

PREDICTORS OF HIV COUNSELING AND TESTING AMONG PREGNANT
WOMEN ATTENDING ANTENATAL CARE SERVICE AT BUTAGIRA AND
ATAT HOSPITAL IN GURAGE ZONE, SOUTHERN ETHIOPIA.

BY

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ABSTRACT

Background: Due to under utilization of client-initiated HIV testing, the revised world health organization policy statement on HIV testing recommended provider-initiated HIV testing. The national prevention of mother to child transmission guideline in Ethiopia recommends HIV counseling and testing as a routine care for pregnant women. However, the acceptability of this approach and determinants has not been well studied using strong study designs and few available studies are cross-sectional.

Objective: The objective of this study was to assess predictors of acceptance of HIV testing among pregnant women attending antenatal care service at Butagira and Atat Hospitals, Gurage Zone, South Ethiopia.

Method: A case-control study was conducted among 327 pregnant women in Butagira and Atat Hospitals from February 18-March 25, 2011. The sample size was allocated to each Hospital based on the number of pregnant women visiting the hospitals. Subjects were identified based on the information obtained from the client card and the client's information about whether they were tested or not. Two controls were selected, consecutively immediately after one case was identified and interviewed. Data were collected by face to face interview method using a structured and pre tested questionnaire. Data were edited, coded, entered, cleaned and analyzed using SPSS version 16. Multiple logistic regressions were fitted to identify independent predictors HIV testing acceptance.

Result and Conclusion: knowledge on HIV transmission, almost equal proportions, 95.9% of the acceptors and 96.3% of non-acceptors mentioned sexual contact, 88% of acceptors and 87% of non-acceptors mentioned that contaminated blood and blood product and 94.5% of acceptors and 90.8% of non-acceptors contaminated sharps as a main route of HIV transmission respectively. However, Mother to child transmission (MTCT) was mentioned by relatively lower proportion of acceptors and non-acceptors of HIV testing (49.5% and 38.5% respectively).

In this study women also asked about the time when MTCT could occur, most acceptors and non-acceptors of HIV testing mentioned transmission of the virus during pregnancy, delivery and breast-feeding. Regarding to intervention to reduce MTCT, about 89% of acceptors and 92% of non-acceptors mentioned use of antiretroviral drug and 88.5% of acceptors and 86% of non-acceptors mentioned avoidance of breast-feeding as a means of reducing MTCT.

In this study also Living with husband at same place, MTCT as a route of HIV transmission, number of antenatal care visits of greater than two, perceived risk of acquiring HIV, know existence of intervention that reduce MTCT were found to have positive effect on the acceptance of HIV testing.

Recommendation. Agencies should give intensive and continued education, to both pregnant mother and their partners, about prenatal HIV transmission, the role of HIV counseling and testing on the prevention of mother-to-child transmission of the virus, and about the existence of intervention that reduce the possibility of prenatal transmission of the virus, with special emphasis to those couples who live apart.

Keywords: acceptance, HIV testing, pregnant women

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ABBREVIATIONS / ACRONYMS

AH:	Alternative Hypothesis
AIDS:	Acquired Immuno-Deficiency Syndrome
ANC:	Antenatal Care
AOR:	Adjusted Odd Ratio
ART:	Antiretroviral Therapy
COR:	Crude Odd Ratio
EDHS:	Ethiopian Demographic and Health Survey
EPHA:	Ethiopian Public Health Association
FGD:	Focused Group Discussion
FHAPCO:	Federal HIV/AIDS Prevention and Control Office
HCT:	HIV counseling and testing
HIV:	Human Immunodeficiency Virus
HO:	Null hypothesis
KAP:	Knowledge Attitude and Practice
MTCT:	Mother to Child Transmission
OR:	Odd Ratio
PMTCT:	Prevention of Mother to Child Transmission
SPSS:	Statistical Package for Social Science
UNAIDs:	United Nation program on AIDS
VCT:	Voluntary Counseling and Testing
WHO:	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.1 Background

Human Immunodeficiency virus/Acquired Immuno-deficiency Syndrome (HIV/AIDS) has become a serious threat to the country's development and constitutes a significant public health problem. The pandemic has killed millions of people through out the world since it was first described in the early 1980s. In 2007, approximately 33 million people worldwide were infected with the human immunodeficiency virus (HIV). Sub-Saharan Africa remains the most affected region in the world and it is home to almost 67% of all people living with HIV (an estimated 22.5 million). In the same year, an estimated 1.7 million adults and children in Sub-Saharan Africa became newly infected, while 1.6 million died of acquired immune deficiency syndrome (1, 2).

According to the most recent national estimates, over one million people were living with the virus in Ethiopia in 2008, and HIV prevalence is estimated at 2.2% (7.8% urban and 0.9% rural). Women and children constitute the groups most affected by the pandemic. About 59% of people living with HIV in the country are female, 68,136 children under the age of 15 years are living with the virus, 79,183 pregnant women are positives and 14,093 positive births are expected to occur from those positive pregnant mothers (2).

HIV can pass from mother to children during pregnancy and child birth as well as at the time of breastfeeding. Without treatment, transmission occurs in 15% to 25% of pregnancies in non breastfeeding HIV infected women (3).

The reduction of MTCT of HIV is a true challenge in efforts to control the HIV pandemic, but recent progress in the identification of effective treatments provides some hope. Interventions to reduce the risk of mother-to-child transmission of HIV in areas where antenatal testing programmes are not in place will require a large degree of preparation to ensure that infected women are appropriately identified and understand the benefits of treatment (4). Studies have

shown that treatment with zidovudine can significantly reduce the rate of vertical transmission of HIV (5).

Reducing HIV infection in infants and young children requires a comprehensive approach. Access to comprehensive maternal, newborn and child health service is central to efforts to reduce HIV infection in infants and young children. Reducing the number of infants infected with HIV by preventing HIV infection in reproductive age women and preventing unintended pregnancy among women infected with HIV could both decrease the proportion of infants infected by 35% to 45% in many countries. The prevention of HIV transmission from HIV infected women to their offspring alone will reduce HIV infection in children by between 2% and 12% (3).

HIV counseling and testing has been shown to have a role in both HIV prevention and for people with HIV infection; as an entry point to care. HIV counseling and testing provides people with an opportunity to learn and accept about their sero-status in confidential environment. Pregnant women who are aware of their status can prevent transmission to their infant (MTCT). However, many people still do not know their HIV status (6, 7). Despite the presence of high male/husband migration to bigger towns and high risk of HIV/AIDS infection in the Gurage zone, research on determinant factors for acceptance of HIV testing among pregnant women particularly in the zone is non-existent.

1.2 Statement of the problem

Women of childbearing age now represent the majority of HIV-infected individuals worldwide. Children also can become infected with HIV through the same mode as those by which adults are infected. HIV-infected pregnant woman can infect her baby during pregnancy, during labor and delivery, or after birth through breast-feeding. The risk of infection is now thought to be 5-10% percent during pregnancy, 10-20% during labor and delivery, and 5-20% during breast-feeding (8).

Reducing HIV infection in infants and young children requires a comprehensive approach. Access to comprehensive maternal, newborn and child health service is central to efforts to reduce HIV infection in infants and young children (3).

Voluntary HIV counseling and testing has been carried out in many places with excellent results, it is cost-effective and a gateway to most HIV related services including provision of antiretroviral drugs. However, in most sub-Saharan African countries, many people still don't know their HIV status (9). Seventy five percent (75%) of pregnant women know their HIV sero-status as described in one cross-sectional study done in Wolayita zone, Ethiopia (10).

