

**ASSESSMENT OF THE MAGNITUDE AND FACTORS
AFFECTING SAFE DELIVERY AND POSTPARTUM
SERVICES UTILIZATION
AMONG WOMEN OF REPRODUCTIVE AGE GROUP
LIVING IN AMBO TOWN & ITS SURROUNDINGS AREA,
WEST SHEWA ZONE, OROMIA REGIONAL STATE,
CENTRAL ETHIOPIA**

**BY
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MEDICAL FACULTY SCHOOL GRADUATE STUDIES OF
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A THESIS PAPER ON

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SUMMARY

Background: The leading causes of disability and death among women of child bearing age arise from the complication of pregnancy and child birth. Safe delivery and post natal care services form the pillar of safe motherhood strategies to reduce pregnancy related preventable women's and their children's mortality, morbidity and long term disability.

Objective: to assess the magnitude and factors affecting Safe delivery and postnatal service utilization among women of reproductive age living in Ambo town and its area

Methods: A community based cross-sectional study was conducted from March to April 2009 on mothers aged 18 to 49 years who have had at least one birth during the last 5 years. A multi stage sampling technique was used to select the sample of 581 women. Data were collected through structured pre tested and semi structured questionnaire and check lists. The questionnaire consists of socio demographic variables, attitude of mothers towards utilization of safe delivery and post natal services. FGD, in-depth interview and Review of records were used to support the quantitative study.

Data were entered into EPI Info version 6.04 and analyzed on SPSS version 11.0 for windows computer soft ware. X^2 test and odds ratio were used to determine significance and strength of association between independent and dependent variable. Logistic regration analysis was done to assess the relation effect factors.

The study was conducted after approval of Institutional review board of medical faculty AAU and informed consent was taken from study participants prior to the actual survey.

Result:

The study revealed that from the total, 389(67%) and 98(17%) of the respondents utilized antenatal and post natal care respectively. Women's education, income, marital status, previous use of peri natal and post natal care, payment for the services were significantly associated with the utilization of safe delivery services at $p < 0.05$. But maternal age, gravidity, parity did not show significant association with health institutional delivery.

On the other hand mothers residence, ethnicity, education, number of pregnancy, child birth and still birth, previous birth complication, and place (Delivery at Health institution) of last delivery were showed an association with maternal use of PNC at $P < 0.05$. Income and Education were independent predictors for maternal health service utilization since they showed a significant association in both bivariate and multi variate analysis.

Conclusion:

Safe delivery and PNC services utilization depend on women and health worker factors. Demographic and socio-cultural factors were found to be barriers to the utilization of safe delivery services and proportion of births delivered in health facilities is low in the area. User and provider (health system) interrelation determine the utilization of maternal health service.

Cognizant of this, investment on female education, providing information to mothers on use of perinatal health service (ANC), improving women's income and status, giving adequate information to community about maternal health care are found to be more important determinant factors for the improvement of safe delivery and PNC services utilization.

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ACRONYM (ABBREVIATIONS)

AAU - Addis Ababa University
AIDS- Acquired Immuno- Deficiency Syndrome
ANC- Antenatal Care
CBAW- Child Bearing Age Women (age 15-49)
CSO - Central statistical Office
DHS- Demographic and Health Survey
EmONC- Emergency Obstetric and Neonatal Care
EPI Info- Epidemiological information (Computer Soft ware)
FGD- Focus Group Discussion
FMOH- Federal Ministry of Health
HI- Health Institution
HW- Health Worker
IEC- Information, Education and Communication
LB- Live Birth
MCH/FP- Maternal and child Health/Family Planning
MPS making pregnancy safer
MMR- Maternal Mortality Ratio
MVA- Manual Vacuum Aspiration
PAD- Professionally Assisted Delivery
PNC - Postnatal care
SBA - Skilled Birth Attendants
SMH - Safe Mother Hood
SPSS- Statistical Package for Social Sciences (Computer Soft ware)
SSA - Sub-Saharan Africa
TBA- Traditional Birth attendant
UN- United Nation
UNICEF- United Nations Children Fund
WHO- World Health organization
WHR- World Health Record

I. INTRODUCTION

Safe delivery and post natal care services form the pillar of safe mother hood strategies (SMS). These services are known to reduce the maternal mortality and improve the overall reproductive health status of women (1). SAFE Motherhood has six basic elements as a package. Utilization of reproductive healthcare services such as safe delivery and postnatal care (PNC) is essential and a basic need for mothers around the globe. (3, 4)

Safe delivery care is a care given to avoid and reduce complication originating from pregnancy and its outcome and to have healthy mothers and baby with little intervention, such as using skilled labor attendants and clean cord cutting instrument. Emergency obstetric care (EOC) is an important element of safe motherhood component (4, 5, 8, 9).

Post natal care promote psychosocial well being of mother, baby and family, recognize complication at early stage and provide appropriate care and health promotion messages. PNC is conducted within 24 hours after delivery, at first week of post partum and then at 6th week of post partum, or in some countries 4 times visit in the first 6 hrs then at 3rd, 14th and 40th days after birth. (5)

Due to low utilization of safe delivery services and post natal care measure in developing countries challenging the ability to reduce preventable and treatable causes of peri natal and maternal mortality(1).

