%-99.7% were reported from various sites in sub-Saharan Africa. Study in Lusaka, Zambia, also reported acceptance rates of between 72-90% among antenatal clinic attendants (18). The willingness for HCT was higher among urban residents than rural residents in the community based study conducted in North West Ethiopia but it was almost comparable in the study conducted in Uganda among pregnant mothers (20, 26). The use of ARV prophylaxis was not known to 386(80%) of the mothers at Arbaminch Hospital and it was reported as poor in the study conducted in Nigeria among pregnant mothers (27, 30).

The Ethiopian Demographic and Health Survey (EDHS) 2005 found that awareness and knowledge regarding the existence of ART to reduce MTCT is low. Only 21.2% of women and 25.7% of men know the risk of MTCT can be reduced through the use of drugs during pregnancy. Studies in Ethiopia and Nigeria found that more than 90% of the study participants did not know their HIV status even though they were willing to undergo HIV test in the near future (21, 27, and 30).

Result from project evaluation in Zimbabwe among 170 pregnant women surveyed showed, women who saw HCT as lower risk and women who had had a stillbirth or child die were more likely to consent. Prenatal HIV counseling and testing offers the best opportunity for prevention of mother-to-child transmission of HIV; however, less than 25% of women consented (28).

A study that was linked to a mother to child HIV intervention program in Abidjan, found high test refusal rates among pregnant women who were approached. Most women who took the test also refused to come back for their results. Those who refused the test indicated that they thought they were HIV positive and confirmation through testing could accelerate the progression of the disease. Some of the women did not consider pregnancy to be an appropriate time to do an HIV test (18).

Post-primary education was consistently found to be significant predictor of willingness and acceptance of HIV test in the studies conducted in rural and urban Uganda and in Ethiopia (27, 29). But it was not found to be significant predictor of acceptance in the studies conducted in Nigeria and in Zambia (26, 30). Another study conducted in Tanzania reported that women with higher educational status were less likely to accept HIV test (31).Besides Educational Status was found to be highly associated with knowledge of ARV and self perception of being at risk of HIV in the studies conducted in Nigeria and in Ethiopia (26, 29).

A study conducted among pregnant women at Army hospital in Addis Ababa showed that women who had better knowledge of HCT and MTCT and women with frequent ANC visit had significantly higher HCT acceptance than their counterparts. Adjusted for socio-demographic and some reproductive characteristics HCT acceptance was significantly associated with knowledge about MTCT, previous HCT experience and husbands residence (at the same house) (29).

HCT acceptance by pregnant women varies greatly and is influenced by several factors including fear of disclosure of HIV results, stigma, discrimination, disempowerment, fatalism, accessibility of HCT services, or perceived lack of benefits (32). Another study in Botswana MTCT program reported that, uptake of HCT by pregnant women was under 50% and one key factor was the low involvement of men. Women who were interviewed in the study indicated that, they felt they would be blamed if they were found to be sero positive, as they would be considered the person who has brought HIV infection to the family (33). Have that there are many women who don't seek PMTCT service; reasons are largely unknown.

2.5 Conceptual framework

This conceptual framework was adapted for previous study and I took with modification of the frame in relation to my study area.

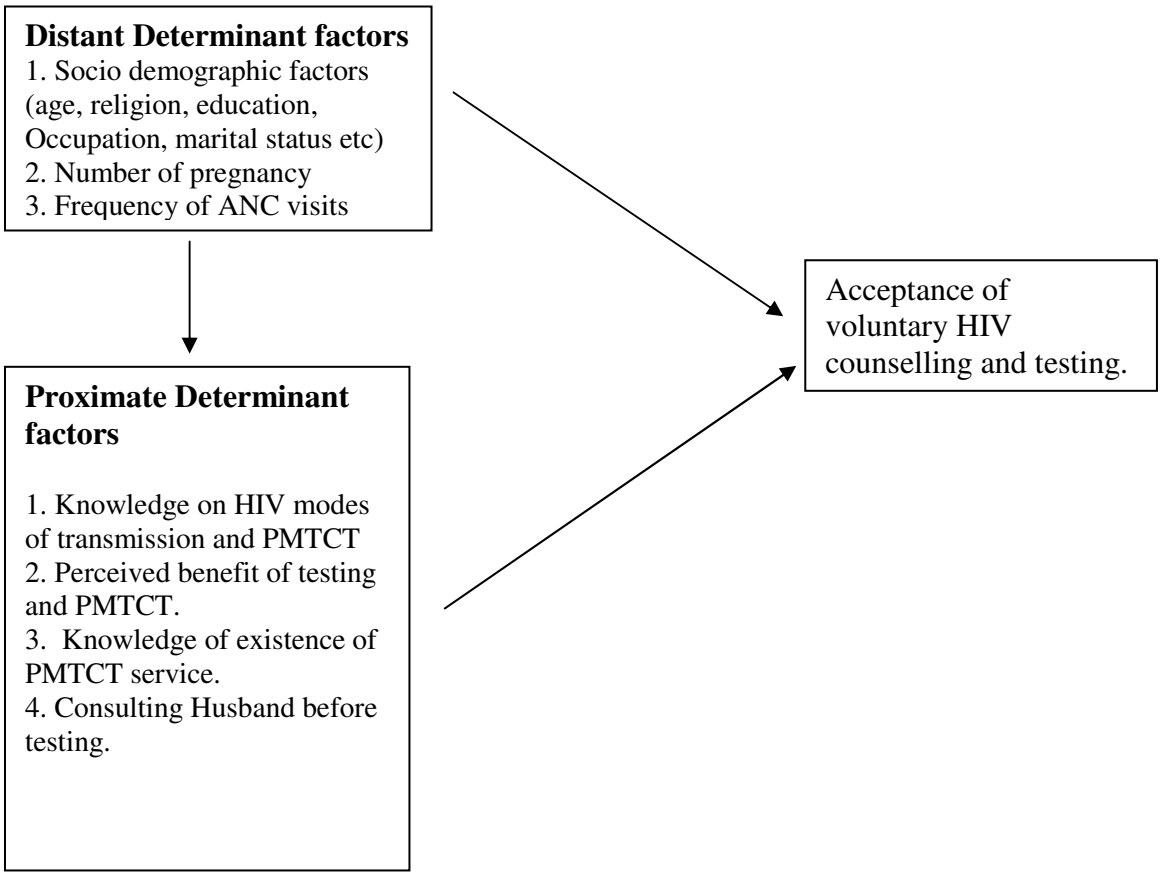

Figure-1: Conceptual frameworks for factor affecting acceptance of HCT among pregnant mothers

3. OBJECTIVES

3.1 General objective

- To assess factors that contribute to the low uptake of HCT acceptance among pregnant women attending antenatal care services in public facilities in Mekelle Town, Ethiopia.

3.2 Specific Objectives

- To examine the level of service utilization of HCT among pregnant Women.
- To assess the knowledge about HIV, MTCT and PMTCT among ANC clients.
- To assess attitudes to wards HCT, MTCT and PMTCT among ANC clients.
- To identify factors that prevents pregnant women from utilizing HCT in PMTCT service.

4. METHODOLOGY

4.1 Study area and Study period

This study was conducted in Tigray Regional State in Mekelle town, located 776 km north of Addis Ababa. The study involved client exit-interviews of ANC attendants at three health centers and two hospitals in Mekelle town. The population of Tigray regional state is estimated at 4.35 million people in the year 2008/09. The health facilities in the region consist of 15 Hospitals (both private and governmental), 42 Health centers, 113 nucleus health centers and 529 Health posts. And there are 195 HCT sites of which 54 give PMTCT services and 52 ART as well as all the public health facilities of Mekelle give the above services. (The selected three health centers & two hospitals are governmental).

According to the 2007 census projection the population of Mekelle town was estimated at 221,150 of which, an estimated 51,970(23.5%) are women's of reproductive age and 8249(3.73%) will be estimated to be pregnant. According to the annual regional health bureau report (2007/08) in Mekelle; 14433 pregnant women had ANC services where as 8,671(60%) pregnant mothers were pre-counselled, 3,533(40.7%) mothers were tested and 231(6.54%) were found to be positive. Services provided by the hospitals and health centres include-PMTCT service to pregnant women attending antenatal, intra-partum and postnatal care. Other services are family planning, and STI, voluntary confidential counselling and testing, anti-retroviral drug therapy for prevention of MTCT and pre and post test counselling. The study was conducted from Februry-March2009.

4.2 Study design;

The study was cross- sectional by design. It employed a quantitative data collection method to collect data from pregnant women on Voluntary Counseling and HIV testing services. The quantitative research approach was considered to be appropriate for this study because it allows a formal and systematic approach to collect information on pregnant women's knowledge, attitude and practices about HIV and HCT in PMTCT of the barriers that prevent pregnant women from utilizing the HCT in PMTCT services.

4.3 Source and Study population

The source population includes pregnant women of age (15-49 years) in Mekelle town. The study populations were all pregnant women who used ANC services in five health facilities in Mekelle town, namely Mekelle HC, Kasech HC, Semen HC, Mekelle hospital and Quiha hospital in the period from February -March 2009.

4.4 Inclusion and Exclusion criteria

Inclusion criteria;

- Pregnant women aged 15-49 years.
- Attending ANC clinics in public sector in Mekelle town

Exclusion criteria:

- Those pregnant women unable to communicate were excluded
- Those pregnant women out side age range of 15-49 year or attending at private facilities.

4.5 Sample size determination

The sample size of PMTCT clients was determined by Epitable Calculator of EPI 2000 statistical software using the following assumptions to estimate sample size of single population proportion.

$$n_o = (Z_{\alpha/2})^2 \frac{P (1 - P)}{d^2}$$

Assumptions:

- **Expected prevalence** (p) proportion of ANC clients who are counseled and tested for HIV is 34.8 % (according FHAPCO, report on progress towards implementation of the UN Declaration of commitment on HIV/AIDS, Addis Ababa, Ethiopia, March, 2008) (25).
- **Desired precision** (d) = 5%

Confidence level = 95%, which means α set at 0.05 and $Z_{\alpha/2}$ = 1.96 Hence, the calculated sample size was 349. Adding a 10 % allowance for possible non-response gave the required minimum sample of (n) 384.