Due to under utilization of client-initiated HIV testing, the revised UNAIDS/WHO policy statement on HIV testing recommended that provider-initiated HIV testing should be implemented in clinical settings. Pregnant women are one of the target populations for the provider-initiated counseling and testing (7). The world health organization has, therefore, incorporated routine counseling and testing as a component of PMTCT. Subsequently, the national PMTCT guideline in Ethiopia recommends HIV counseling and testing as a routine care for pregnant women (11).

HIV counseling and testing for pregnant women is a starting point for instituting a mother to child transmission prevention program. This strategy promotes adequate treatment for HIV positive women and has a positive impact on mother-to-child HIV transmission rate and serves as an entry point to care and support. For HIV negative women it provides opportunity for education and behavioral change. It can also serve as a powerful incentive to adopt safer sex practices, discuss family planning and encourage partner testing (12,13). However, the acceptability of this approach and determinants has not been well studied and few available studies are cross-sectional. Therefore, identifying factors that determine the acceptance of HIV testing is key step to design and implement interventions that increase the acceptance of HIV testing.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview of Mother to Child Transmission of HIV (MTCT)

The MTCT is the most significant source of HIV infection in children under the age of 15. Since the beginning of the pandemic, more than 3 million children have died before their 15th birthday (14, 15). In 2007 alone, 330 000 children below the age of 15 died and the new infections in 2007 were 420 000. Ninety percent of them have been born in Africa (16). MTCT occur during pregnancy, labour and delivery, or through breastfeeding. Without treatment, the risk of MTCT is estimated at 5-10% during pregnancy, during labour, delivery and through breastfeeding is at 10-20% (17).

For Prevention of Mother to Child Transmission of HIV, WHO recommends four strategic approaches: 1) Primary prevention of HIV in women of reproductive age, 2) Prevention of unintended pregnancy in HIV infected women, 3) Prevention of MTCT through the use of antiretroviral therapy (ARV) drugs and other practice, 4) Provision of comprehensive care to HIV infected women, partners and children (18).

Recognizing the severity of the HIV pandemic, the Ministry of Health in Ethiopia launched Prevention of Mother to Child Transmission of HIV (PMTCT) services in hospitals and health centers of the country. In the PMTCT program, pre-test, post-test and ongoing counseling is offered to all pregnant women.

2.2 Knowledge about HIV, MTCT and PMTCT

In a study investigating knowledge and awareness of HIV/ AIDS among pregnant women in Maharashtra State, (India) about 81% of the 269 study subjects heard about sickness called HIV or AIDS. When asked ways of spread 54% reported they did not know, 39% reported that sexual contact, 18% mentioned through injection, and 8% through blood, 4% mentioned commercial sex workers and only one person said from mother to child. The study reported that education played the most important role on the knowledge about HIV/AIDS (19). Among antenatal care attending Ghanaian pregnant women at two polyclinics in Accra, less than 3% of them

spontaneously mentioned MTCT as an HIV transmission route, when prompted. Majority of mothers agreed that the virus could be transmitted during pregnancy (94%), delivery (91%), and breast feeding (86%). About 40% of the participants indicated that MTCT could not be prevented and another 14% did not know how to curtail MTCT (20).

The 2005 Ethiopian Demographic and Health Survey data mentioned that 69 % of women and 75% of men know that HIV can be transmitted by breastfeeding, and only 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. 20% of women and 26% of men are aware of both aspects of MTCT transmission (21).

A study conducted to assess factors affecting acceptance of HIV testing among antenatal care attendees in Wolayita zone indicated that 67% of the pregnant women mentioned MTCT as a means of HIV transmission. Only 49.1% and 26.5% knew at least two and all the three timings (pregnancy, labor and postpartum) of MTCT respectively. More than one third of respondents (38%) did not know what measures an HIV positive pregnant women could take to prevent MTCT; 37% said that she could take ART, 54% by avoiding breastfeeding, and 7% mentioned safe delivery service a means of PMTCT (12). Institution based cross-sectional study conducted in Mekelle zone, North Ethiopia to assess KAP towards prevention of mother to child transmission of HIV among antenatal care mothers mentioned that 94% knew that MTCT of HIV could be prevented, 91% mentioned by abstaining from breastfeeding, 59% by giving prophylactic ant-retroviral drugs 3% cesarean section delivery (22).

A Case-control study conducted in Army Hospital, Addis Ababa, Ethiopia, to identify factors associated with VCT uptake among pregnant women found that about the time when MTCT could occur, most acceptors (case) and non-acceptors (control) of VCT mentioned transmission of the virus during delivery (83%, 72%) and breast-feeding (96%, 92%). Lower proportion of acceptors (39%) and non-acceptors (25%) mentioned that MTCT occur during pregnancy (23).

2.3 Acceptance of HIV testing among pregnant women

Knowing one's HIV status may prepare one to make an informed decision about whether or not to become pregnant. This in turn plays a pivotal role in the prevention of mother to child transmission of HIV. Health workers should encourage the general population, particularly women of reproductive age, to make use of HCT services. Women who test HIV negative should be encouraged to remain negative. Primary prevention services particularly during pregnancy and lactation must be made readily available, since any new HIV infection during these stages greatly increases the risk of MTCT (24, 25).

A cross sectional study done in the Kilimanjaro region of Tanzania, which was guided by the conceptual framework of the Health Belief Model, to identify factors associated with pregnant women's expressed willingness to accept voluntary counseling and HIV-testing mentioned that 41.7% of women has willingness to accept HIV counseling and testing. Perceived high personal susceptibility to HIV/AIDS, barriers related to confidentiality and partner involvement, self efficacy regarding alternative feeding methods and religion were all shown to be associated with willingness to accept voluntary counseling and HIV testing (26). A study conducted in Bushenyi district, Uganda to estimate the proportion of pregnant women who undertake voluntary HIV counseling and testing found that thirty-eight (17%) of 219 people interviewed had ever undergone HIV testing. The factors influencing counseling and testing for HIV were the consequences of a test result, influence of a sexual partner, the cost of HIV testing, physical accessibility of counseling and testing, awareness and risk of HIV infection (27).

A cross sectional study conducted in Wolayita zone, Ethiopia to assess factors affecting acceptance of HIV testing among antenatal care attendees found that 75% the pregnant women were accepted HIV testing but the rest 25% did not accept. The reasons for pregnant mothers' refusal of HIV testing were stigma and discrimination by the community (81%), husbands' reaction (75%) and fear of positive test result (73%) (12).

A case control study conducted in DilChora Hospital, Dire Dawa, Ethiopia to assess determinants of acceptance of voluntary HIV testing among antenatal care attendees found that knowledge on HIV/AIDS, MTCT and HIV testing; attitude towards HIV testing, marital status, and attendance of ANC follow up and perception of mothers on benefits of HIV were found to

be independent predictors of the acceptance of HIV testing (28). A similar study done in Addis Ababa, Ethiopia mentioned that pregnant women who know existence of intervention that reduce mother-to-child transmission of HIV were about 3 times more likely to be tested than those who were not aware of intervention to reduce MTCT (23).

A case control study conducted in Arba Minch Town, Southern Ethiopia to assess factors affecting acceptance of HIV testing among antenatal care attendees found that acceptance of HIV testing was almost 4 times more in those pregnant women who had two or more ANC visit compare to their counterpart, and the acceptance was 3 times more in those pregnant women who had attended primarily level of education (29).

2.4 Impacts of HIV Counseling and Testing

HIV counseling and testing has been shown to have a role in both HIV prevention and for people with HIV infection; as an entry point to care. HIV testing provides people with an opportunity to learn and accept about their sero-status in confidential environment. Pregnant women who are aware of their status can prevent transmission to their infant (MTCT) (30).