Child birth as normal physiological process may be followed by complications like bleeding and infection due to unskilled attendant and septic manipulation by unsterilized instruments. Worldwide the major direct causes of maternal death include hemorrhage, obstructed labour, and infection which accounted for 80% of MMR (2, 5).

In a given society women comprise a large proportion but they are at a greater disadvantage in terms of poor maternal health care which is reflected by high maternal morbidity and mortality in labour, delivery and then after. (10, 12) In every minute, one woman dies due to causes related to pregnancy, child birth and post natal period (11, 12).

Previous studies showed that every day at least 1,600 women die worldwide from the complications of pregnancy and child birth. The life time risk of maternal death in Africa is 1 in 16 but in developed world one mothers died from the total of 400. The maternal deaths per 1000,000 life birth in developing countries is 40 times higher than that of developed country.(6) More than 60% of maternal deaths take place in the period immediately following delivery, with more than half occurring within a day of delivery (7, 14) .

Studies across the world demonstrate that all pregnant women are at risk of serious obstetric complications (20). There is a high level of maternal and child mortality and morbidity in developing countries (4, 6) and maternal mortality cannot be substantially reduced unless women have access to skilled attendants at birth and emergency obstetric care (20, 22). Effective intra-natal and postnatal care is indispensable even if the delivery is going to be a normal process (7, 10, 11).

Safe motherhood strategy as package includes antenatal visits, safe delivery by skilled birth attendants, essential obstetric care (EOC) at first referral level, enhancing-advancement of the status of woman, birth planning, emergency transport to reduce maternal and child mortality and morbidity (14).

In Ethiopia the level of maternal and infant mortality are among the highest in the world. One explanation for poor health outcomes among women is non availability and non use of modern health services by sizable proportion. Only a quarter of Ethiopian women receive ANC and less than 10% of women receive Professionally Assisted Delivery (PAD) (4, 5).

Thus, there is a need to assess factors that influence utilization of these services and to find out the possible reasons for under utilization of the services. This may serve as an important tool for any possible interventions aimed at improving the low utilization of the services.

II. LITRATURE REVIEW

2.1. MAGNITUDE OF MATERNAL MORTALITY

Maternal mortality - indicates the number of death of women during childbearing in a given year per 100,000 live births. It is defined as the death of a woman while pregnant, or within 42 days of termination of pregnancy, irrespective of the duration of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (3).

The World Health Organization estimates that half a million women die in pregnancy and childbirth every year (16). About 99 % of the fatality takes place in developing countries and slightly more than half occurred in sub-Saharan African region alone followed by south Asia. These are due to women's low social status and poverty which in turn lead to their poor health, high fertility and lack of access to essential health cares (7, 16).

Maternal mortality ratio in Africa is increased from 870 to 940 per 100,000 live births in 1990-2001 and 2005 (11, 12). MMR in Ireland is 1 per 100,000 LB but in Sera Leon 2000 per 100,000 Live births (LB) or (2 per 100). The extreme gap may indicate that using safe delivery & post natal care service can reduce maternal death due to maternal causes (16) In the same year in eastern Africa; Tanzania, Uganda & Ethiopia 578, 435 & 673 mothers died per 100000LB by the fact that they had had 47, 42 and 16% skilled birth attendance, respectively (12, 13).

Maternal mortality as a global tragedy annually, 585,000 women die of pregnancy related complications of this 99% in developing world but only about ~ 1% MMR occurred in developed countries. A global maternal death watch shows every minute, 380 women become pregnant, 190 women face unplanned or unwanted pregnancy, 110 women experience a pregnancy related complication, 40 women have an unsafe abortion 1 woman dies from a pregnancy-related complication (14).

The global major causes of maternal deaths are hemorrhage (25%), sepsis (15%) un safe abortion (12%) hypertensive disorder (12%) obstructed labor (8%) and other direct (20%) and indirect (20%) in descending order (13).

2.2. DETERMINANTS OF MATERNAL MORBIDITY AND MORTALITY

Quality of obstetric care is reflected on the magnitude of prenatal and maternal mortality rates of a certain country (6). It was reported that numerous problems faced by developing countries such as financial constraints, growth of the private sector and deferring quality in the private & public sector have had a profound impact on resource development and on delivery of quality safe delivery and post natal service. (5)

An estimated 40% or more than 50 million pregnant women each year experience pregnancy related health problems (morbidity) during or after child birth. Fifty percent of these women suffer serious or long- term disability. Inadequate maternal care during pregnancy and delivery is largely responsible for the estimated million still births and new born deaths that occur around the world each year (10).

Maternal and neonatal morbidity and mortality rate due to maternal cause in developing Sub-Saharan African countries and in Ethiopia are among the highest in the world and stem from a range of Socio-economic, political and demographic factors. Socio-economic inequalities matters in the use of reproductive healthcare services and which is much lower among the poor than the rich (4,5). Accessibility and distance and formal education and area of residence determine utilization of safe delivery service in Uganda and Mexican DHS, 1993. (17-19).

Determinants of reproductive health encompasses, social context (of community, household and family), education, income, health services (access, quality, personal efficacy and health competence, healthcare seeking), nutrition, housing and environment. Maternal morbidity and mortality are determined by age at child birth (too early, too late), parity (too many and too close), pregnancies (too close), family size, malnutrition, poverty, illiteracy, ignorance and prejudices, lack of maternity services, shortage of health manpower, delivery by untrained attendants, poor environmental sanitation, poor communication and transport facilities and social customs(3).