4.6 Sampling procedure

The study targeted all the five public health facilities in Mekelle town; namely Mekelle HC, Kasech HC, Semen HC, Mekelle hospital and Quha hospital. To select 384 pregnant women who seek the selected health facilities, the total study subjects were distributed proportionally to health facilities based on the number of ANC clients they serve (according February and March, 2008 average monthly report). From this report we took 173(45%), 79(20.5%), 49(12.8%), 44(11.5%) and 39(10.2%) from Mekelle HC, Semien HC, Kassech HC, Mekelle hospital and Quiha hospital respectively. And each health facility on average served 20-30 clients per day. Accordingly, interviews were administered to the pregnant clients using structured questionnaire after completion of their follow up examination. The interview was conducted for all pregnant women who consent to HIV testing and those who did not consent to have an HIV test on the same day.

4.7 *Data collection*

4.7.1 Data collection tools

A structured questionnaire developed in English and then translated into Tigrigna language was used for data collection. The variables in the questionnaire were adapted from previous studies and by consultation with advisors and individuals. The questionnaire was adapted from Behavioral Surveillance Survey (BSS), EDHS and HCT guideline with reasonable modifications, which included

- Socio-demographic variables: (age, sex, educational level, occupation, marital status, religion, parity, frequency of ANC etc.)
- Knowledge and attitude on HIV/AIDS, MTCT and PMTCT
- Knowledge and attitude towards HCT

4.7.2 Data collection procedure

Training was given for the data collectors and supervisors for three days. The questionnaire was pre-tested on pregnant women in the town who were not eligible for the study before starting of actual data collection. Findings and experiences from the pre-test was utilized in modifying the research data collection tools. Data were collected from February 2009-March 2009. A total of 25-30 questionnaires were completed per day as the plan in proposal.

4.8 Data quality control

Findings and experiences from the pre-test were utilized in modifying and reshaping the research data collection tools. Supervision was carried out through out data collection period both by the two supervisors and by principal investigator to keep the quality. Questionnaires were collected and checked for completeness, accuracy from data collectors by supervisors and submitted to principal investigators. Variables that showed statistically significant association at bivariate analysis were retained for further analyses using multivariate logistic regression.

4.9 Data processing and analysis

After data collection, each questionnaire was checked for completeness. The data obtained from each study participant were entered, cleaned and analyzed using the Epi-info and SPSS version 16.00 computer soft ware packages. Descriptive statistics such as means, percentages and tables were employed to summarize and present findings.

4.10 Study variables

4.10.1 Dependent Variable

- Utilization of HCT among ANC clients

4.10.2 Independent variables

- Age
- Educational status
- Marital status
- Religion

- Number of pregnancy
- Number of ANC visit
- No of children
- Knowledge about MTCT and PMTCT
- Perceived benefit of HCT and PMTCT
- Perceived risk of HIV
- Consulting husband before testing
- Knowledge of existence of PMTCT

Socio demographic variables, number of pregnancies and frequency of ANC visits are taken as distant determinant factors while knowledge variables, perceived benefit of HIV testing, and PMTCT, mode of MTCT, knowledge of existence of PMTCT service, consulting husband before testing are treated as proximate determinant factors for HIV test acceptance.

4.11 Ethical considerations

Ethical clearance was obtained from the Research Ethics Committee of the SPH and Institutional Review Board (IRB) of the Faculty of Medicine (FOM), Addis Ababa University (AAU). Official permission was secured from Regional Health Bureau (RHB) and Mekelle Zonal Health Office as well as from the respected health facilities. Respondents were informed about the objective and purpose of the study and verbal consent was obtained from each respondent. They were also informed about their right of not participating in the study at any time. Confidentiality and anonymity of the information were secured.

4.12 Dissemination of result

The final report of the study were presented and discussed at the School of Public Health, Faculty of medicine, Addis Ababa University. Finally the result of study will be disseminated to EPHA, to Tigray Regional Health Bureau, Mekelle Zonal Health Office and other relevant organizations. Effort will also be made to publish the findings in one of the reputed journals.

5. RESULTS

5.1 Socio-demographic information

As shown in table-1, a total of 384 pregnant women fulfilling the inclusion criteria were enrolled in the study with 100% response rate. The respondents' age ranged from 15-42 years with a mean of 25 ± 4.9 years. Nearly half of the respondents (49%) were in the age group of 15-24 years. The majority of the respondents (93.5%) identified themselves as Christian, followed by Muslim (6.5%). Of the respondents, 336 (87.5%) were married and nearly 84.4% live with their husbands. One hundred seventy three (45.1%) of the respondents had two or less number of live children. Of the 384, one hundred fifty (39.1%) were premigravida mothers while 234 (60.9%) had two or more pregnancies. The majority of participants (70.3%) had two or more ANC visits while 114 (29.7%) attended the first visit. Hundred forty six (38%) of the ANC attendants had primary level of education. Two hundred twenty five (58.6%) were house wives, followed by government employees 49 (12.8%). The monthly average income of the respondents; 86 (22.4%) ≤500 Eth. Birr, 132 (34.4%) between 501-1000 Eth. Birr and 63 (16.4%) had above 1001 Eth. Birr.

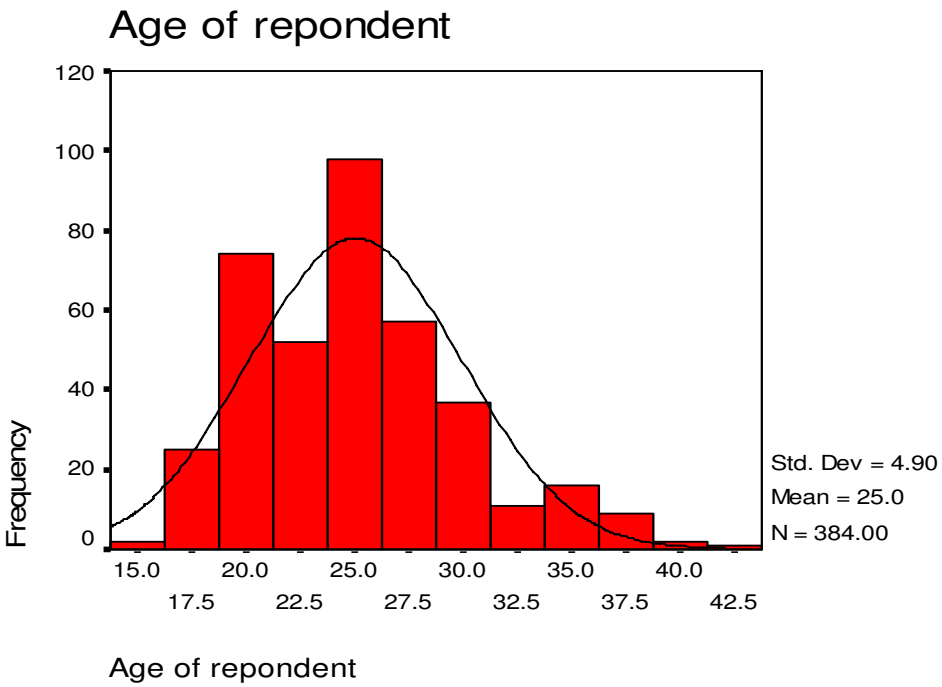

Figure 2: Age distribution of respondents

Table-1: Socio-demographic characteristics of ANC attendants at public Health facilities, Mekelle town, March, 2009

Variables		frequency	Percent (%)
Age	15-24	188	49
	25-34	171	44.5
	35-44	25	6.5
Religion	Christian	359	93.5
	Muslim	25	6.5
Educational status	Illiterate	83	21.6
	1-8th	146	38
	9-12th	113	29.4
	above12th grade	42	10.9
Occupational status	House wife	225	58.6
	govt. employed	49	12.8
	merchant	37	9.6
	student	39	10.2
	daily labor	34	8.9
Marital status	married	336	87.5
	single	25	6.5
	others (divorce, separate, widowed)	23	6
No of pregnancies	1	150	39.1
	2	113	29.4
	3	57	14.8
	4	64	16.7
No of live children	1	114	31.8
	2	144	13.3
	3	75	7.3
	4	51	5.7
Monthly average income	Low (<500 Ethio. Birr)	86	22.4
	Medium (501-1000 Ethio. Birr)	132	34.4
	High(≥1001Ethio.Birr)	63	16.4
Total		384	100.0

Table-2 depicts the result from logistic regression for education and marital status. The illiterate and married women had a significant association with acceptance of HCT in the bivariate analysis. However, the multivariate regression shows age, religion, education, marital status, occupation and monthly average income had no association with the acceptance of HCT.