People have a right to know their HIV status, and testing and counseling should be widely accessible through innovative, ethical and practical models of delivery. Potential benefits for the individuals and communities cannot be realized unless people are able to know their sero-status. For individuals it initiate and maintain behaviors to prevent acquisition or further transmission of HIV by Early access to HIV specific care, treatment and support; access interventions to prevent MTCT; better cope with HIV infection and plan for the future. For the community it has benefits like, Reduce denial, stigma and discrimination that surround HIV/AIDS and mobilize support for appropriate response (31).

2.5 Conceptual framework for acceptance of HIV testing

This conceptual framework is developed based on similar literatures (23, 29).

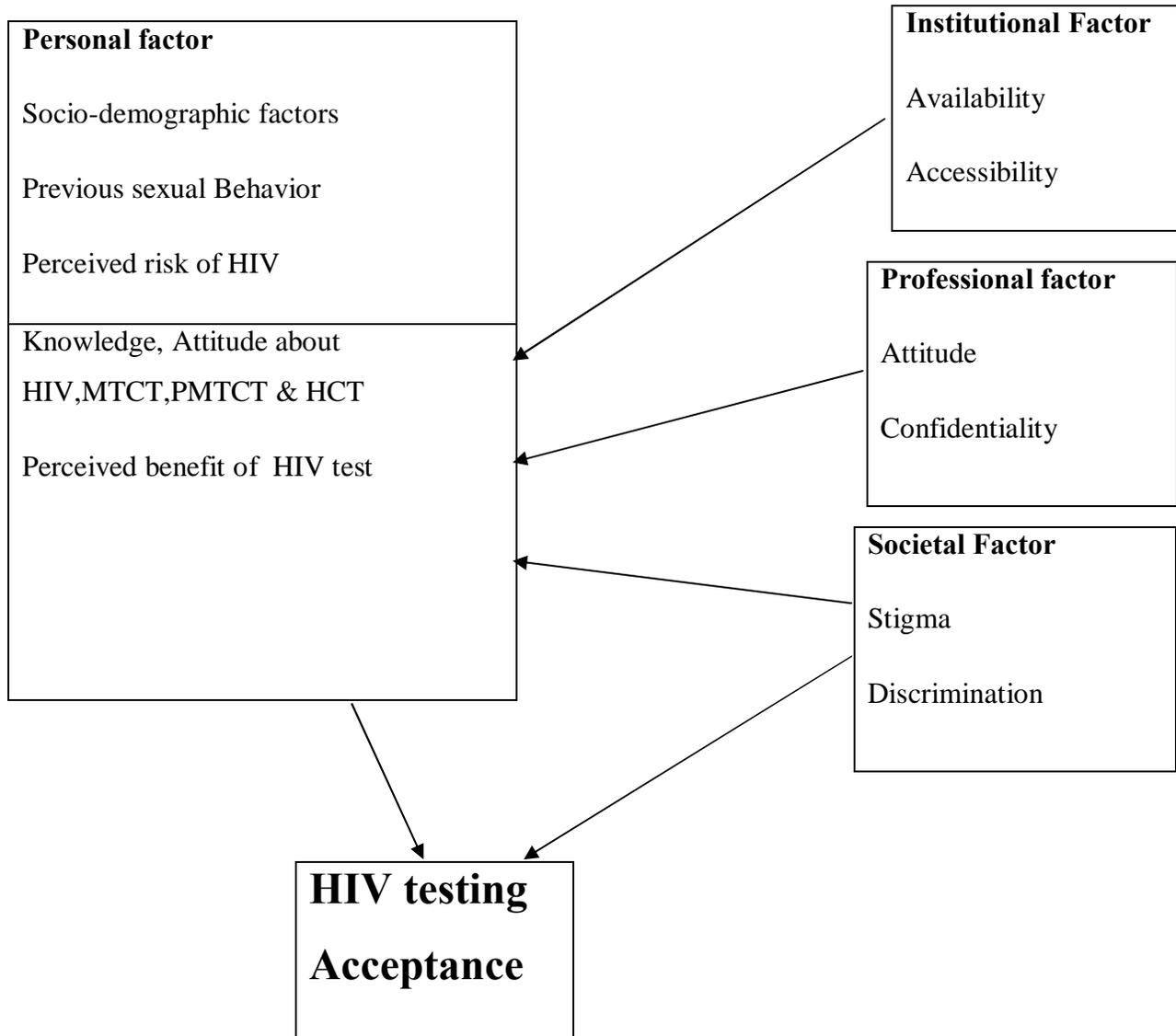


Figure 1: Conceptual framework of factors affecting acceptance of HIV testing among ANC attendants in Butagira and Atat hospitals, Gurage Zone, 2011.

Significance of the study

There are several possible contributing factors that must be addressed if HIV counseling and testing is to have an important role in HIV prevention and care. Factors that influence acceptance or refusal for counseling and testing could be characterized as socio-demographic, cognitive and behavioral, and organizational of the counseling and testing service delivery; as it is described in figure above (32).

Examining and understanding factors that influence HIV testing acceptance is needed to facilitate HIV prevention effort in the country in general and in Guraghe Zone in particular. However, there is lack of such studies in the Zone. Therefore, the purpose of this study is to identify determinant factors for HIV counseling and testing among pregnant women visiting Hospitals in Gurage Zone.

The findings of the current study used for decision -makers, planners and stakeholders working in the HIV prevention and control programs and also might have contribution for the National Shared Vision to See HIV Free New Generation By 2020.

CHAPER THREE

OBJECTIVES AND HYPOTHESIS

3.1. General objective

To assess predictors of acceptance of HIV testing among pregnant women attending antenatal care service at Butagira and Atat Hospital, Gurage zone, South Ethiopia, 2011.

3.2 Specific Objectives

To determine Socio-demographic factors associated with the acceptance of HIV testing among pregnant women

To assess knowledge, attitude (about HIV, MTCT and PMTCT) and reproductive related factors associated with acceptance of HIV testing.

To identify independent predictors of HIV testing acceptance among pregnant women.

3.3 Hypothesis

HO: Socio-demographic factors, knowledge and attitude towards HIV, MTCT and PMTCT; Personal risk perception; knowledge and attitude towards HIV Counseling and Testing and its benefit, institutional, professional and societal factors, has no effect on mother's acceptance of HIV testing.

HA: Socio-demographic factors, knowledge and attitude towards HIV, MTCT and PMTCT, Personal risk perception, knowledge and attitude toward HIV Counseling and Testing and its benefit, institutional, professional and societal factors, has effect on mother's acceptance of HIV testing.

CHAPTER FOUR

METHODS AND MATERIALS

4.1 Study Area and period

The study was conducted at Butagira and Atat hospitals which are found in Gurage zone, located in the western part of southern Ethiopia. The zone is bounded with Silite zone and Hadiya zone in the south and Yem special woreda in South west. The northern, western and eastern portions are sharing boarder with Oromia state.

The zone has an area of 5932 sq.km. For the purpose of administration, the zone has been divided in to thirteen woredas (districts), two provisional city administrations. The total population of the zone is estimated to be 1,280,483 in 2007 having distribution of 622,254 male and 658,229 female with, percentages of 48.6 and 51.4 respectively (33). The overwhelming majority, 90.5%, lives in rural areas leading an agricultural life. The study was conducted from February 18-March 25, 2011.

4.2 Study Design

Unmatched case- control Study design was used.

4.3 population

4.3.1 Source population

The source populations were all pregnant women visiting Butagira and Atat hospitals for ANC service.