2.3. SAFE DELIVERY SERVICE UTILIZATION

There is evidence that access to skilled assistance and well-equipped health institutions during delivery can reduce maternal mortality by 80%(13), Care during pregnancy, delivery and post natal period can positively improve the health of both mother and new born (infant). For example analysis of DHS data from Morocco and Tunisia demonstrated that high levels of health care are associated with better reproductive outcome (15).

Since most maternal death occurred during labour and delivery or within the first week following birth, skilled birth attendants at labour and Emergency Obstetrical Care (EmOC) is the most important intervention to reduce MMR. EmOC is a term used to determine the elements of obstetrical care needed for the management of normal and complicated pregnancy, delivery and the post partum period. Basic emergency obstetric care includes administration of antibiotics, oxytocin, anticonvulsants, manual removal of the placenta, removal of the retained products, and assisted vaginal delivery with forceps or vacuum extractor. Comprehensive EOC includes all basic functions plus caesarean section and blood transfusion (8).

A study in Iran showed that opportunities of delivery in appropriate place and by skilled attendant were more common in those with higher economic levels, younger age and better educational level as important factor. Also the proportion of women delivered in health facilities was low in the area where demographic and socio-cultural factors were found to be barriers to the utilization of safe delivery services (21).

In Ethiopia Emergency obstetric care (EmOC) was virtually non-existent outside Addis Ababa and the other major cities. Even in some of the Regional Hospitals, there was no provision for blood transfusion; no one was trained in manual vacuum aspiration (MVA); there was no anesthesia or even basic supplies such as gloves. Some Regional centers had no means for transporting women to the nearest referral hospital, despite heroic efforts by the hospital and community to bring them there. Access remains one of the most critical barriers to obtaining emergency obstetric care, in the absence of a major investment in vehicles, particularly four-wheel-drive vehicles and their maintenance. Nevertheless, a significant effort must be made to improve the quality of essential obstetric care (33).

In the study done in Southern Nations and Nationality People of Ethiopia in 2008, safe delivery service utilization is related to the user and provider (women and health worker factors) interrelation. Women education, birth order, and previous history were significantly associated with safe delivery service utilization (30).

A study in North Gondar of Ethiopia revealed that a total of 13.5% of mothers gave birth to their last babies in health facilities. Only about 25% of the rural women gave birth in the health institutions. Untrained traditional birth attendants and relatives attended 76.4% of the deliveries. The reported reasons were: absence of health problems, short duration of labour, preferring the attention of relatives and trust in traditional birth attendants (9)

2. 4. POST NATAL SERVICE UTILIZATION

The post delivery period is extremely important, and is the period following childbirth during which the body tissues, in particular the genital and the pelvic organs, return to the condition they were in pre-pregnancy. It is about 6 weeks (42 days) after delivery. The first 24 hours after birth, or the immediate puerperium, is a critical stage. The early puerperium refers to the 2nd to 7th day post delivery where major changes start in genital tract and is probably also the time of maximum adjustment (36).

Several studies in both high and low income countries have identified the importance of the postpartum period for acute short-term, long-term, and chronic morbidity. Moreover, up to two thirds of maternal deaths occurred during this period /after delivery (38).

World Health Organization suggests that health care should be provided at 6 hours, 6 days, 6 weeks, and 6 months post delivery, in order to ensure women's physical and mental health and well-being (35). Despite this recommendation, seven out of ten women do not receive any postpartum care, based on Demographic and Health Surveys conducted in 30 low income countries between 1999 and 2004 (35) .

Research findings reveal that of every 1000 babies born alive, 12 die within hours of birth, eight of them due to injury during deliveries. In a recent study it was found that of the 695 admitted neonates 231 or 33 percent were due to birth asphyxia (33). One hundred and sixty-five (23.75%) neonates died in the hospital, and 93 or 56 percent of

them due to birth asphyxia and its complications. More than one-third of the asphyxiated cases reach hospital more than 24 hours after the difficult delivery; about 40% of them usually die. This neonatal death can be prevented if more centers for safe delivery and proper neo-natal treatment are made available in the country (33).

Low utilization of postnatal care has been related to women's lack of knowledge about its importance, their lack of perceived need (especially if they are feeling well), their low level of education, poverty, lack of access to health care facilities that provide postnatal care, lack of appointments or recommendations from health care providers to obtain postnatal care, poor attitudes of the health care providers, or women's tendency to give priority to the health needs of their infants rather than their own (30,33) .

Postnatal care services are offered by very few health facilities; and many providers were not even sure what services should be provided after delivery. One health worker attributed the low levels of postnatal care to traditional practices that prohibit mothers from leaving their homes within the first 45 days after delivery (33) . Of the women who do attend for postnatal care, only a third report for a second visit. In the dissemination workshop it was suggested that home visits should be encouraged as part of postpartum care (33, 35).

2.5. EFFECTS OF PRENATAL CARE UTILIZATION

ANC helps for safe delivery screening or through detection & treatment of maternity care. It is postulated to reduce problems associated with pregnancy and delivery through early identification of morbidity and risks of mortality, both at preventive & curative actions. In addition to lack of sufficient maternity care services, low utilization of those services that are available to pregnant women in developing countries has been recognized as a problem (3- 4).