Table-2: Socio-demographic determinants of acceptance of HIV testing among ANC attendants in Mekelle town, March, 2009

Variables		HIV test		OR (95% CI)	
		Yes	No	Crude	Adjusted
Age	15-24	169	19	0.6(0.2-1.9)	1.9(0.2-20.5)
	25-34	149	22	0.8(0.2-2.5)	2.5(0.3-25.9)
	35-44®	21	4	1.00	1.00
Religion	Orthodox	316	43	1.6 (0.4-6.9)	0.8(0.2-4.2)
	Muslim®	23	2	1.00	1.00
Education	Illiterate	67	16	4.8(1.04-21.9)**	4.2(0.5-38.1)
	1-8^{thgrade}	128	18	2.8(0.6-12.7)	2.2(0.3-17.7)
	9-12th grade	104	9	1.7(0.4-8.4)	1.1(0.2-8.1)
	above 12th grade®	40	2	1.00	1.00
occupation	House wife	195	30	0.9(0.3-2.5)	1.2(0.3-5.6)
	Gov. employed	46	3	0.4(0.1-1.7)	1.3(0.2-10.9)
	Trader	34	3	0.5(0.1-2.3)	0.9(0.2-5.5)
	Student	35	4	0.7(0.2-2.7)	1.3(0.2-11.2)
	Daily laborer®	29	5	1.00	1.00
marital status					
	married	300	36	0.3(0.1-0.9)**	0.5 (0.1-3.7)
	single	22	3	0.4(0.1-1.8)	0.8(0.1-8.5)
	Other®	17	6	1.00	1.00
Income	≤500 Ethio. Birr	72	14	1.6(0.6-4.1)	1.1(0.6-3.3)
	501-1000 Ethio. Birr	125	7	0.4(0.2-1.3)	0.4(0.1-1.2)
	≥1001 Ethio. Birr®	56	7	1.00	1.00

® =Reference category

** = statistically significant at p<0.05

5.2 Knowledge about HIV and MTCT

All participants have responded to the questions on mode of HIV transmission and its prevention methods. Three hundred thirty four (87%) of the respondents had mentioned the means for HIV transmission is sharp material: 310 (80.7%) sexual intercourses: 70 (18.2%) infected blood and 17 (4.4%) mother to child transmission. Regarding preventive methods, 200 (52.1%), 161 (41.9%) and 156 (40.6%) mentioned sexual abstinence, faithfulness and using condoms respectively. In addition 353 (91.9%) of the respondents knew that a mother with HIV can pass the virus to her child. However, 14 (3.4%) responded that HIV cannot pass from mother to infant: the remaining 16(4.2%) responded that they do not know. With respect to the modes of MTCT, 95 (24.7%) mentioned that the infection can occur during pregnancy: 87(22.7%) during delivery and

72 (18.8%) during breastfeeding respectively. Sixty one (15.8%) of the respondent were able to correctly identify two modes of MTCT and 35 (9.1%) do not know or did not mention any means of MTCT. However only 20 (5.2%) of the mothers correctly mentioned the three (during pregnancy, delivery and through breastfeeding) ways of HIV transmission from pregnant mother to infant. Regarding awareness on PMTCT, 309 (80.5%) of the pregnant women had heard the existence of PMTCT at the health facilities and seventy five (19.5%) don't know the existence of the program. (Table-3)

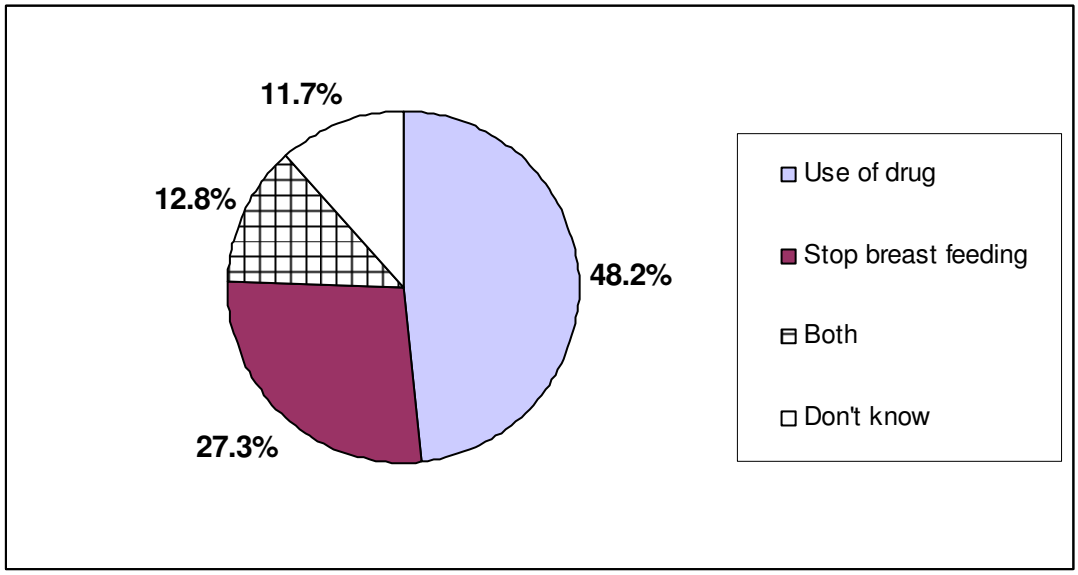

Figure-3: Method of MTCT mentioned by the respondents at five public health facilities of Mekelle town, Tigray, March 2009.

Three hundred thirty nine (88.3%) of participates knew at least one method of prevention of HIV transmission. Figure-3 shows the methods of PMTCT mentioned by the respondents: 185 (48.2%) use of drug, 105 (27.3%) avoid breast-feeding and 49 (12.8%) both respectively and about 45 (11.7%) participants didn't know the means of prevention.

Table-3: Clients' knowledge, risk perception, attitude, HCT and source of information for HIV/AIDS, MTCT and PMTCT at five health facilities of Mekelle town, Tigray, Ethiopia. March, 2009

Variables		Frequency(N=384)	Percent (%)
Risk perception	high	252	65.6
	low	132	34.4
Know the existences of	Yes	309	80.5
PMTCT service	No	75	19.5
MTCT	Yes	353	91.9
	No	31	8.1
Ever Discussed on	Yes	330	85.9
HIV/AIDS with partner?	No	49	12.8
Exposing to pre-test	Yes	315	82
counseling	No	69	18
HIV tested	Yes	339	88.3
	No	45	11.7
Disclosed test result to	Yes	329	85.7
partner	No	38	9.9
Means of prevention of	use of drugs	185	48.2
MTCT	stop Breastfeeding	105	27.3
	both	49	12.8
	Don't know	45	11.7
Time of HIV test	current pregnancy	253	74.6
	1-2 years ago	64	18.9
	Before 2years	17	5.0
Sources of information for	health facility	178	46.4
PMTCT/HIV	mass-media	131	34.1
	school	47	12.2
	family	17	3.6
	others	11	3.7

Perception of risk

Two hundred fifty two (65.6%) of the respondents believed that they are at risk for getting HIV. Of these, 79 (29.04%) responded the reason for getting HIV is un-sterilized needle; 71 (26.1%) not using condom consistently; 53 (19.5%) had multiple partners. However, 66 (24.3%) of the 272, did not know the reason for getting HIV and 2(0.7%) participants mentioned that uncertainty of their husbands' responsibility. (Figure-4)

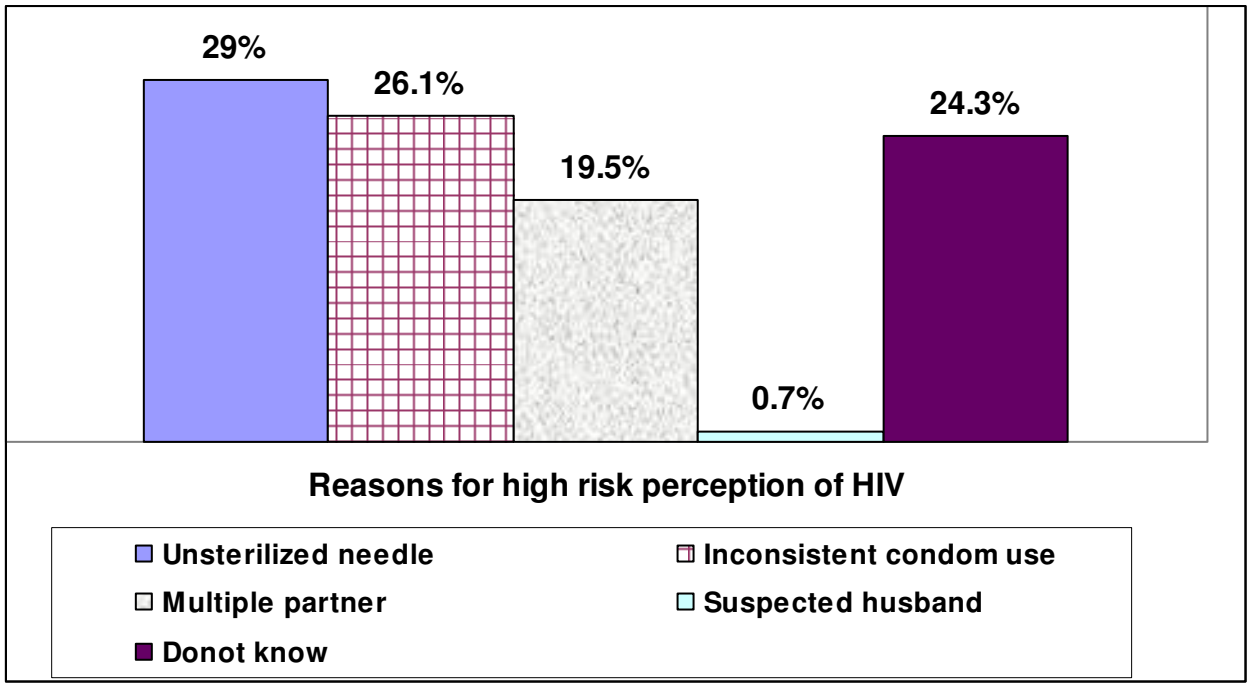

Figure-4: Participant's reason for high risk perception in five public health services of Mekelle town, March, 2009.