4.3.2 Study population

Study populations were selected cases and controls in the Hospitals. Cases were pregnant women who refused HIV testing and Controls were pregnant women who accepted HIV testing in the current pregnancy, during data collection period.

Inclusion criteria

Pregnant mothers who had HIV counseling in the current pregnancy.

Exclusion criteria

Those who were unable to communicate for different reasons like, illness.

4.4 Sample Size and Sampling procedure

4.4.1 Sample size determination

Sample size was determined using the formula (Epi-Info software version 3.4.3) for the difference between two population proportions by considering one variable assumed to bring difference in two groups.

$$n1 = \frac{[z \alpha/2 \sqrt{(1+1/r) pq} + \underline{Z\beta} \sqrt{p1q1 + p2 q2}]^2}{(P1-p2)^2}$$

Where:

n1=the sample size for case

Z /2= critical value =1.96

1- = power of the study = 80%

p1= estimated exposure among cases

p2= estimated exposure among control

p = pooled estimate of p1 and p2

r = ratio of n2 to n1

In this study knowledge of PMTCT was the variable used to calculate the sample size with estimated exposure among control 16% and 5% assuming among cases (23) with 95% confidence interval and 80% power. Ratio between controls and cases was fixed at 2:1.

Accordingly, the required sample size was calculated to be 327 with 109 were cases and 218 were controls.

4.4.2 Sampling procedure

The sample size was allocated to each Hospitals based on the number of pregnant women visiting the hospitals. On average 16 pregnant women were visiting both Atat and Butagira hospitals per day. The study participants were identified based on the information obtained from the client card and the client's information about whether they were tested or not. Cases and controls were selected from the institutions consecutively. Two controls were selected consecutively immediately after one case was identified and interviewed. The procedure was continued throughout the data collection period until the required sample size was achieved.

4.5 Study Variables

4.5.1 *Dependent variable*

Acceptance of HIV testing

4.5.2 *Independent variables*

Personal factors

Age

Educational status

Partners residence

Marital status

Occupation

Income

Ethnicity

Religion

Gravidity

Mother residence

Number of ANC visits

Knowledge and attitude about HIV, MTCT PMTCT and HIV testing

Perceived benefit of HIV counseling and testing

Perceived risk of HIV

Institutional factors

Availability of services (interventions)

Accessibility

Professional factor

Attitude

Confidentiality

Societal factor

Stigma and discrimination

4.6 Data collection instruments

The questionnaire was developed in English after reviewing similar literatures (12, 23, 28 & 29).

The questionnaire has 4 parts: questions were put together in the following headings.

Part one: Socio-demographic information

Part two: knowledge and attitude towards HIV, MTCT and PMTCT

Part three: Personal risk perception about HIV

Part four: HIV Counseling and Testing, stigma and discrimination, attitude and confidentiality about HIV testing.

4.7 Data Collection method and data collectors

4.7.1 Quantitative data collection

Data was collected from study participants by face to face interview method, using pre-tested structured questionnaire. Data collectors were female diploma nurses who were working in the selected institutions and who could speak Amharic and English and Guragigna language from the selected health institutions were recruited and trained for two days on the study instrument and data collection procedure. The reason selecting nurses for data collection working in same organization is to keep confidentiality of the participants and to reduce non-response bias. One health officer and one BSc nurse were assigned as supervisors at each health facility. The responsibility of the data collectors was to fill questionnaires after obtaining verbal consent of the subjects. The supervisors provide all items necessary for data collection on each data collection day, checking filled questionnaire for completeness, solve problems raised during data collection.

4.8 Data Quality Assurance

The structured questionnaire was developed in English and translated into Amharic version by individuals assumed who could speak and know the language well and again back to English so as to insure its consistency. The questionnaire was pre tested (10% participants) and correction was made accordingly. Two days training was given to data collectors and supervisors on questionnaire and sampling procedures and skipping pattern, 30% the collected data was reviewed by principal investigator, problems faced in the time of data collection was discussed and immediate solution was made. Data entering was started in the field and checked for completeness.

4.9 Data analysis and interpretation

Data was edited, coded, entered into computer, cleaned and analyzed using SPSS version 16. Descriptive analysis was done to assess basic client characteristics. Bivariate analysis was done to assess if there is association between the outcome variable and each explanatory variable. Odds ratio with 95% confidence intervals and p-value was computed to assess the presence and degree of association between dependent and independent variables and compared results between case and control according to the objectives. To identify independent predictors of HIV

testing acceptance multiple logistic regressions was employed. Backward stepwise logistic regression method was used to fit variables in the final model and variables with a probability greater than 0.05 were deleted.

4.10 pre test

The questionnaire was pre-tested on pregnant mothers (10% of the sample size i.e. 33 individuals from which 20 were controls and 13 were cases) in the study sites that weren't included in the study, finally correction was made accordingly.

4.11 Ethical Consideration

Ethical clearance and permission was obtained from ethical clearance committee of Jimma University, college of public health and medical sciences. Again permission was obtained from Gurage Zonal Health bureau and representatives of the respected Hospitals to access the facilities. The respondents were informed about the objective and the purpose of the study and the verbal consent was taken from each respondent. Respondents were made to participate based on their willingness and those who were not willing to participate were given the right to do so. Verbal consent was taken from each respondent & Confidentiality of information was secured. The research team or other participants didn't directly share the gathered information in a way that would reveal an individual's personal identify.

4.12 Dissemination plan

The result of the current study will be presented to Jimma University scientific community as part of MPH thesis. The report will be provided to Gurage zone health bureau and other agencies engaged with HIV prevention and care and support program in the zone. The report will also be provided to Department of Epidemiology, College of Public Health and Medical sciences, Jimma University. Finally efforts will be made to publish results in national and international journal for dissemination worldwide.

4.13 Operational definition and definition of terms

Acceptance of HIV testing: - uptake of HIV testing by pregnant women after counseling.

Acceptors:-Pregnant women who had HIV counseling and accepted HIV test in the current pregnancy.

Non-acceptors:-Pregnant women who had HIV counseling but refused to take the test during the current pregnancy.

HIV Counseling: - a confidential dialogue between a person and care provider aimed at enabling the person to cope with stress and make personal decision to take the test.

Gravidity: the number of pregnancies (completed or incomplete) experience by a woman.

Knowledge: Information stored in the memory related to HIV /AIDS and Mother to Child Transmission.

Attitude: - Predisposition to respond in favorable or unfavorable manner towards HIV/AIDS and HIV counseling and testing.

Perceived benefit: - out come expectation from taking HIV test.

Risk perception for HIV/AIDS: - Respondents feeling of vulnerability for HIV/AIDS.

CHAPTER FIVE

RESULTS

5.1 Description of study participants

In this study a total of 327 pregnant women attending antenatal care service in Butagira and Atat hospitals were included. Among the participants, 218 were acceptors of HIV testing and 109 were non-acceptors of HIV testing. The mean age of pregnant women among acceptors was 26.9 years (SD \pm 5.2) and 29.0(SD \pm 5.6) years for non-acceptor respectively. Relatively most of the acceptors as well as non-acceptors of HIV testing were age between 25-29 (32.6%, 27.5%) and 30-34 (27.5%, 30.3%) years respectively. Gurage ethnic group comprises the largest proportion of the study subjects (82.6% vs. 80.6%). The data also shows that 61% of acceptors and 58.7% non-acceptors were from rural and urban residence respectively. Muslim religion comprises the largest proportion of the study subjects (54.6% of acceptors and 40.4% non-acceptors) followed by orthodox Christian (35.3% acceptors and 29.4% non-acceptors). Majority of the study participants were married (94.5% of acceptors and 87.2% of non-acceptors respectively). About 34% of acceptors and 37% of non-acceptors were illiterate. About 66% of acceptors and 59% of non-acceptors were house wife. Majority of acceptors and non-acceptors were living with their husbands (95% of acceptors and 77% of non-acceptors respectively). As it is summarized in table 1.