Most common reason for not utilizing ANC, delivery and post natal care are accessibility, availability and affordability of the services. Financial which includes cost for transport and cost for the service should shared for other family members and children as a major reasons in Bangladesh, India & EGYA. (23, 25)

A study conducted on patterns of maternity care service utilization in southern Ethiopia in 1997 revealed that only 26.1% and 3.3% of the women received ANC & Delivery care service, respectively. It also showed that the use of both antenatal and delivery care service for subsequent pregnancies is less apparent among those women with more than one under- five children and those residing in the rural parts of the study area.(24)

2.6. DETERMINANTS OF MATERNITY CARE SERVICE UTILIZATION

SOCIO-DEMOGRAPHIC FACTORS: Different socio demographic factors determine women maternity care service utilization. Mother residence determines the physical and socio economic access. Physical/geographical accessibility depends on mother's residence which is a major determinant of health service utilization. In developing countries about 80% of mothers live in rural area which is more than 10 kilometers from the health Institutions where EOC services are available. Vehicle shortage and poor road conditions worsen the severity in transportation of laboring mothers. (16)

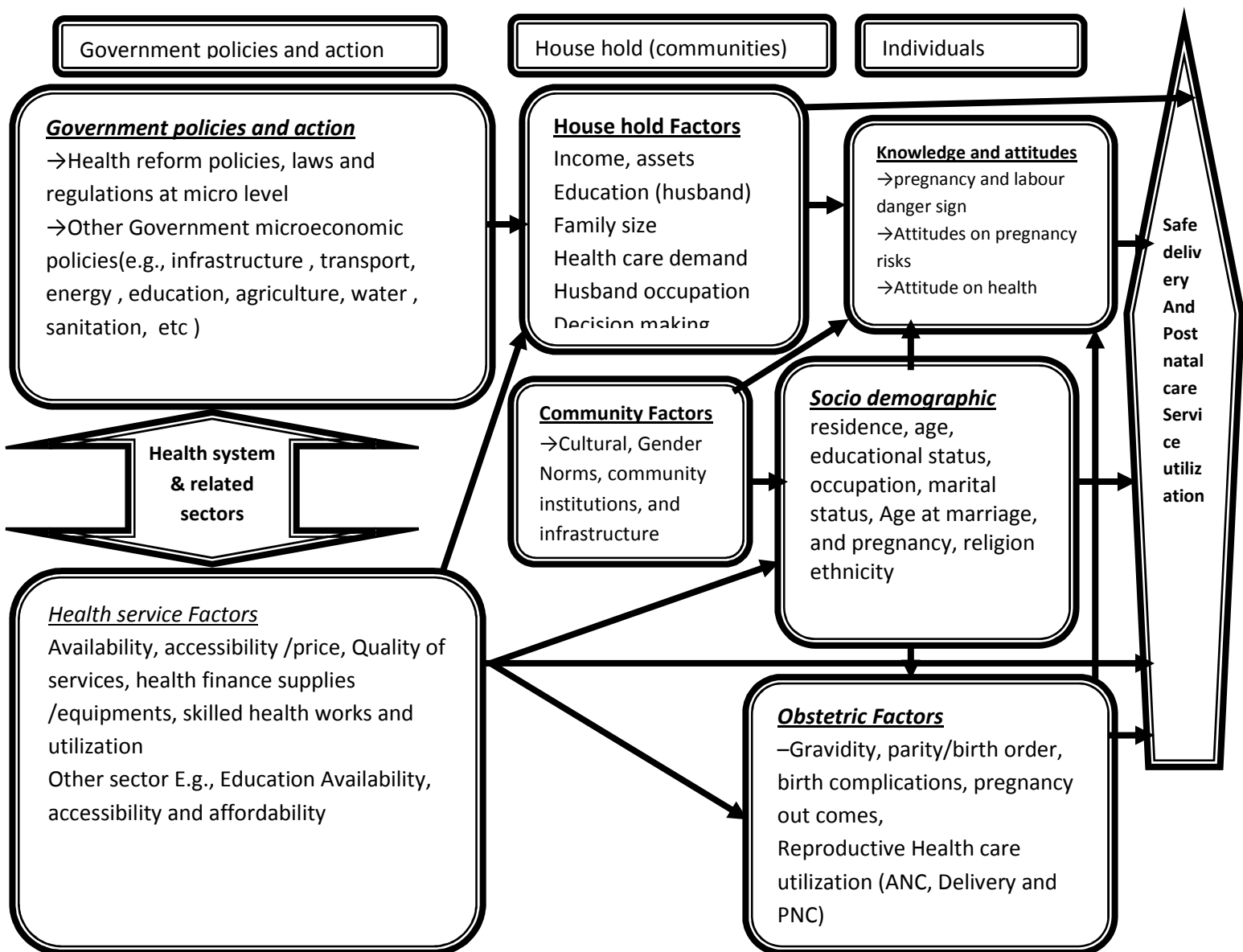
In Jordan, distance of place of residence from the services and time and cost of traveling to services had a highly significant association with non- use of the MCH services. Higher Education level is often associated with MCH use (26, 27). The poorest and least educated people tend to report more traditional practices while the more educated & wealthier women tend to report more western or bio medical health practices (28,29)

A study conducted in North Gondar revealed that the proportion of births delivered in health facilities is low in the area. Demographic and socio-cultural factors were found to be barriers to the utilization of safe delivery services. Educational status of the mothers, place of residence, access to radio, monthly income, prenatal care, history of intrapartum complications of the respondents showed statistically significant association with the utilization of safe delivery services in Gondar North Ethiopia. (9)

In Ethiopia 2005 DHS, the utilization of safe delivery and post natal services were less than 10% and only a quarter (27 %) of women uses ANC (). In West shewa according to the 2008 official report ANC, professionally assisted delivery (PAD) and post natal health care services coverage were 38, 6.8 and 11 percent, respectively (30). The ANC, PAD and PNC services coverage in Ambo town in the same year were 72, 6.1 & 45%, respectively. (25).