One hundred twelve (29.2%) of the 384 participants believed that they are not at risk for getting HIV. Of these, 86 (76.8%) did not feel at risk because they trust (faithful) their partner, 10 (8.9%) believed they did not use un-sterilized needles and 4(3.5%) women believed they used condom consistently while 7 (6.3%) did not know their reasons. (Figure-5)

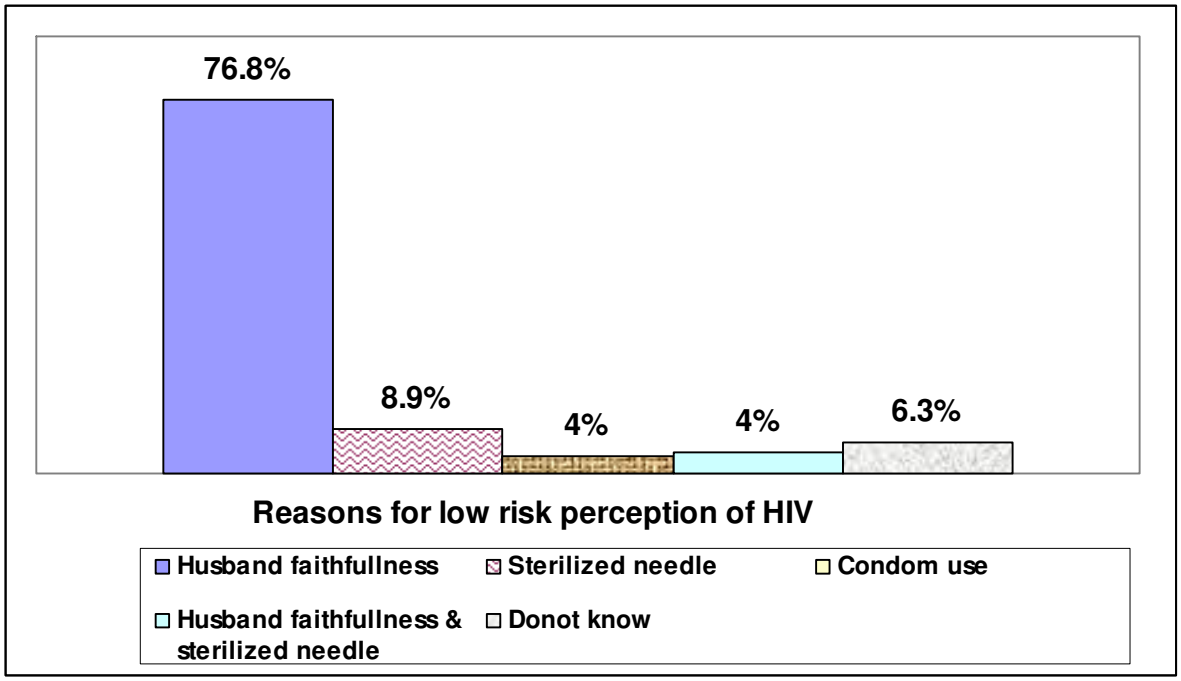

Figure-5: Participant's reason for low risk perception in five public health services of Mekelle town, March, 2009.

5.3 Attitude towards HIV testing and acceptance of HCT among pregnant women

Three hundred thirty (85.9%) indicated that they discuss freely about HIV testing with their husbands. Of the 384 respondents, 339 (88.3%) had tested for HIV. Three hundred five (79.4%) of the respondents reported that they initiated them selves to under go voluntary counseling for HIV testing. Three hundred fifteen (82%) of the respondents had got a pre-test counseling services and 69 (18%) didn't. Of the participants who had been tested (339), 253 (74.6%) were tested during their current pregnancy and 81 (23.9%) before the current pregnancy. Of these who were tested, 335 (87.2%) received their test result. 329 (85.7%) of respondents had disclosed their result to their partners'.

Two hundred eighty eight (75%) mentioned the importance and advantage of PMTCT is for the mother and the baby, 53 (13.8%) for the baby only, 17 (4.4%) for the mother only and 15 (3.9%) to the whole family. Reasons mentioned for accepting HCT were to know their status 163 (42.4%), to prevent mother to child transmission 119 (31%) and for marriage 56 (14.6%).

Surprisingly, all the respondents (384) had mentioned that they know the source of information for HIV/ AIDS and PMTCT. Out of which, 178 (46.4%) mentioned they get the information from health facilities, 131(34.1%) through mass-media 47 (12.2%) from school and 14 (3.6%) through discussion with their families. (Table-3)

Table-4: Some variables of knowledge, practices and attitude associated with the acceptance of HCT March, 2009

Variables		HIV test		OR (95%CI)	
		Yes	No	Crude	adjusted
Risk perception for HIV	high	229	23	1.99(1.06-3.72)**	1.4 (0.58-2.98)
	Low®	110	22	1.00	1.00
Know the existence of PMTCT	Yes	279	30	2.3(0.19-0.82)**	0.67(0.23-1.96)
	No®	48	13	1.00	1.00
ANC	1st visit	94	20	1.1(0.47-2.80)	0.50(0.16-1.61)
	2nd visit	129	15	0.63(0.25-1.57)	0.55(0.16-1.75)
	3rd visit	73	2	0.15(0.03-0.73)**	0.14(0.24-0.79)**
	4th visit®	43	8	1.00	1.00
Discuss with partner	Yes	306	24	8.11(4.08-16.12)**	7.1(2.78-18.09)**
	No®	33	16	1.00	1.00
Know benefits of PMTCT	Yes	338	1	24.3(4.82-370.74)**	29.4(0.62-1394.98)
	No ®	40	5	1.00	1.00
Received pre-test counseling	Yes	294	21	7.47(3.84-14.51)**	7.01(2.77-17.71)**
	No®	45	24	1.00	1.00
Live with partner	Yes	289	35	1.65(0.77-3.54)	1.23(0.43-3.54)
	No®	50	10	1.00	
Modes of mother to child transmission					
During pregnancy		85	10	0.18(0.03-1.19)	0.07(0.01-0.62)**
During labor and delivery		84	3	0.05(0.01-0.45)**	0.03(0.003-0.32)**
During Breast Feeding		60	12	0.30(0.05-1.99)	0.19(0.02-1.65)
pregnancy, delivery and Breastfeeding		17	3	0.60(0.09-4.14)	0.09(0.01-0.96)**
During labor &delivery, Breastfeeding		41	1	0.27(0.03-2.32)	0.31(0.03-3.36)
During pregnancy and Breastfeeding		12	2	0.04(0.003-0.53)**	0.03(0.001-0.46)**
During pregnancy & lab. and delivery®		3	2	1.00	1.00

® = Reference category ** = statistically significant at p<0.05

According the bivariate regression shown; those who perceived as high risk, know the existence of PMTCT and its benefit had association with the acceptance of HCT. And the multivariate regression shows those who said during pregnancy and at all stage had a significant association at [AOR (95%CI) =0.07(0.01-0.62)] and [AOR (95%CI=0.09(0.01-0.96)] respectively with the acceptance of HCT. But both the bivariate and the multivariate were shown that as the number of ANC visit increase the likelihood of accepting HCT among the respondents increases [(AOR (95%C.I = 0.14(0.02-0.79)]. And discussing freely with their partners had a significant association [(AOR (95%CI) = 7.1 (2.78-18.1)] with accepting of HIV testing in both regressions.

Getting pre-test counseling had a significant association at [(AOR (95%C.I) = 7.01 (2.77-17.72)] with acceptance of HIV testing among the pregnant mothers. Pregnant women who had a knowledge on the mode of MTCT during labor & delivery, during pregnancy & breast feeding were more likely to under go voluntary counseling for HIV testing respectively [AOR (95%CI) =0.03(0.003-0.32) and [AOR (95%C.I.) =0.03(0.001-0.46), but in the bivariate regression does not show an association during pregnancy and breast feeding specifically. (Table-4)

5.3.1 Factors Affecting PMTCT, HCT services utilization of ANC clients

Of the 384 respondents, 45 (11.7%) had refused to attend the HCT service. The reasons mentioned for the refusal: trust on God 15 (33.3%), self confident 12 (26.7%), husbands faithfulness, 11(24.4%), fear of stigma and discrimination 3 (6.7%), they do not want to know their status and could not tolerate the positive result and because of uncertainty about the partners response on HIV testing result 5(11.1%).

The reasons mentioned for not disclosing results to their partners were: nine (23.7%) women said they did not tell their partners because they were no longer in contact with them or they had never been close, seven (18.4%) mentioned fear of divorce and some partner did not perceive their risk. and four (10.5%) mothers mentioned that they have multiple partners and raped by some body and they did not know to whom they explained .One(2.6%) mother have had trust on her husband and one (2.6%) trust on God so did not disclose to their partners.

6 DISCUSSION

HIV testing in pregnancy is the gateway to accessing care for the mother and the child. The intervention in prevention of mother-to-child transmission (PMTCT) of HIV can only be applied to a woman whose status is known. Therefore determining the HIV status of pregnant women is a key factor to the success of any prevention programme. Nowadays antiretroviral drugs for prevention of mother to child transmission (MTCT) of HIV infection become available in developing countries. For a pregnant mother to benefit from this intervention, she needs to know her sero-status. Voluntary HIV counseling and testing provides an opportunity to know her status and serve as an entry point to make decision on use of the intervention to reduce mother-to-child transmission of HIV infection.

In this facility based cross-sectional study conducted in Mekelle town Tigray region, the findings indicate that the acceptance rate for HIV testing among the married pregnant women was 78%. This is higher than from the report of FMOH which shown 50.3% of the pregnant women's were tested by the year 2007/08. And our result is not consistent with studies done in Tanzania, acceptance of HIV test and enrolment in the PMTCT program were lower in married or cohabitating women than single women, in women belonging to the minorities/marginalized segments, and in lower educational status (34). In other study that evaluated the acceptance of HCT by pregnant women in 14 urban sites in Africa and Thailand, the acceptance rate of HCT were high; median being 92% ranging from 77 to 99.7%. Over all acceptability of HCT (i.e. women coming for both test and result) was about 69 %(36). So in our finding this level of testing rate and receiving results shows that the respondents had increased acceptance. This might be due to the integrated services of PMTCT with other MNCH programmes of the health facilities gives an opportunity to get nearby the services and decrease missed opportunities of ANC attendants with in the health facilities.