Table 1: Socio-demographic Characteristics of Acceptors and Non-Acceptors of HIV testing among pregnant women attending ANC service at Butagira and Attat Hospitals in Gurage zone, March, 2011.

Variables	Acceptors(=218)		Non-acceptors (=109)	
	No	%	No	%
Age in year				
15-19	16	7.3	5	4.6
20-24	49	22.5	19	17.4
25-29	71	32.6	30	27.5
30-34	60	27.5	33	30.3
35-39	22	10.1	22	20.2

Ethnicity				
Gurage	180	82.6	88	80.7
Non Gurage	38	17.4	21	19.3
Residence				
Rural	133	61.0	45	41.3
Urban	85	39.0	64	58.7
Religion				
Muslim	119	54.6	44	40.4
Orthodox	77	35.3	32	29.4
Other Christians	22	10.1	33	30.2
Marital status				
Married	206	94.5	95	87.2
Unmarried	12	5.5	14	12.8
Educational level				
Illiterate	73	33.5	40	36.7
Read & write	22	10.1	13	11.9
Primary	56	25.7	15	13.8
Secondary	40	18.3	31	28.4
Tertiary	27	12.4	10	9.2
Occupation				
Govt Employed	24	11.0	10	9.2
Merchant	36	16.5	22	20.2
House wife	143	65.6	64	58.7
Others	15	6.9	13	11.9
Monthly Income^a (in Birr)				
Ö650 Birr	116	53.2	48	44.0
> 650 Birr	66	30.3	45	41.3
Residence of Husband				
With wife	194	94.7	73	76.8
Another Place	12	5.3	22	23.2

a = mothers who don't know their income (36 from acceptors & 16 from non-acceptors)

5.2 Knowledge about HIV/AIDS, MTCT and PMTCT among acceptors and non acceptors of HIV testing

As it is summarized in table 2 below; when pregnant mothers were asked the route of HIV transmission, almost equal proportion, 95.9% of the acceptors and 96.3% of non-acceptors mentioned sexual contact, 88% of acceptors and 87% of non-acceptors mentioned that contaminated blood and blood product and 94.5% of acceptors and 90.8% of non-acceptors

contaminated sharps as a main route of HIV transmission respectively, but MTCT was mentioned by relatively lower proportion of acceptors and non-acceptors of HIV testing (49.5% and 38.5% respectively). About the time when MTCT could occur, most acceptors and non-acceptors of HIV testing mentioned transmission of the virus during pregnancy (85.7%, 90.8%), delivery (88.5%, 88%) and breast-feeding (83.4%, 73.4%) respectively. Regarding to intervention to reduce MTCT, about 87% of acceptors and 80.7% non acceptors mentioned that they know about intervention that reduce MTCT. When asked questions on how to reduce the risk of MTCT, 89% of acceptors and 91.7% of non-acceptors mentioned use of antiretroviral drug and 88.5% of acceptors and 86% of non-acceptors mentioned avoidance of breast-feeding as a means of reducing MTCT.

Table 2: Knowledge of respondents on HIV, MTCT & PMTCT, among pregnant women attending ANC at Butagira and Attat Hospitals in Gurage Zone, March, 2011.

knowledge Variables	Acceptors(=218)		Non-acceptors(=109)	
	No	%	No	%
Mentioned MTCT as route of HIV Transmission				
Sexual contact	208	95.9	105	96.3
Blood /blood product	192	88.1	95	87.2
MTCT	108	49.5	42	38.5
Contaminated sharps	206	94.5	99	90.8
Mentioned when MTCT could occur				
During pregnancy	186	85.7	99	90.8
During Delivery	193	88.5	96	88.1
Breast feeding	183	83.4	80	73.4
Awareness of preventive measures of PMTCT				
Use of antiretroviral drug	194	89.0	100	91.7
Avoid breast feeding	193	88.5	94	86.2

5.3 Socio-demographic factors associated with acceptance of HIV testing

Table 3 illustrates the socio-demographic factors associated with the acceptance of HIV testing. Pregnant mother who live in rural areas were about 2 times higher in accepting HIV test as compared to those who live in urban (COR= 2.2, 95% CI= 1.4, 3.6). Acceptance HIV testing was significantly associated with education level, pregnant mother who attended primary was about 2 times more likely to accept HIV test when compared with mothers who were illiterate (COR=2.1, 95% CI= 1.2, 4.1) but women who attended secondary level were less likely to accept HIV test when compared with mothers who were illiterate (COR= 0.7, 95% CI= 0.4, 0.9). Married women who were living with their husbands were more likely to be tested compared to those whose partners lived away (COR=4.9, 95%CI= 5, 11.6). Other variables like Age, marital status, occupation, income and ethnic group of the mother were not to be statistically significant when adjusted with other variables.

Table 3: socio-demographic factors associated with acceptance of HIV testing among pregnant women attending ANC service in Butagira and Attat hospitals in Gurage zone, March, 2011.

Variables	Acceptors (n=218) No	Non-acceptors (n=109) No	COR(95%CI)
Age in year			
15-19	15(78.9%)	4(21.1%)	3.9 (1.1, 13.8)
20-24	49(72.1%)	19(27.9%)	2.7 (1.2, 6.0)*
25-29	71(70.3%)	30(29.7%)	2.5 (1.2, 5.2)*
30-34	60(64.5%)	33(35.5%)	1.9 (0.9, 3.9)
35-39	21(48.8%)	22(51.2%)	1.00
ethnicity			
Gurage	180(67.2%)	88(32.8%)	1.1 (0.6, 2.1)
Non Gurage	38(73.1%)	14(26.9%)	1.0
Residence			
Rural	133(74.7%)	45(25.3%)	2.2 (1.4, 3.6)*
Urban	85(57%)	64(43%)	1.00
Religion			
Orthodox	77(70.6%)	32(29.4%)	0.9 (0.5, 1.5)
Other Christians	22(40%)	33(60%)	0.3 (0.13, 0.5)*
Muslim	119(73%)	44(27%)	1.00
Education level			

Illiterate	73(64.6%)	40(35.4%)	1.00
Read & write	22(62.8%)	13(37.2%)	0.9 (0.4, 2.0)
Primary	56(78.8%)	15(21.2%)	2.1 (1.2, 4.1)*
Secondary	40(56.3%)	31(43.7%)	0.7 (0.4, 0.9)*
Tertiary (12&above)	27(72.9%)	10(27.1%)	1.5 (0.7, 3.4)
Marital status			
Married	206(68.4%)	95(31.6%)	2.5(1.1, 5.7)*
Single	12(46.2%)	14(53.8%)	1.00
Residence of Husband			
At Home	194(71.8%)	73(28.2%)	4.9 (2.5,11.6)*
Another Place	12(35.3%)	22(64.7%)	1.00

Note: * = statistically significant at $p < 0.05$, CI= confidence interval

5.4 Knowledge, attitude (HIV, MTCT and PMTCT) and reproductive related factors associated with acceptance of HIV testing

Table 4 below shows; the association of knowledge on HIV, MTCT and PMTCT and reproductive and related factors with acceptance of HIV testing. As shown, study participants were assessed about their knowledge of route of HIV transmission, when mother to child transmission could occur and about attributes in the prevention of mother to child transmission of HIV infection. Mothers who Correctly identify MTCT as route of HIV transmission were about 2 times more likely to be tested (COR=1.8, 95%CI= 1.1, 4.1).