CONCEPTUAL FRAMEWORK ON MATERNAL HEALTH CARE UTILIZATION

Below is shown a conceptual framework adopted from one developed for analysis of reproductive health outcomes (36). The arrows in the diagram show the interactions and interrelation between the variables. The diagram shows that safe delivery service utilization is affected by governmental policies, regulations on health and related sectors. It is also affected by community and house hold factors those influence the individual level factors. All factors in the conceptual frame work do not assessed in this study because of logistic and time factors.



III. OBJECTIVES

3. 1. GENERAL OBJECTIVE

To assess coverage (extent of utilization) of safe delivery and post natal care services and factors influencing the utilization of the services by mothers in Ambo

3.2. SPECIFIC OBJECTIVES

- 3.2.1. to determine magnitude of utilization of maternal health services and common delivery practices (institutional).
- 3.2.2. To assess the socio demographic and economic factors of reproductive age women affecting safe delivery and Post natal care utilization in the study area
- 3.2.3. To identify maternal knowledge and attitude on obstetrical risk that affect utilization of the services in the study area.
- 3.2.4. To assess health system factors affecting women's attendance and institutional utilization of safe delivery and post natal care in the study area

IV. METHODS AND MATERIALS

4.1 STUDY DESIGN AND PERIOD

Study design: It employed quantitative methodology supplemented by qualitative design

Quantitative A community based cross-sectional house hold survey among women who gave birth during the five years preceding the survey, record review

Qualitative: FGD, key informant interviews with health experts, observation of facilities and their equipments, review of relevant documents was conducted.

Study period: the study was conducted from March to April, 2009

4.2 STUDY AREAS

The study was conducted in Ambo Town and its surrounding area of West Shewa zone, Oromia region, and located 114km west of Addis Ababa. It has 6 urban kebeles and 4 rural peasant association surrounding and located at the altitude of 2100 metres above sea levels with temperate climate. The projected total populations for 2008 of town based on projections from 2007 population and housing censuses of CSA estimated to be 50,269 and with expected number of child bearing age women (CBAW) 11,713(23.7%). In the town there is one Zonal hospital, 1 Health centre, 1 maternal and child clinic (MCHC) and 2 Health posts which belongs to Government, 12 nongovernmental (1Meri Stops International 11private Health Institutions). The surrounding Ambo rural area has 4 kebeles with a total population of 12567 and out of this the expected number Child bearing age women (CBAW) is 2928. CBAW make up about 23.7% of the population and approximately 3.73% becomes pregnant annually (27).

There is one university collage and a total of 2 public & 5 private collages, two senior, six elementary, two junior & secondary schools in the town. The literacy rate of Ambo town is estimated at 72%. There is a 24 hours hydro electric power supply & more than 90% of the total population has accessed to piped water. Land transportation services and modern digital microwave telephone system are

available in the town. Oromo followed by Amahara ethnic groups are the dominant native of the area with the Orthodox Christian dominant religion followers. The main language spoken in the area is Afan Oromo and Amharic (25, 31, 32,).

4.3. Population:

4.3.1. Source population: Child bearing age women (CBAW) and those permanently reside in the study area

4.3.2. Study population: CBAW and who had given birth in the study area.

4.3.3. Study Participants: Sample of CBAW who had given birth at least once in the last 5years prior to the survey.

4.3.4. Study Unit : Individual Women

Inclusion and exclusion criteria for the study population

Inclusion criteria:

- ♥ Women in reproductive age group residing in the study area for at least 5 years prior to the survey or Permanent resident of the study area
- ♥ CBAW who had given birth at least once in the last 5years preceding the survey
- ♥ Women, who were mentally and physically capable of being interviewed

Exclusion criteria

- ♥ Women, who were not in their reproductive age, critically ill, could not talk listen or mentally ill, and those who lived less than five year at the time of the interview are excluded from the study.
- ♥ The legally under aged for verbal consent 15-17 years age group were excluded from the study.

4.4. The sample size determination

Sampling technique: Probability, multistage sampling technique was used

Sample size determination: Sample size is calculated using EPI-Info version 6.04 statistical software programs for two population proportions formula:

$$n_1 = \frac{[Z_{\alpha/2} \sqrt{(1+1/r) P (1-P)} + Z_{\beta} \sqrt{P_1 (1-P_1) + P_2 (1-P_2)}]^2}{(P_1 - P_2)^2 r}$$

To determine the sample size the following assumptions were made:

Education or maternal literacy is a major factor determining utilization of safe delivery care in Ethiopia. Birth order, ANC use and previous birth complication identified as a determinant factors for use of Safe delivery and postnatal services. (10, 34)

Where, n_1 = Sample size of women who gave birth in Health Institution

n_2 = Sample size of women who gave birth at home

$r = n_1/n_2 = 2$ for the population allocation ratio (ratio of women delivering at HI (n_1/n_2) since service utilization is as low as 6% in the area 3:1 ratio will be taken)