One hundred seventy one (44.5%) of the respondents were in the age group 25-34 years. But unlike the studies conducted in Zambia and Tanzania in this study the age of the respondents were 2.5 more likely to accept HCT than the other age group. A study done in Zambia showed test rate were lowest among adolescents, while a study in Tanzania indicated old age were associated with decreased screening acceptance, which is also consistent with previous studies that showed

association of old age with both decreased and increased test acceptance (30,34). This might be due to the fact that the age group were exposed to pregnancy more than the other group and might lead them to different source of information and may influence to accept HCT.

Educational status was consistently found to be significant predictor of willingness and acceptance of HIV test in the studies conducted in rural and urban Uganda and in Ethiopia (27, 29).And the study done in western Amhara a pregnant women's who were informed about HIV/AIDS in their school while they were student are better in getting HCT for HIV. (43) But in our study were not found to be significant predictor of acceptance. And this is consistence with studies conducted in Nigeria and in Zambia (26, 30). And in one study done among pregnant women in Dar-es-salaam, Tanzania, higher level of education of the mother was associated with decreased acceptance of testing (31).

This might be as the level of awareness increase concerning HIV/AIDS; the fear of stigma and discrimination will increase as the result of this, they might not be wanted to know their status. So other detailed assessment should be done on this area. Besides Educational status was found to be highly associated with knowledge on masseurs taken by pregnant to prevent MTCT and self perception of being at risk of HIV. This is also consistence with the studies conducted in Nigeria and in Ethiopia (26, 29).

Regarding the monthly average incomes of the respondents those who had ≤500 Eth.Birr monthly average income were shown a likely hood [AOR (95%CI) 1.1(0.56-3.29)] to involve in the acceptance of HCT than those whose monthly income were >500 Eth.Birr. This is inconsistence with the study done in Armed hospital in Addis Ababa which showed that; increasing testing with increasing income of the household(29).And consistence with a study from Tanzania, which showed association of higher socio-economic status with significant increase in refusal of HIV testing. This might be due to the reasons that our participants might not tell us their correct average monthly income.

Majority were generally knowledgeable about the means by which HIV is transmitted and gave answers most participants for 87% sharp materials ,80.7% sexual intercourse , 18.2% due to infected blood and 4.4% by MTCT respectively. This is almost consistence with the PMTCT

baseline survey done in Ethiopia in Hareg project on April 2004; showed that unprotected sex 91.2% (n=821/900) and use of contaminated instruments 76.6% (n=689/900) were the most commonly reported modes of transmission(21). This study has indicated that the majority of our participants had knowledge of HIV transmission and protection. But still well below the global goal of ensuring comprehensive HIV knowledge in 95% of young people by 2010(1).

Perception of risk is a key indicator for better understanding and helping to change individual behavior. Majority of respondent 65.6% believed they were at risk for getting HIV. This is not consistence with the Ethiopia baseline Survey April, 2004 which showed that 68% of women (n=611/900) believed they were not at risk for getting HIV. In our study the reason mentioned by those women who did feel at risk for getting HIV were; there might be used unsterilized needle, did not use condom consistently, had multiple partners, due to uncertainty of their husbands response. And this is consistence with the reasons of the baseline survey of those women who did feel at risk (32%) for getting infected with HIV, believed they were at risk because they did not trust their partner/partner's behavior, due to accidents (contaminated instrument or sharp object) (21). This indicated us the participants as well as the community increase awareness on the risk factor of HIV/AIDS and its prevention.

Prevention of mother-to-child transmission of HIV is the major objective of introducing HCT services into the antenatal care setting. Majority (82%) of the antenatal care attendants had under gone individual pre-test voluntary counseling for HIV. This is inconsistent with the progress report of Ethiopia shown that; among those pregnant women visited ANC clinics; 53.2% received pretest counseling.(25) And consistence with the study done in Gambia, of 229 respondents, 92 % have done pre-test counseling while 8 % declined to go through the process (44).

Among the total respondents, 88.2% proceeded with HIV testing, while 253(74.6%) of respondents were tested during the current pregnancy and 87.2% of those who were voluntary tested subsequently received the HIV test result. And this is relatively the same with the study were done in April,2007 in west Amhara region where 67.3% of the respondents had under gone the process of voluntary counseling and testing for HIV 97.6% of them were tested for HIV and 94.8% of those who were tested received the test result (43). A more recent PMTCT study in Zimbabwe also demonstrated a high acceptance rate of routine (opt-out) HIV testing (99.9%)

compared with uptake of opt-in testing (65%) (42). Also other studies conducted in Zimbabwe from 2001 to 2003, in Malawi from 2002 to 2003 and in Barbados in 2002 among pregnant women found that more than 70% of the pregnant mothers counseled for HIV were tested. (23, 24). Other study was done on acceptance rates was between 53%-99.7% were reported from various sites in sub-Saharan African and in Lusaka, Zambia, also reported acceptance rates of between 72%-90% among antenatal clinic attendants (18). But in Ethiopia a progress report from January to December 2007, showed that among those pregnant women visited ANC clinics; 53.2% received pretest counseling and 34.8% were tested for HIV (25). This result shown us an improvement from the progress report of Ethiopia and may be the effect of different campaigns and community mobilization done by the region as well as over all by the government of Ethiopia in collaboration with different partners.

With regard to transmission of HIV from a mother living with HIV/ AIDS to the fetus (MTCT), Our finding shows that the overall knowledge regarding MTCT was high and 353 (91.9%) knew that a mother with HIV can pass the virus to her child. This is higher than the result of EDHS 2005 showed that, 69 percent of women and 75 percent of men know that HIV can be transmitted by breastfeeding. This is consistence with study in Gambia; the majority of the respondents (98%) knew that an HIV infected mother can transmit the virus to her baby (44). And also consistence with the study done in rural and urban Uganda showed that 325 (80%) knew that a mother with HIV can pass the virus to her child (26). But when we asked specifically, 95(24.4%), 87(22.7%) and 72(18.8%) had the correct knowledge that MTCT of HIV occurs during pregnancy, labor and breast-feeding respectively. And 35(9.1%) didn't know it. This is consistent with EDHS, 2005; twenty percent of women and 26 percent of men are aware of both aspects of MTCT transmission (35). And also lower than the study done in Nigeria, 70.6% of mothers of infants at a hospital believed that a mother can transmit HIV to her child while only 58% believed that a baby could be infected through breast milk(8).

Generally in this finding perception of MTCT were comparative with the above studies but there are a difference in our finding on the specific route of transmission with the study done among antenatal care attending Ghanaian pregnant women at two polyclinics in Accra, majority of mothers agreed that the virus could be transmitted during pregnancy (94%), delivery (91%), and breast feeding (86%). About 40% of the participants indicated that MTCT could not be prevented

and another 14% did not know how to curtail MTCT (37). So our respondents had knowledge when they asked spontaneously but less likely on the specific once and indicates us our health facilities and health worker should work hard on the disseminations of information to the community.

Our results show that majority of the pregnant women had knowledge of the modes of HIV transmission. Knowledge of specific aspects of MTCT such as the probability of transmission of the virus from mother to baby during pregnancy, delivery and breastfeeding were some what lesser. But on this study those who said the route of mother-to-child HIV transmission could be during pregnancy, delivery and during pregnancy and breastfeeding were found significantly associated with the acceptance of HCT. When adjusted for other factors the association between knowledge of MTCT and HCT acceptance was even stronger [AOR (95% C.I.)=0.07(0.01-0.62), (95%CI) =0.03(0.003-0.32) and (AOR (95%C.I) =0.03(0.001-0.46) respectively. Similar findings were also reported by a study from South Africa (38).This might be the result of frequently visiting the health facilities and exposed to different source of information.

The finding of our study also showed significant association between the number of antenatal visit and acceptance of prenatal HIV testing at (AOR (95%C.I = 0.14(0.02-0.79). Mothers who had three or more antenatal visits were more likely to be tested than those who had less visits. This is similar with the study done in Addis Ababa Armed force general hospital in 2005 women who attended at least two antenatal visits were more likely to take the test compared to those mother who attended less than two visit (29). This association between number of antenatal visit and acceptance of prenatal HIV testing might be explained that frequent exposure of mothers to information regarding HIV, MTCT and PMTCT during their follow up, made them to increase their knowledge on route of transmission and protection of HIV/AIDS and this might be influence the pregnant mother to take the test.

An important component of HCT programs is encouraging clients to inform partners of their sero-status. And respondents were asked the hypothetical question as to whether they will tell to their husbands or partners of their test result. In this study the majority of respondents 330(85.9%) indicated that discus freely about HIV testing with their husbands has significant association [(AOR (95%CI) = 7.1 (2.889-16.058)] with accepting of HIV testing. And 329 (85.7%)

respondents disclose their result to partner's and this is similar with the result of Gambian study, majority (97%) of the participating women would like to notify their husbands and or partners about their result (44).This might be a confirmation of the fact that they consider their husbands to be the most likely understood the advantage of PMTCT to their family. On the other hand, the women may consider their spouses as the primary source of psychological and social support. And disclosure of the HIV serostatus to the partner is crucial for the successful management of the present and future pregnancies. So disclosure is beneficial for most women. However, there is more to learn about, the complexities of disclosure, how to identify the small proportion of women who experience negative consequences of disclosure and understanding how women can be supported to disclose without negative consequences.

The majority of the pregnant women had heard of methods of PMTCT and of these, three hundred thirty nine (88.3%) knew at least one method of prevention of HIV transmission. Specifically, 185(48.2%), 105(27.3%) and 49(12.8%) mentioned that use of drug, avoid breast-feeding and both respectively. And 31(8.1%) didn't know any prevention method. This is inconsistence with EDHS 2005 which showed only slightly more than around one-fifth of women and one-fourth of men know that the risk of MTCT can be reduced through the use of certain drugs during pregnancy (35). And also inconsistent with the study done in northwest Ethiopia showed that; in a community-based survey on knowledge and attitude towards HCT on 992 residents, it was indicated that most of the interviewed individuals were lacking the correct knowledge on mode of transmission and prevention measures (40). And a study in Burkina Faso revealed that up to as much as 53% of pregnant women declared not to know the existence of MTCT risk, reminding the existence of wide knowledge gap (39).