The number of antenatal visits attended by mothers was significantly associated with acceptance of HIV testing. 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 (COR=2.7, 95%CI= 1.4, 9.6).

The women were also compared with respect to their previous HIV testing experience. Mothers who had HIV testing in the past for different reasons were almost 5 times more likely to accept HIV testing in the current pregnancy compared to their counter parts (COR= 10, 95%CI= 3.8, 28.5).

Pregnant women considering themselves being at risk of acquiring HIV were about 2 times more in accepting HIV test as compare to those who did not take themselves at risk.(COR= 1.8, 95%CI= 1.1, 5.1).

Women who knew existence of intervention that reduce the risk of MTCT of HIV infection were also about 4 times more likely to practice HIV testing compared to those who were not (COR=3.5, 95%CI= 1.9, 6.3).

Table 4: Knowledge, attitude (HIV, MTCT and PMTCT) and reproductive related factors associated with acceptance HIV testing among pregnant women attending ANC service in Butagira and Attat hospitals, Gurage zone, March, 2011.

Variables	Acceptors(n=218) No	Non-acceptors (n= 109) No	COR(95%CI)
Mentioned MTCT as route of HIV transmission			
MTCT			
Yes	108(72%)	42(28%)	1.8 (1.1, 4.1)*
No	110(62.1%)	67(37.9%)	1.00
Mentioned when MTCT could occur			
During pregnancy			
Yes	186(65.3%)	99(34.7%)	0.6 (0.3, 1.09)*
No	32(76.2%)	10(23.8%)	1.00
Awareness of preventive measures of PMTCT			
Avoid breast feeding			
Yes	193(67.2%)	94(32.8%)	1.2 (0.6, 2.5)
No	25(62.5%)	15(37.5%)	1.00
No of ANC visits			
Two and more	116(84.1%)	32(15.9%)	2.7 (1.4, 9.6)*
Less than twice	102(56.9%)	77(43.1%)	1.00
Prior HIV test			
Yes	213(71.5%)	86(28.5%)	10 (3.8, 28.5)*
No	5(17.9%)	23(82.1%)	1.00
Self perceived risk			
Yes	104(73.7%)	37(26.3%)	1.8 (1.1, 5.1)*
No	114(61.3%)	72(38.7%)	1.00
Knew existence of intervention that reduce			

MTCT			
Yes	182(72.8%)	68(27.2%)	3.5 (1.9, 6.3)*
No	26(43.3%)	34(56.7%)	1.00
Perceived benefit HCT to mother and baby			
Yes	190(71.2%)	77(28.8%)	2.8 (1.3, 6.4)*
No	28(46.7%)	32(53.3%)	1.00

Note: * = statistically significant at $p < 0.05$, CI= confidence interval

In the final model, variables which showed significant association in the two models were included. From all the variables, Residence of Husband; identifying MTCT as route of HIV transmission, attendance of ANC follow up, Self perceived risk of get HIV and Know existence of intervention that reduce MTCT were found to be independent predictors of acceptance of HIV testing. As shown on table 5, Married women who were living with their husbands were 4 time more likely to be tested compared to those whose partners lived away (AOR=4.2, 95% CI= 1.7, 11.2). Mothers who Correctly identify MTCT as route of HIV transmission were about 3 times more likely to be tested (AOR=2.9, 95% CI =1.5, 5.9). similarly, Women who attended at least two antenatal care visits were 3 times more likely to take the test compared to those mother who attended less than two visit (AOR=2.8, 95% CI=1.4, 5.6). Pregnant women considering themselves being at risk of acquiring HIV were about 3 times more in accepting HIV test as compare to those who did not take themselves at risk.(AOR= 2.5, 95% CI= 1.3, 4.6). Women who knew existence of intervention that reduce the risk of MTCT of HIV infection were also 2 times more likely to practice HIV testing compared to those who were not (AOR=2.2, 95% CI= 1.6, 4.9).

Table 5: Independent predictors of HIV testing acceptance among pregnant women attending ANC service in Butagira and Attat hospitals, Gurage zone, March, 2011.

Variables	Acceptors (n=218) No	Non-acceptors (n= 109) No	COR(95%CI)	AOR(95% CI)
Residence of Husband				
At Home	194	73	4.9 (2.5,11.6)*	4.2 (1.7, 11.2)*
Another Place	12	22	1.00	1.00
Mentioned MTCT as route of HIV transmission				
MTCT				
Yes	108	42	1.8 (1.1, 4.1)*	2.9 (1.5, 5.9)*
No	110	67	1.00	1.00
No of ANC visits				
×2	116	32	2.7 (1.4, 9.6)*	2.8 (1.4, 5.6)*
<2	102	77	1.00	1.00
Self perceived risk				
Yes	104	37	1.8 (1.1, 5.1)*	2.5 (1.3, 4.6)*
No	114	72	1.00	1.00
Knew existence of intervention that reduce MTCT				
Yes	182	68	3.5 (1.9, 6.3)*	2.2 (1.6, 4.9)*
No	26	34	1.00	1.00

CHAPTER SIX

DISCUSSION

HIV counseling and testing has been shown to have a role in both HIV prevention and for people with HIV infection; as an entry point to care. HIV testing provides people with an opportunity to learn and accept about their sero-status in confidential environment. Pregnant women who are aware of their status can prevent transmission to their infant.

In this study when women asked the route of HIV transmission, Almost equal proportions (95.9% of the acceptors and 96.3% of non-acceptors) mentioned sexual contact, 88% of acceptors and 87% of non-acceptors mentioned that contaminated blood and blood product and 94.5% of acceptors and 90.8% of non-acceptors contaminated sharps as a main route of HIV transmission respectively, but MTCT was mentioned by relatively lower proportion of acceptors (49.5%) and non-acceptors (38.5%) of HIV testing. This shows that mothers have less information (less focus is given) on MTCT as it is the route of HIV transmission.

In this study women also asked about the time when MTCT could occur, most acceptors and non-acceptors of HIV testing mentioned transmission of the virus during pregnancy, delivery and breast-feeding. Regarding to intervention to reduce MTCT, about 87% of acceptors and 80.7% non acceptors mentioned that they knew about intervention that reduce MTCT. When asked questions on how to reduce the risk of MTCT, 89% of acceptors and 91.7% of non-acceptors mentioned use of antiretroviral drug and 88.5% of acceptors and 86% of non-acceptors mentioned avoidance of breast-feeding as a means of reducing MTCT. In a cross-sectional study conducted in Mekelle zone, North Ethiopia mentioned that 94% knew that MTCT of HIV could be prevented, 91% mentioned by abstaining from breastfeeding, 59% by giving prophylactic ant-retroviral drugs 3% cesarean section delivery (22). The higher proportion in this study may be due to increment the coverage of health education through health extension workers and mass Medias, specially the availability of the Gurage community radio and it could be also the difference in designs; Hince, cross-sectional study is prevalence type of study this might create a difference in sample size in both methods.

Our study shows that pregnant women who reside in rural were not associated with acceptance of HIV testing when adjusted with other variables. This can be explained by the fact that due to

health extension worker and lack of perceived risk or fear of unable to have the service if they refuse.

The study also shows that religion of the mother was not associated with the acceptance of HIV testing. In a cross sectional study conducted in the Kilimanjaro region of Tanzania, religion was associated with willingness to accept HIV testing (26). The possible explanation for the difference could be the difference in study designs, which determines the type of analysis method to be used.