$Z_{\alpha/2} = 1.96$ for the standard scale of significance level of 95% level of confidence,

Z_{β} = standard scale of 1.28 corresponding to a 90% for power to detect a difference of $(P_1 - P_2)$

P_1 = Proportion for educated women or attended at least secondary education who had given birth at health facilities, 26 %. (10)

P_2 = Proportion of women attended at least secondary education who had given birth at home 7.8%, Taken for uneducated women attended Safe delivery for lack of study in the region.

$$P \text{ (pooled population proportion)} = \frac{P_1 + rP_2}{(1+r)} = 0.12$$

The sample size is 65 women who delivered at HF and 195 delivered at home were required. Considering a design effect of two, and non-response rate of 10 % the total calculated sample size of 581 women (116 women delivered at Health Facility and 465 delivered at home) were required.

4.5. Sampling procedures

Ambo towns and its surrounding area was purposefully selected for logistical reasons and to represent accessibility of health services in the region. From the total of six kebeles (clusters) from the town a random sample of three kebeles (clusters) and also from the total of four kebles from the surrounding one Kebele was selected using population allocation ratio (from the respective strata proportional to their size). Expecting every households (HHs) to host at least one woman who had given birth in the last five years on average, HHs were taken as a final sampling units. Estimate of the number of HHs per kebele was taken from West Shewa zone CSA department (31,32).

Then to obtain 581 study subjects cluster sampling techniques was used until the required sample sizes are achieved. The first households were chosen near the Kebele Council as a starting point by drawing a number. Households with no eligible women were excluded from the study. After a successful interviewe of each household the interviewer continued to the right side of the next household that were selected by systematic sampling technique until the required sample size was achieved (See Figure 2.A, next page).

For the qualitative design non-probabilistic convenient sampling technique is used to obtain homogenous groups for each category of focus group discussion (See Figure 2.B, the next page). Six key informants were purposefully selected from Zonal and wereda health sectors. Ambo hospital and Ambo HCs were purposefully selected for record review and observation.

Figure 2.A: Schematic presentation of sampling procedure for Quantitative method

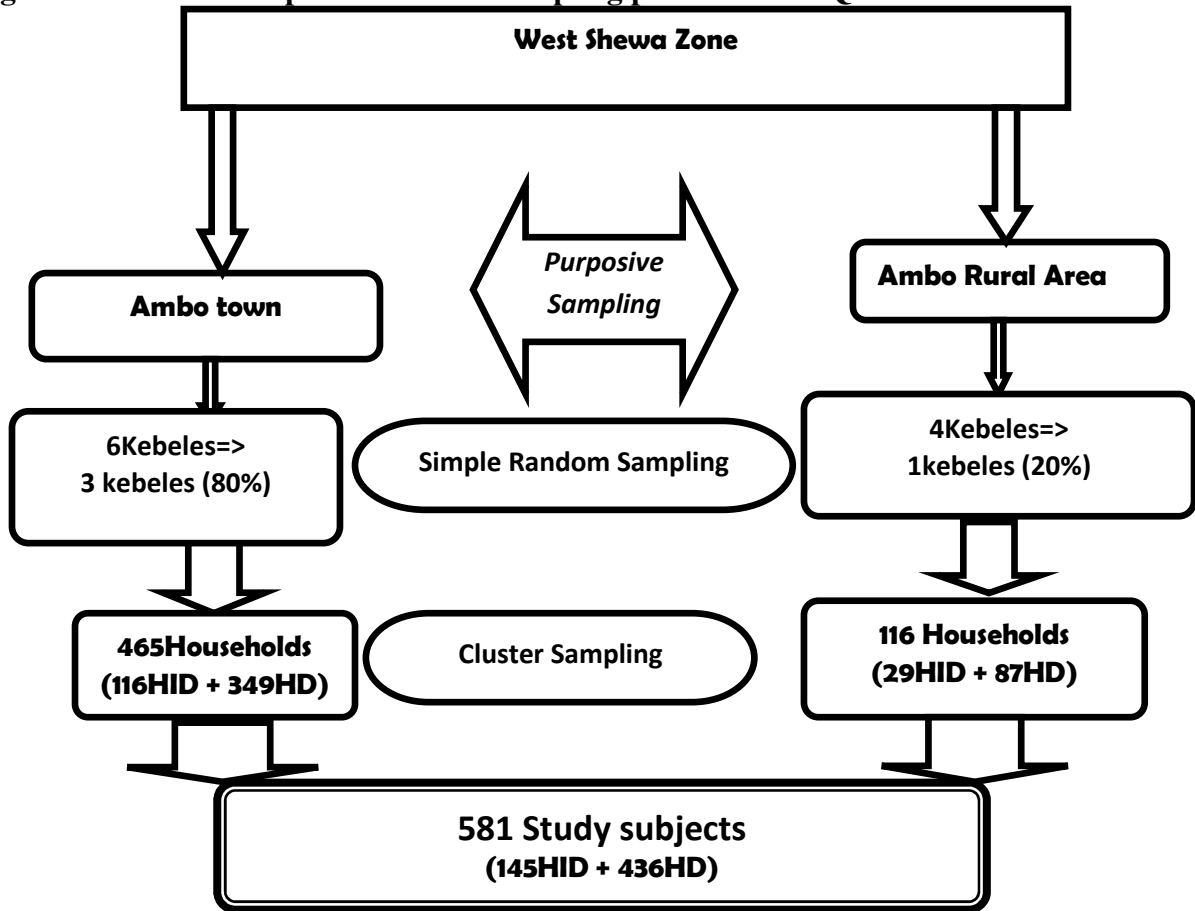
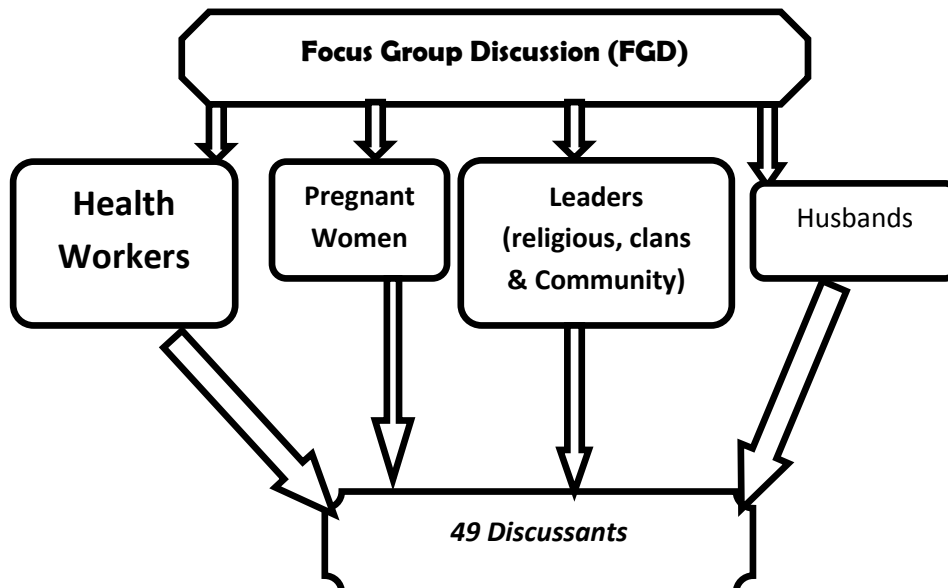