But our finding were inconsistence with study of India; the total of 202 Indian women surveyed, 189 women (94%) had heard of HIV/AIDS and 60% of them had relatively good knowledge regarding risk factors for HIV transmission. However, 48% did not know that there are "means to prevent mother-to-child HIV transmission'' (7). The increment of our result might be due to the exposures of the participants to different means of information and this might be increase their knowledge on ways in which HIV can be transmitted from mother to child and the fact that the risk of transmission can be reduced by using antiretroviral drugs and the ability of respondents to discus freely with their partner.

Among the respondents three hundred and nine (80.5%) know the existences of PMTCT on the health facilities and seventy five (19.5%) didn't know the existence of the PMTCT. The sources of information mentioned by the pregnant women, many of them had multiple sources of awareness; namely, 46.4% from health facilities, 34.1% from mass-media 12.2% from school and 3.6% form their families. This is consistence with the study done in western Amhara which showed that the sources of awareness were health facilities (91.1%), radio (75.8%), friends (43.9%), and social ceremonies like "idir" (36.6%), relatives (34.6%), and school teachers during their school ages (34.4%), news paper (24.8%), and television (55.0%) (43). And also similar with the study done in Gambia, The major source of information of the pregnant mothers about of HIV, MTCT and PMTCT were health facilities, mass media, school and other (44). This indicates that the majority of respondent had got the information from the health facility and this might be duo to the fact that the health facility uses the opt-out programme. Even though most pregnant women in this study heard about HCT from different information sources, the source of information was not associated with acceptance of HCT. But in a study conducted in Hong Kong acceptance of HIV testing was strongly associated with access to information, that reported pregnant women who got information from one or two source were about 4 times more likely to accept the test than those who had no access to information, and those who had from three or more sources were associated with even higher acceptance (41).

Two hundred eighty eight (75%) mentioned the importance and advantage of PMTCT is for the mother and the baby, This is higher than a study undertaken in Ghana to assess the perception and attitude of 270 antenatal clinic attendants towards voluntary counseling and HIV testing, it was found that although 92.6% of respondents indicated a willingness to get tested; only 51% considered HIV testing for pregnant women to be useful (17). This perceived benefit might be the result of frequently exposing to health facilities and discussing freely and disclosing their test result to their partner.

The cornerstone of a successful PMTCT program is a high rate of HIV testing among pregnant women in order to identify those who are positive and at risk of transmitting the virus to their babies. And it is important to understand reasons given by study participants for not testing. In our finding the main reasons for refusal of HIV testing by those pregnant mothers were trust on God, self confident, husbands faithfulness, fear of stigma and discrimination, they do not want to know

their status , could not tolerate the positive result and because of uncertainty about the partners response on HIV testing result. And this were comparable with the study done in Addis Ababa hospitals that showed the reason for refusal were; inability to deal with stress if the result is positive, because of the uncertainty about the male partner's response on HIV testing, fear of rejection by the community and some did not know their exact reason. And also consistent with the study done in western Amhara showed that; most frequently stated reason by the discussants for avoiding counseling was fear to cope for self if positive for HIV; they better not know their statuses (43). And many other studies said they feared AIDS, other said that they would face discrimination by family and community and some lacked trust around confidentiality.

Other factors given that have been alleged to deter people from testing including; the belief that a person is outside the category of risk, lack of awareness about HIV infection rates in one's community, fear of being labeled and stigmatized by significant others, perception of the consequences of living with HIV and user friendliness of testing sites. Other study in east Ghana showed that; HCT acceptance by pregnant women varies greatly and is influenced by several factors including fear of disclosure of HIV results, stigma, discrimination, disempowerment, fatalism, accessibility of HCT services, or perceived lack of benefits (32).

So our finding were comparable with most of the studies done and this indicates that the factor associate with decreasing acceptance of HCT among the pregnant women's in Mekelle were still the excising influencing factor for accepting of HCT among the pregnant mother's. So in order to increase the acceptance rate PMTCT among the pregnant women; the most common reasons to refuse acceptance of HIV testing should be needed to discuss with partner about husbands faithfulness, fear of stigma and discrimination, why they do not want to know their status, how they can tolerate the positive result and how can avoid uncertainty about the partners response on HIV testing result.

7 STRENGTH AND LIMITATION OF THE STUDY

7.1 Strength

a) This study has a substantial contribution to determine the level of HIV counseling and testing, and identify various factors associated with services utilization of PMTCT. It may at large be a helpful to redesign programme implementation for scaling up of PMTCT service coverage.
b) The study can be eye opener and even a base line for further studies at a large scale and to spark new hypotheses as there is scarcity of other similar studies in the region, country and the horn of Africa that examined the level of utilization and reasons for refusal of pregnant women to participate in the PMTCT programs.

7.2 Limitations

a) Since the study is a facility-based study, selection (ascertainment) bias is likely to occur and may not be representative of the community at large.
b) Information (interviewer) bias is a possibility, although effort was made to keep it to the minimum by ensuring confidentiality and using new graduate BSc nurses as data collectors.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

- Increasing frequency of antenatal care visits had a major role in spreading information on HIV/AIDS, MTCT and is significant factors for increase of HCT acceptance in the study area. Therefore there is a need to increase ANC services utilization among pregnant.
- Pregnant women who knew MTCT as route of HIV transmission, and those who said the route of mother-to-child HIV transmission could be during pregnancy, delivery and during pregnancy and breastfeeding were found to be significantly more likely to have acceptance of HCT.
- Discussing freely about HIV serostatus with partner shows an association with the acceptance of HCT and this is crucial for successful management of the present and future pregnancies. Therefore; discussion and disclosure with partners are important for all pregnant women and can minimize the various stigma associated with HIV.
- Despite higher knowledge of HIV prevention still there are misconceptions influencing HCT/PMTCT uptake like as trust on God, self confidence, husbands' faithfulness, fear of stigma and discrimination, not wanting to know their status, difficult to accept the positive result and because of uncertainty about the partner's response on HIV testing result. Such factors affected acceptance of HCT among pregnant mothers.

8.2 Recommendation

At programme level

- Regional health bureau and zonal health office in collaboration with different partners working on HIV/AIDS should prepare and facilitate a community dialogue among the pregnant mothers how to discuss on most common reasons to refuse acceptance of HIV testing with partner.
- The result of our study indicates majority of the participants heard information about HIV/AIDS from the health facilities so; to increase acceptance rate of HCT the government, Regional health bureau and zonal health office should prepare more sources of

information to be accessed by all the families and community members to educate on HIV/ AIDS, MTCT and PMTCT issues.

At facility level

- The result of our study indicates as the ANC follow-ups increase the HCT acceptance increase .Therefore the health facilities should increase ANC services utilization and decrease missed opportunities among pregnant women to achieve the goal of reaching all pregnant women with HCT.

At community level

- Despite higher knowledge of HIV prevention still there are misconceptions influencing HCT/PMTCT uptake like as trust on God, self confidence, husbands faithfulness, fear of stigma and discrimination .Hence religious leaders, community leaders and other member of the society should play their role through awareness creation and sensitization activities to reduce the misconceptions of HIV infection among pregnant mothers.

Implications for further research area

- Additional research is also required on issues such as educational level and factors influencing the uptake of voluntary counseling and testing. And the consequence of discussing and disclosing their result with partners.

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10 ANNEX

Annex 1: Questionnaire English Version

Assessment of factors affecting acceptance of PMTCT service utilization among ANC clients in Mekelle town Tigray

Consent form that certify the respondents agreement before the interview

01. Town _____

02. Name of Health institution_____

03. Questionnaire Identification Number_____

Introduction: My name is ---------- I came from Addis Ababa University, Medical faculty, School of Public Health. I would like to inform you that you and I would have a short discussion concerning this study. Before we go to our discussion, I will ask you to listen carefully to what I am going to read to you about the purpose and general condition of the study and tell me whether you agree or disagree to participate in this study. I am interviewing pregnant mothers who follow their antenatal care at…….. (Name of the health institution) about factors affecting acceptance of PMTCT service utilization among ANC clients in this health facility, you are selected to be one of the participants in the study. The study will be conducted through interview. The information you give us will be kept confidential and will be used only for study purpose. A code number will identify every participant and no names will be used. If a report of the result is published, only summarized information of the total group will appear. The interview is voluntary and you have the right to participate, or not to participate or to refuse at any time during the interview. Your refusal will not have any effect on services that you or any members of your family receive. However, your participation is important to fulfill the study objectives and design appropriate PMTCT health services for Mekelle and other similar setups in the country.

Are you willing to participate in the study?

1. ( ) Yes 2 ( ) No

Thank you!!

If the study subject agrees to participate in the study, start the interview.

Interviewer signature certifying that the informed consent has been given verbally.