Our study shows that mother's educational level of primary and secondary was not associated with acceptance of HIV testing when adjusting with other variables. The result of this study is consistent with the findings from other studies. In study conducted in Arba Minch Town, Southern Ethiopia the acceptance was 3 times more in those pregnant women who had attended primarily level of education (29). The association of acceptance of testing and education can be explained by the fact that educated mothers are better in assessing the advantage of testing and may be aware of the benefits of the test and treatment options that reduce mother to child transmission of HIV infection.

The study also showed that pregnant women who were living with their husbands were significantly more likely to be tested than those pregnant women whose husbands lived another place for various reasons. The possible explanation for association between husbands residence and acceptance of prenatal HIV testing may be women who are living with their husbands are more likely to discuss the issue of HIV counseling and testing, decide whether to be tested or not. Moreover they may have their husbands support and even the possibility for the couples to take HIV testing, unlike those pregnant women whose partner live away.

In our study knowledge of mother-to-child transmission as a route of HIV transmission was found significantly associated with the acceptance of HIV testing. This is in line with study conducted DilChora Hospital, Dire Dawa, Ethiopia knowledge on HIV/AIDS, MTCT and HIV testing were found to be independent predictors of the acceptance of HIV testing (28).

The finding of the study also showed the number of antenatal visit was found to be independent predictors of the acceptance of HIV testing. Mothers who had two or more antenatal visits were about 3 times more likely to be tested than those who had less visits (OR =2.8, 95%CI=1.4, 5.6). A similar study conducted in Arba Minch Town, Southern Ethiopia found that acceptance of

HIV testing was almost 4 times more in those pregnant women who had two or more ANC visit compare to their counterpart (29). This association between number of antenatal visit and acceptance of prenatal HIV testing may be explained by frequent exposure of mothers to information regarding HIV, MTCT and PMTCT during their follow up, which may influence the mother to take the test.

In this study pregnant women who had HIV testing in the past were five times more likely to be tested than those women who had no prior HIV testing experience. The possible explanation for association between previous testing and current one might be women who had HIV testing in the past were more likely to have change in their sexual behavior after knowing their sero-status. As a result women who were tested in the past are more likely to take the test considering their previous test result and the change in their sexual behavior and thinking the outcome of the current test to be negative.

In this study perceived benefit of HIV testing was not found significantly associated with the acceptance of prenatal HIV testing, when adjusted with related variables. In another studies, perception of mothers on benefits of HIV was found to be independent predictors of the acceptance of HIV testing (23, 28). The possible explanation for the difference to the current study might be the previous studies were conducted before opt-out program was started and were focusing on pregnant women who were voluntarily coming to the facility to have the test and those who might have good understanding about the benefit HIV testing.

The study also showed that pregnant women considering themselves being at risk of acquiring HIV were about 3 times more in accepting HIV test as compare to those who did not take themselves at risk.(OR= 2.5, 95% CI= 1.3, 4.6). Similar finding was reported in study conducted in Arba Minch, Ethiopia that perceived risk for HIV was strong predictor of acceptance of HIV testing (29).

In this study pregnant women who knew existence of intervention that reduce mother-to child transmission of HIV were about 2 times more likely to be tested than those who were not aware of intervention to reduce MTCT. This is in line with a study conducted in Addis Ababa, pregnant women who know existence of intervention that reduce mother-to-child of HIV were about 3 times more likely to be tested than those who were not aware of intervention to reduce mother-child transmission (23).

6. Strength and Limitations of the Study

6.1 Strength of the study

Using a sound study design (case control) which is quick and efficient for the current study.

Using of both quantitative and qualitative data collection method that may increase reliability of information.

6.2 Limitation of the study

Utilization of health professional as data collectors (nurses) may create bias as they might direct the respondents during the interview.

There might be recall bias; subjects accepted or refused might remember/report their exposure differently.

There might also be misclassification bias during recording of cases and controls.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATION

7.1 Conclusion

The study showed that knowledge on HIV transmission was almost similar between cases and controls, but MTCT as a means of HIV transmission was mentioned by relatively lower proportion of acceptors and non-acceptors of HIV testing (49.5% and 38.5% respectively). The study showed mothers knowledge on MTCT and PMTCT was good and also similar among cases and controls. The study also showed that; living with husband at same place; identifying mother-to-child transmission (MTCT) as route of HIV transmission, attendance of antenatal care (ANC) follow up, Self perceived risk of getting HIV and Know existence of intervention that reduce MTCT were found to have a positive effect on acceptance of HIV testing.

7.2 Recommendation

Based on the finding of current study:

Agencies (governmental or non-governmental) engaged with HIV prevention and care and support program should give intensive and continued education, to both pregnant mother and their partners, about prenatal HIV transmission, the role of HIV counseling and testing on the prevention of mother-to-child transmission of the virus, and about the existence of intervention that reduce the possibility of prenatal transmission of the virus, with special emphasis to those couples who live apart, due to the nature of their job.

Health extension workers & Mass media should exercise their influence by providing accurate and consistent information on HIV. Focusing on MTCT & PMTCT.

Health professionals working in health facilities should be trained on HIV counseling and testing so that they will follow the procedures of HIV counseling and testing of pregnant mothers.

There should be continued effort to further increase prenatal HIV counseling and testing, with proper information dissemination involving all possible stakeholders focusing on the rural community.

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APPENDIX

Questionnaire

PREDICTORS OF HIVCOUNSELING AND TESTING AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE SERVICES AT BUTAGIRA AND ATAT HOSPITAL, GURAGE ZONE, SOUTH ETHIOPIA, 2011.

01-Site _____

02-Study participants

1. HIV test acceptors
2. HIV test non acceptors

Introduction

My name is _____ I am interviewing pregnant women attending antenatal clinic at _____ (name of institution) about factors affecting acceptance of HIV testing among pregnant women. The interview should be conducted after a women passes through the process of counseling whether she accept HIV testing or not.

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

If, yes-(1) continue

No-(2) stops

Interviewer signature certifying that informed consent has been given verbally.

Interviewer name _____ Signature_____

Date of interview_____

Checked by supervisor

Name_____

Signature_____

Date_____

Part I: back ground information

Sr. No	Question	Response coding categories	skip	code
101	Age of respondents in year (complete year)	Year_____ Do not know í í í í í í í .88 No response í í í í í í í ..99		
102	To which ethnic group do you belong?	Gurage í í í í í í í í .1 Kebena í í í í í í í í í 2 Silite í í í í í í í í í í 3 Oromo í í í í í í í í í í ..4 Other (specify) í í í í í í .5		
103	What religion are you?	Muslim í í í í í í í í .1 Orthodox Christian í í í ..2 Catholic í í í í í í í í . 3 Protestant í í í í í í í í 4 Other (specify-----5		
104	What is the highest level of school you completed?	Illiterate-----1 Literate(read & write) -----2		

		Primary-----3 Secondary-----4 Tertiary (above 12)-----5 No response-----99		
105	What is your current occupation?	Govt employed í í í í í í í 1 Merchant í í í í í í í í í 2 Housewife í í í í í í í í í ..3 Student í í í í í í í í í í í 4 Jobless í í í í í í í í í í í ..5 Other (specify)_____ í í í í 6		
106	If you have a job, What is your average monthly income?	_____birr per month I don't have í í í í í í í .88 Do not know í í í í í í í .99		
107	Area of residence?	Rural í í í í í í í ..1 Urban í í í í í í í ..2		
108	What is your Marital status?	Married í .í í í í í í í í .. 1 → Single í í í í í í í í í í 2 Other(specify)_____.....3	108	
109	If married, are you currently living with your partner?	Yes í í í í í í í í í í 1 No í í í í í í í í í í í .. 2		
110	Number of pregnancy including the current one	_____times pregnancy Do not remember í í í í .88 No response í í í í í í í ...99		
111	The number of antenatal care visit	_____ANC visits.		