Figure 2.B: Schematic presentation of sampling procedure for qualitative method



4.6.Measurement/variables (Questionnaire)

4.6.1 Dependent Variables

- **Safe delivery service and care Utilization** Appropriate place of delivery, Type of delivery and Skilled attendance for delivery
- **Post natal service utilization**

4.6.2. Independent variables are:

- **Socio demographic variables-** mother's age, Religion, education, occupation (including income-producing occupation or unearned income), residence (urban vs. rural).
- **Obstetrics characteristics-** Age at first pregnancy, gravidity, parity, birth order, ANC use, Children birth complications
- **Knowledge and attitude on obstetric risks,** HF delivery service, danger sign of pregnancy, labour and then after, benefits of safe delivery and risk of home delivery
- **Health facility factors-** distance, availability, service fee, supplies, facilities and equipments, (provider attitude and skill client-provider interaction)

4.7. Data collection technique

4.7.1 Data collection Method:

- A. Face to Face interview
- B. Focus Group Discussion
- C. In-depth interview of key informant
- D. Review of relevant documents
- E. Observation of HF equipment and supplies check list

4.7.2. Data collection Tools:

- A. **Structured Questionnaire:** that adopted from DHS and related thesis works (9, 10, and 11). The English version of the questionnaires were translated into 'Amharic' and 'Afan Oromo' for better understanding by both data collectors and respondents. Consistency was checked by translating the Amharic and Oromic back to English by another individual.

B. Semi-structured interview guide- open ended interview questions are prepared for FGD participants

4.7.3 Data Collection procedures:

Selection and Training of data collectors and Supervisors: two HEWs and eight nurse who are fluent speakers of local languages and three Nurse supervisors from the respected kebeles of rural and urban were selected. The selection criteria of data collectors include ability to speak the local languages, interest to participate in the survey, being well mannered and disciplined, reliability and punctuality at work. They were trained for 3 days before the actual survey by principal investigator (PI).

The method of training includes explanation supplemented with practical role play exercises that covers purposes of the survey, meaning of each question technique of interview and role & responsibility of data collectors and supervisors. One data collector administers the survey questionnaire to another while the other looks on followed by a critical evaluation and discussion of the interview with the group. During data collection the principal investigator was supervising the data collectors and supervisors. And samples of respondents were re-interviewed by investigator at random bases among data collectors and the result was cross-checked. Data were collected by utilizing the prepared format consisting of different variables. The formats were filled by trained data collectors or by health workers. All questions were tested before administration.

4.8. Pre-test

A pre-test employed prior to full scale research to test the instrument and strategies by using 30 eligible women in neighboring Kebeles.

4.9. Data processing and analysis

Data were first checked and arranged manually by the PI. To increase the quality of the data adequate time was given to the respondents and completeness of data was checked. The collected data was compiled and entered into EPI Info version

6.04. The entered data was transferred to SPSS version 11 computer software for further processing. The data was then cleaned by visualizing, calculating frequencies and sorting. Corrections were made according to original data.