Name---------- signature---------- Date----------month----------2008

Checked by supervisor

Name ----------signature---------- date ----------

PI name Atsbha G/kidan Berhe Tele 0914750506 e-mail atsbhag@yahoo.com

Part I. Socio-Demographic Characteristics of Respondents

No	**Questions**	**Coding classification**	**Skip**
101	How old are you?	_____years	
102	What is your religion?	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5.Others(specify)_____	
103	What is your current educational status?	1. Illiterate 2. Primary 3. Secondary 4. Tertiary (above 12 grade)	
104	What is your current occupation?	1.House wife 2.Government employee 3.Merchant 4.Stundent 5. Un employed 6. Other(specify) _____	
105	What is your average house hold income per month	_____Eth Birr/Month 88. I do not know 99. Refuse to answer	
106	What is your current marital status?	1. Married ——————→ 2. Single 3. widowed 4. divorced 5 .separated	107
107	If married, are you currently living with your partner?	1. Yes 2. No	
108	How many times you have been pregnant including this pregnancy?	---------- Pregnancies	
109	How many living children do you have currently?	---------- Children	

Part II: Knowledge on HIV transmission, prevention, MTCT and PMTCT

S N	Questions	Coding classification	Skip
201	How does a person get infected by the HIV virus?	1. Sexual intercourse 2. Infected blood and blood products 3. By sharing sharps 4. Mother to child 88. I do not know 99. NO response	
202	How can one be protected against getting HIV?	1. Abstinence 2 Be faithful 3. Condom use 4. Other specify _____	
203	Can a pregnant woman with HIV or AIDS transmit the virus to her baby?	1. Yes 2. No → 88. I do not know 99. NO response	205
204	In what way can an infected pregnant woman transmit HIV to her un born baby?	1. During pregnancy 2. During labor and delivery 3. During breast feeding 88. I do not know 99. No response	
205	Do you know the existence of intervention that reduce mother to child transmission of HIV virus	1. Yes 2. No	
206	What can a pregnant women do to reduce the risk of transmission of HIV virus to her baby	1. Use antiretroviral drug 2. Avoid breast feeding 88. I do not know 99. No response	
207	Apart from the clinic today, where else have you heard about HCT in PMTCT services?	1 Clinic 2 Radio 3 Television 4 Newspaper 5 Family members 6 Others	

PART III-Personal risk perception

S. N	Questions	Coding category	Skip
301	Do you think you can get the virus?	1. Yes → 2. No → 88. I do not know 99..no response	302, 303
302	If the answer for Q301 is yes, what are the reasons?	1. I had multiple sexual partner 2. I had sexual contact with out condom 3. I had injection with un-sterile needle 4. I had sexual contact with HIV positive person 5. Other (specify) 88..I do not know 99. No response	
303	If your answer is NO to question number (301), what are the reasons?	1. I trust my sexual partner 2. No injection with un-sterile needle 3. I always use condom 88. I do not know 99. No response	

PART-IV: Attitude and practice to HIV and HCT service

S.N	Questions	Coding category	Skip
401	How many antenatal care visits do you have in current pregnancy including today's visit?	1. One 2. Two 3. Three 4. Four and above	
402	Did you get pre-test counseling during pregnancy?	1.yes 2.No	
403	Do you think HIV counseling and testing is important for pregnant women?	1.Yes 2.No 88. I do not know 99. No response	
404	I do not want to know the result but have you ever had an HIV test before?	1. Yes 2. No →	408
405	When did you have most recent HIV test?	1. With in the past one year 2. Between one and two year 3. Between two and four year 4. More than four year 88. I do not know 99. No response	

406	What is the reason for testing?	1. Marriage 2. To protect the child 3. To protect the partner 4. To know my status 5. Other(specify) 88. I do not know 99. No response	
407	Do you voluntarily under go the HIV test or w ere you requested by health worker t have the test?	1. Voluntarily 2. Requested 3. Other(specify)	
408	Do not tell me the result; do you know the result of your test?	1. Yes 2. No 99. No response	
409	What is the reason for not to be tested?	1. Fear of stigma and discrimination following positive result 2. Fear of partner reaction 3. Unable to cope with positive result 4. I am not risk person for HIV 5. Absence of HCT service in ANC center 6. Belief that test is not useful during pregnan 7. Not sure of confidentiality 8. I do not want to know my status 9. Partner trust 10. Self trust 11. Other(specify) 99. No response	
410	To whom do think that the test is of benefit during pregnancy?	1. Mother alone 2. To the baby alone 3. To both mother and baby 4. To partner alone 5. To the family 6. Health workers 7. Other(specify) 88. I do not know 99. No response	
411	Do you like to talk to your partner before having HIV test?	1. Yes 2. No 99. No response	
412	Do you like to tell your partner the result of an HIV test?	1. Yes 2. No 88 .I do not know	
413	If your answer is no why?		

Annexe 2: Questionnaire Tigrigna version

¨Ä!S ¨bÆ †NvRStE

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QD¸ MH¬T ÂY tˆ¬tE SMM:nT mrUgÉ! Q_>!

01 kt¥ _____

02 >M _:Â TµL _____

03 ÂY mHttE mFlY q$}¶ _____

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¨BtE }N›T NMS¬F f”dN D†)

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103	K#n¬T TMHRtE	1 ¨YtM¦Rk#N 2 MNÆBN M}^FN 3 1(8Y 4 µB9(12Y 5 L:l! 12	
104	K#n¬T S‰H	1 b›LtE ^ÄR 2 mNGStE s‰Ht¾ 3 nUÁ 4 tM¦¶T 5 m›L¬êE s‰Ht¾ 6 µLX	
105	B¥X,§Y wR¦êE XèT,! KNdY X†)	1_____QR¹! 88 ¨YfLõN 99 mLs! yBlYN	
106	K#n¬T ^ÄR	1 ZtmR›wT 2 ni§¼zYtmR›wT 3 Zä¬ 4 ZtÍt/T 5 B^d zYnB„	ÄB107 Y?lû
107	MS^ÄRk! ^b!R,#M TnB¶ ì)	1 Xw 2 ¨YÍl#N	
108	MS ÂY lÖ¸ ^êEs# mbL KNdY _Ns! X†)	_____Gz	
109	¨Bz! Hz! XêN KNdY öL;# ¨lW,!)	_____Gz	

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201	ˆd WLq sB B,mY x@C ¨Y v! Ktˆ Z YKXL)	1 Bò¬êE RKB 2 BZTbkl dMN ÂY dM W}x!T 3 Bb§?tE ng‰T 4 µB ¨ì ÂB :¹L 88 ¨YfLõN 99 mLs! yBlYN	
202	ˆd WLq sB x@C ¨Y v! kY?ø B,mY Yk§kL)	1 BM:”B 2 BMTXM¥N 3 ÷NìM BM_”M 4 µLåT YGli#	
203	Bx@C ¨Y v! wY x@DS ZtTˆzT ¨ì ÂB :¹§ ktmˆ§LF TKXL ì)	1 Xw 2 ¨Ytmˆ§LFN ⟶ 88 ¨YfL_N 99 mLs! yBlYN	ÂB205 Y?lû
204	Bx@C ¨Y v! ZtTˆzT nFsi#R ¨ì B,mY ÂBtE :¹L ktmˆ§LF TKXL)	1 ¨B Gz _Ns! 2 ¨B Gz HRs!N wl!DN 3 ¨B Gz M_ÆW 88 ¨YfLõN 99 mLs! yBlYN	
205	µB ¨ì ÂB :¹L x@C ¨Y v! kYˆLF WsÇ Sg#MtE¬T kMzlý TfL–! ì)	1 Xw 2 ¨YÍLN	
206	ˆNtE nFs i#R ¨ì x@C ¨Y v! ÂB W§Ä N,Yˆ LF XN¬Y KTgBR ¨lê)	1 mDˆn!T BM_”M 2 –#B BM<LµL 88 ¨YfLõN 99 mLs! yBlYN	
207	µB z! _:Â ÈBÃ wÉ›! QD¸ ?z! B²:Æ µB ¨ì ÂB :¹L NkYˆLF GbR MKLµL ¨bY¼BmN s¸:,!)	1 ¨B HKMÂ 2 BÊD× 3 Bt&l@v!™N 4 ¨B Uz@È 5 µB b@tsB 6 µLåT	

KFl! slSt B²:Æ ÂY WLq t”§:nT

301	x@C ¨Y v! K?zn! Y<XL X† TBl! ì)	1 Xw 2 ¨YÍl#N 3 ¨YfLõN	ÂB 303 ?lû
302	Xw XNtóYn# B,mY M<NÃT	1 µB ˆd N§:l! Slzln! 2 BzY ÷NìM RKB SlZF}M 3 BzYtqql mRFX SlZt-qM,# 4 µLåT 88 ¨YfLõN 99 mLs! yBlYN	
303	¨YÍl#N XNtóYn# B,mY M<NÃT	1 Æ›L b@tY SlZ¨Mñ 2 BzYtqql mRFX SlzY_qM 3 k#l# gz@ ÷NìM SlZ_qM 88 ¨YfLõN 99 mLs! yBlYN	

KFl! ›RÆ:t ÂY MMR¥R DLyTN ZNÆlN LMDN ZMLkT Hè

401	¨B z! ÂY Hz! _Ns! MS ÂY lÖ¸ ˆêEs# KNdY Gz tmR¸Rk!)	1 ˆd 2 KLt 3 slSt 4 L:l! ›RÆ:t	
402	¨B XêN _Ns! ÂY x@C ¨Y v! ÂY QDm MRm‰ MK¶ GLUlT r,!B,! TfL-! ì)	1.Xw 2.xYflN	
403	ÂY x@C ¨Y v! M<¶N MRm‰N NnFsi#R ¨ì Y-QM ì TBl!)	1 Xw 2 ¨YÍl#N	
404	W}x!T MRm‰,! KfL_ ¨YdLN GN QD¸ Hz! ÂY x@C ¨Y v! dM MRm‰ gYR,! TfL-! ì)	1 Xw 2 ¨YfL_N ⟶	408
405	ÂY mwÄX¬ ZtmRmRk#l# m¨Z X†)	1 ¨B Zˆlf ›mT 2 µB ˆd(KLt ›mT 3 L:l! 4 ›mT 88 ¨YfLõN 99 mLs! yBlYN	
406	NKTMRm¶ Zgbrk! MKNÃT	1 mR›	