	attended in the current pregnancy	Do not remember í í í í .88		
		No response í í í í í í ..99		

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

No	Question	Coding categories	skip	Code
201	Have you ever heard of HIV or disease called AIDS?	Yes í í í í í í í í í í 1 No í í í í í í í í í í 2 I don't know í í í í í ..88 No response í í í í í í 99		
202	Do you know how HIV is transmitted?	Yes í í í í í í í í í .1 No í í í í í í í í í .2 No response í í í í í 99	→	Q.203
203	If the answer is yes to question number 202 mention the route of transmission?	Sexual intercourse í í í í í 1 Infected blood í í í í í í ..2 By sharing sharps í í í í í ..3 Mother to child í í í í í í ..4 Injection by unsterile needle í í ..5 Other (specify) _____ í í . 6		
204	Can HIV/AIDS be cured?	Yes í í í í í í í í í .. 1 No í í í í í í í í í í 2 I don't know í í í í í 88 No response í í í í í ..99		
205	When do you think an HIV positive pregnant women transmit the virus to her baby? Circle more than one	During pregnancy í í í í í 1 At child birth í í í í í í í 2		

	Answer	Breast feeding í í í í í í í ..3 Don't know í í í í í í í í .88 No response í í í í í í í í ..99		
206	If a woman is infected with the AIDS virus, is there any way to avoid transmission to the baby?	Yes í í í í í í í í .1 No í í í í í í í í í .2 I don't know í í í í í í í 88	→	Q. 209
207	Do you know the existence of intervention which reduce mother to child transmission of HIV virus?	Yes í í í í í í í í í í í 1 No í í í í í í í í í í í ..2	→	Q.210
208	What can a woman do to reduce transmission of the HIV virus? Circle more than one Answer	Use antiretroviral drug í í í ..1 Avoid breast feeding í í í í ..2 Other(specify) í í í í í í í í 3		

PART III: Personal risk perception

Sr.No	Question	Response Coding category	Skip	code
301	Do you think you can get the virus?	Yes í í í í í í í í í í 1 No í í í í í í í í í í í 2 I don't know í í í í í í . 88 no response í í í í í í í í 99	302&303 304	
302	If yes what are the reasons?	I had multiple sexual partners í í í í . 1 I had sexual contact without condom í í 2 I had injection with unsterile needle í í . 3 I had sexual contact with HIV positive person.....4 Other specify _____ í í í í ..5 I don't know í í í í í í í í í í .. 88 No response í í í í í í í í í í í 99		
303	If your response is no to question number (301), what are the reasons?	I trust my sexual partner í í í í .1 No injection with unsterile needle . 2 I always use condom í í í í í .. 3 I don't know í í í í í í í í í í 88 No response í í í í í í í í í í ..99		

Part IV: HIV Counseling and Testing, stigma & discrimination, attitude & confidentiality about HIV testing.

Sr.no	Question	Response Coding category	Skip	Code
401	Have you ever heard of HIV counseling and testing?	Yesí í í í í í í í í 1 Noí í í í í í í í í ..2 I don't knowí í í í í .. 88 No responseí í í í í .. 99		
402	What is the source of information, if the answer is yes?	Mass media (Radio, TV, etc)í í . 1 Health work or Institutioní í í .. 2 Friends í í í í í í í í í í .3 Neighborsí í í í í í í í í í 4 Other (specify) _____ í í . 5		
403	Have you ever told about the benefit of HIV testing?	Yesí í í í í í í í í í í ..1 Noí í í í í í í í í í í2 No responseí í í í í í í í í . 99		
404	Do you think HIV counseling and testing is important for pregnant women?	Yesí í í í í í í í í í í . 1 Noí í í í í í í í í í í í 2 I don't knowí í í í í í í í 88 no response í í í í í í í í 99		
405	When did you have your most recent HIV test?	Current pregnancyí í í í ..1 Within the past one yearí í ..2 Between one and two yearí ...3 Between two and four yearí .4 More than four yearí í í í .5 I don't know í í í í í í í ..88		

		No response í í í í í í í í 99		
406	What was the reason for testing? If the answer to question number (405) is yes.	Marriage í í í í í í í í í 1 To protect the child í í í í .. 2 To protect partner í í í í í ..3 To know my status í í í í í 4 Other (specify)_____ í í í ..5 I don't know í í í í í í í í ..88 No response í í í í í í í í 99		
407	Did you voluntarily undergo the HIV test or were you requested to have the test?	Voluntarily í í í í í í í í ..1 Requested í í í í í í í í . 2 Other(specify)_____ í í í 3		

Sr.no	Question	Response Coding category	skip	Code
408	What are some of the reasons you think for refusal of HIV testing?	Inability to deal with stress of being positive í í í í í í í í í í í .1 Fear of rejection by the communityí ..2 Uncertainty about husbands reactioní .3 Non respect of confidentialityí í í í 4 Other(specify)_____ í í í í .5 I don't knowí í í í í í í í í í .88 No responseí í í í í í í í í í ..99		
409	Do you receive counseling before testing?	Yes í í í í í í í í í í í ..1 Noí í í í í í í í í í í í 2 Don't knowí í í í í í í í í í 88 No responseí í í í í í í í í í .99	→	Q.411
410	Do you need to be tested if you know the existence of such intervention?	Yesí í í í í í í í í í ..1 Noí í í í í í í í í í í 2 I don't knowí í í í í í í í .88 No responseí í í í í í í í .. 99		
411	To whom do you think that the test is of Benefited during pregnancy?	Mother alone í í í í í í í í 1 Baby aloneí í í í í í í í í .2 Mother and babyí í í í í í í .3 Health workersí í í í í í í í 4 Other (specify) _____ í í í .. 5 I don't knowí í í í í í í í í .88 No responseí í í í í í í í í .99		

412	By whom do you prefer to get HIV counseling and testing?	Doctor/ Health officer í í í í í í í í í 1 Nurse í í í í í í í í í 2 trained counselor í í í í 3 HIV patient í í í í í í .4 Other (specify) _____ í í 5		
413	Which method of testing do you Prefer?	Confidential linked testing í í í .1 Anonymous í í í í í í í í í .2 Other (specify) _____ í í í í ...3 I don't know í í í í í í í í 88 No response í í í í í í í í 99		
414	Which way do you prefer to obtain HIV test result?	Face to face(verbally) í í í í í .1 Secretive letter í í í í í í í ...2 Through relative or partner í í .3 Telephone í í í í í í í í í 4 Other specify í í í í í í í í 5 No response í í í í í í í í .99		
415	Did you receive counseling after getting your result?	Yes í í í í í í í í í í í .1 No í í í í í í í í í í í ..2 I don't know í í í í í í í í .88 No response í í í í í í í í .. 99		
416	Would you talk your partner before having HIV test?	Yes í í í í í í í í í í ..1 No í í í í í í í í í í í 2 No response í í í í í í í í 99		
417	Would you tell your partner the	Yes í í í í í í í í í í í 1		

	test result of an HIV /AIDS test	No í í í í í í í í í í í í .2 I don't know í í í í í í í í .88 No response í í í í í í í í 99		
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This is the end of our questionnaire. Thank you very much for taking time to answer these questions. We appreciate your co-operation.

Time at the end of interview_____.