	XN¬Y X†)	2 N:¹L NMKLµL 3 Æ›L g²Y NMDˆN 4 ÂY Æ:lY k#n¬T NMF§_ 5 µLX 88 ¨YfLõN 99 mLs! yBlYN	
407	ZtmRmR<× BmN X†)	1 BDLytY 2 Bˆk!M BTX²Z 3 µl!X	
408	W}x!T,! KfL_ ¨YdLN GN W}x!T,! TfL-! ì)	1 Xw 2 ¨YfL_N 3 µLX_____	
409	N,YTMRm¶ Zgb„,! M<NÃT XN¬Y X×M)	1 MG§LN M}ÃFN SlZf‰?,# 2 ÂY b›L g²Y Sg#MtE SlZf‰?,# 3 XtE ¨lk! ZBL W}x!T KÉãé SlzY<XL 4 Nx@C ¨Y v! Slzt”§:k,# 5 ¨B nFsi#‰T KTTL x@C ¨Yv! MK¶N MRm‰N GLUlÖT Slzyl 6 ¨B Gz _Ns! x@CxYv! MRM‰ _Q¸ SlzYBl# 7 MS-!R M?§ý SlZ-‰-R 8 ›RsY KfL_ SlzYdLY 9 Æ›L g²Y SlZ¨Mñ 10 ›RsY SlZt¨¥mN 11 µLX	
410	¨B Gz _Ns! ÂY x@C ¨Y v! dM MRm‰ MGÆR NmN Y-QM)	1 n¬ ¨ì _‰Y 2 ntE :¹L _‰Y 3 NKLtEåM 4 Nb›L g²Y 5 Nb@tsbY 6 Nb›L ÑÃ _:Â 7 µLX_____ 88 mLs! yBlYN	
411	QD¸ MRm‰ x@C ¨Y v! MFÉM,! MSb›L g²,! T¥,¶ ì)	1 Xw 2 ¨Y¥,RN	
412	DH¶ MRM‰ x@C¨Yv! W}x!T,! Nb›L g²,! TgL}l# ì)	1 Xw 2 ¨YgL}N	
413	¨YgL}N NMN¬Y) 1 YGlÉ 1. 2. 3. 4.		

Code No----------

ANNEX II QUETIONAIRE

Consent Form

School of Public Health, Faculty of Medicine Addis Ababa University.

Survey questionnaires on the role of men in fertility preference and contraceptive use among currently married men in Wolaita Soddo town, SNNPRG.

Client interview Greeting

My name is _____. I am working as a data collector in a research team (project), which is conducted by the Addis Ababa University School of public health. We are interviewing currently married men to know their role in fertility preference and modern contraceptive use and the general knowledge, practice and attitude towards family planning. I am going to ask you some questions that are not difficult to answer. Your name will not be written in this form and will never be used in connection with any of the information you tell me. You don't have to answer any question that doesn't want to answer and you may end this interview at any time you want to. However, your honest answer to these questions will help as in identifying the role of currently married men in fertility preference and contraceptive use and will enable us to design appropriate interventions or strategies. We would appreciate your help in responding to our questions. The interview will take about 45 minutes.

Consent obtained 1.Yes

2. No

Code No----------

Part I: - Socio- Demographic Characteristics of the Respondent

No	Questions	Responses	Code	Skip
101	Respondents age	_____ years		
102	What is your ethnicity?	1. Wolaita 2. Amhara 3. Gammo 4. Gurage 5. Silte 6. Oromo 7. Other, (specify) _____ 99,No response		
103	What is your religion?	1. Protestant 2. Orthodox 3. Catholic 4. Muslim 5. Traditional 6. Other, (specify)---------- 99. No response		
104	Educational status of respondent	1. Illiterate (can't read & write) 2. Can read and write (no formal grade) 3. Elementary school (1-6) 4. Junior high school (7-10) 5. Preparatory school (10-12) 6. Higher education 99. No response		
105	What is your main occupation	1. Jobless 2. Farmer 3. Government employee 4. Mass org. employee 5. Self employee 6. Student 7. Daily laborer 8. Merchant 9. Pension 10. NGOs. Employee 11. Other, (specify) _____ 99.No response		

106	Marital status	_____ 1. Monogamous marriage _____ 2. Polygamous marriage ----------99.No response		
107	How long you have been married	----------(yr)---------- month		
108	Wife Age	1,15-19 2.20-24 3.25-29 4.30-34 5.35-39 6.40-44 7.45-49 8 49+		

Part II Economic STATUS

No	Questions	Responses	Code	Skip
201	What is your monthly Income Birr	1. _____ Birr per month estimate 2. no any income 99.No response		
202	Who makes decision on the family wealth and asset	1. My self 2. My wife 3. both of us 4. my parents 5. my wife parents 6. other (specify) 99.No response		
203	Do you have radio /TV in your house	1. Radio only 2. TV only 3. Both Radio AND TV 4. None 99.No response		

Code No----------

PART III Reproductive History of Respondent

No	Questions	Responses	Code	Skip
301	How many living children do you have now	M ___F____		
302	Age at first marriage	-------years		
303	What would be the Number of children you desire in the Family	M ___F___ No response		
304	Have you Discussed with wife how many children in the future	1.Yes 2.No 3. No response		
305	Who has the greatest influence in deciding the number of children to have	1. Not applicable 2. Husband 3. Wife 4. Both 5. Kin 6. God 7. Others		
306	If you preferred to have another child how long would you take to wait before the birth of another child	1. ___ month 2. 2 to 3 years 3. 3 to 4 years 4. more than 4 years 5. don't want to wait 6.don't know		

Part IV Knowledge about Modern contraceptive

No	Questions	Responses	Code	Skip
401	Have you ever heard of FP methods	1.Yes 2. No 3. No response		

402	Do you know any methods that women and men can use to delay or /Avoid pregnancy	1. Yes 2. No 3. No response		
403	Which of the following contraceptive methods do you know about? (Read and encircle it)	1. Pill 2. IUD 3. Injectables 4.Implants 5.Condom 6.Spermicidal 7.Male sterilization 8.Female sterilization 9.Rhythm method or periodic Abstinence 10. Other (specify) ___ 11. No response		
404	Do you know what sterilization is vasectomy or tubal legation	1. Yes 2. No 3. No opinion		
405	Do you think that Vasectomy reduce sexual potency	1.Yes 2.No 3.No opinion 4.Don't know		
406	Where is the Main place that you and your wife partner as are able to get modern contraception's	1.Hospital 2.Health center 3.Health station 4.Community health post 5.FGAE clinic 6.Private pharmacy 7.Shop 8.Don't know 9.Other specify		

407	Have you ever head information about modern contraception	1. Yes 2. No 3. Un sure 4. No response		
408	If your Response to yes from where do you get information about family planning	1. Radio 2. Health professionals 3. Poster 4. News paper 5. Wife partners 6. Other (specify) 7. No response		

PART V Spousal Communication and attitudes towards Contraceptive use

	Questions	**Responses**	**Code**	**Skip**
501	Would you want to know more about contraception methods	1. Yes 2. No 3. No response		
502	Do you yourself approve or Disapprove of couple using methods of Family planning	1. Approve 2. Disapprove 3. Don't know 4. Other Specify		
503	If you disapprove why?	1.Respondent refusal 2.Wife/ partner Refusal 3.Family Disapproved 4.Religion prohibition 5.Culture don't aloud 6.Fear of side effect 7.Desire to have more children 8.Medical problem 9.Other (specify)-------		

504	Have you discussed about modern contraceptive with your wife/ partners with in the last one month	1. Yes 2. No 3. Don not know 4. No response		
505	If you say yes how many times	1,once 2.Twice 3.Many times 4.No answers		
506	Who decide on the method of Family planning to be used	1.My self 2.My wife 3.both of us 4.No response 5.Don't know		
507	Do you feel that using condoms reduces men sexual pleasure	1. Yes 2. No 3. No opinion 4. Don't know		
508	Do you approve or Disapprove Men sterilization (vasectomy)	1. Approve 2. Disapprove 3. Undecided 4. Don't know		
509	Do you feel that too long a family size strains the families economic situation	1.Strongly Disagree 2.DisAgree 3.Neutral 4.agree 5.strongly agree		
510	Do you Imagine that a large family moves a happy home	1.Strongly disagree 2.DisAgree 3.Neutral 4.agree 5.Strongly agree		

511	Too many children are often harmful to the health of the mother	1.Strongly disagree 2.DisAgree 3.Neutral 4.agree 5.Strongly agree		
512	Family planning practice improves trust between husband and wife	1.Strongly Disagree 2 Disagree 3.Neutral 4.agree 5.Strongly agree		
513	Men should share family planning practice in the family	1.Strongly Disagree 2 Disagree 3.Neutral 4.agree 5.Strongly agree		

Part VI practice of modern contraceptive

No	Questions	Responses	Code	Skip
601	Please tell me to which group does you or your wife belongs with regard to method of contraceptive use?	1. Current user 2. ever user 3. Non users 4.other (specify) 5.No response		
602	What is the method do you use currently?	1.Pill 2.IUD 3.Injectables 4.Implants 5.Condom 6.Spermicidal 7.Male sterilization		

		8.Female sterilization 9.Rhythm or periodic Abstinence 10.Other (specify)-------- 11. No response		
603	If you currently using the contraceptive methods for what purpose	1. birth spacing 2. limiting birth 3. don't know 4. other (specify)--------- 5. No response		
604	Who usually in the family make the decision whether to practice family planning or not	1. Respondent 2. wife 3. Both 4. Our friends 5. our parents 6. other (specify) 7. No response		
605	If you were not using any contraceptive method to delay or avoid pregnancy would you tell me the main reason	1.Respondent opposed 2.wives opposed 3.Relative opposed 4.knows no methods 5.knows no source 6.health concern 7.fear of side effects 8.to have more children 9.Inconvenient to use 10.Religious prohibition 11.cultural problem 12.Fear of infertility 13.No response		

Code No----------

Part VII

Questions that examine stage of change for behavior change for contraceptive use.

NO	Questions	Responses	Code	Skip
701	Is your wife currently using contraception	1. yes 2. No		If No Skip to Q703
702	How long has your wife been using contraception?	1.<6 month 2. >6months		
703	Are you (your spouse) thinking about using contraception in the next 06months	1. Yes 2. No		
704	Do you (your spouse) plan to use contraception in the next 30 days	. 1.yes 2. No		