Finally Analysis of univariate was done using frequencies & percent. Bivariate analysis between dependent and independent or independent and independent variables were performed using frequency, X^2 and binary logistic regressions respectively. Multivariate analysis was done to control (adjust) for possible confounding variable. Those variables which are showed significant association on bivariate analysis were adjusted to each other to identify independent determinants. During the analysis P-value and/or 95% confident interval or odds ratio were used in judging the significance of the association. P-value <0.05 or CI not containing 1 were taken as significant association. Results were presented in texts, tables, graphs and charts.

4.10 Ethical consideration

Official letters were written by SPH, AAU to the respective regional and Zonal officials of the study area. Informed Verbal Consent of the respondents and the leader of the area were obtained after giving information and thoroughly explaining the aim of the study to each respondent. Indicate that participants were told participation was voluntary, could withdraw any time or refuse to answer to any question if they wanted to. The subjects were interviewed in their homes individually to maintain privacy. They were not being required to give their name. No information concerning the individual was passed to a third party.

The legally under age group 15-17 years were excluded from the study. As the study is based on interviews it carries no or minimal risk. The finding of the study was provided to Ambo town and its area, Zonal and Regional health offices to update the information and make use of it/for intervention. The study was approved by **IRB** (Institutional Review board) and performed under the supervision of the SPH, MF of AAU.

4.11. OPERATIONAL DEFINITIONS

Access to health facilities- the pregnant women being no more than an hour from health facilities by local means of transportation, or availability of health facility within one hour's walk or travel

Ante natal care- Appropriate health care given during pregnancy by skilled attendants

Attitude- opinion, point of view, feeling or way of thinking of the mother and /or husband on using safe delivery & PNC services to avoid prolonged or obstructed labour and manage it to avoid complication

Awareness- knowledge or conscious of the mother, level of information; e.g., knowing at least three or more danger sign of pregnancy or its outcome/labour

Behaviour- way of behaving or acting towards utilization of the services

CBAW (Child Bearing Age Bearing) - Any women age 15 to 49 years old irrespective of fertility status

Delivery of Health Care- providing appropriate health care which is available, affordable and accessible

Health Services- provision or supplying of a health care needs for the mother

Home Care-providing necessary health care at home for mothers by skilled attendants

Home Delivery- delivery took place at locations other than health facilities or delivery took place at residential home.

Post natal care - health care given after child birth for the first 6weeks

Pregnancy- time from conception to child birth

Pregnancy Complications-ill-effects arising from pregnancy /

Safe Delivery – delivery attended by skilled birth attendants

Service Utilization-attaining the needed delivery and PNC services efficiently and effectively **or** using maternal health care services wisely (effectively)

Safe Motherhood- ensuring that all women receive the care they need to be safe and

Skilled Birth Attendants -person who has the ability to manage labour in safe way or people with midwifery skills (Doctors/Health Officers, midwives/Nurses or other qualified health professional (e.g., HEW) but not including TBAs

Traditional Birth Attendants- Person who assist delivery at local without adequate training on safe delivery (child birth).

V. RESULTS

A. QUANTITATIVE

5.1 SOCIO DEMOGRAPHIC PROFILES

All 581 women participated in the study making the overall response rate 100%. Most 338(58%) of the respondents were in age group 18-29 with the mean \pm SD 28.8 \pm 6.1 and the median age of 28.0 years. Four hundred sixty nine (81%) and seventy seven (13%) of the respondents belong to Oromo and Amhara ethnic groups respectively.

Thirty six percent of the women have never attended any formal education or illiterate and 6.2% were engaged in paying jobs or civil servant by occupation. 432(74%) were currently married. 432(74%) and 114(20%) of the mothers were orthodox and protestants Christian religion followers.

Sixty five percent of the respondents earned below 500 and with the median of 400ETB per month. The total monthly household's income was ranging from 30 to 3500 ETB. About 43% of the houses were constructed with thatched roof and forty one percent of the women reside in their own private houses. Majority (81%) of the respondents had either TV and/or Radio in their houses. The details of Socio demographic and economic characteristics of the respondents are summarized in table 1.

Table 1. Selected Socio-demographic determinants of Mothers in Ambo town and Its Surrounding Area, West Shewa Zone Oromia Region, Ethiopia, 2009

Variables(n=581)	Frequency	
	Number(N=581)	Percent
Residence Urban	465	80
Rural	116	20
Age 18-29	337	58
30-39	209	36
40-49	35	6
Education Illiterate	207	36
Only Read &write	26	4.5
Elementary	201	35
Secondary and above	147	25.5
Ethnicity Oromo	469	81
Amhara	77	13
Other	35	6
Occupation House Wife	461	79
Merchant	39	6.7
civil Servant	36	6.2
Student	28	4.8
Maid Servant	13	2.2
Other	4	0.7
Religion Orthodox	432	74
protestant	114	20
Muslims	20	3.4
Catholic	13	2.2
Other	2	0.3
Marital Status Married	520	89.1
Divorced	26	4.5
widowed	12	2.1
never married	23	4
Income <150	75	13
150-500	301	52
>500	205	35.6
Family Size one to two	52	9
three to four	220	37.9
five and more	309	53.2
Husband Attitude Positive	414	71
Negative	92	16
Don't Known	75	13
Average travel time < 1hour	532	91.6
>1hour	49	8.4

5.2 Obstetric characteristics of the respondents

About 80% of the mother married with the mean age \pm SD of 19.4 ± 2.8 years at first marriage and 58% become pregnant before the age of 20 years. The mean \pm SD number of gravidity and parity of the mother were 2.94 ± 1.7 and 2.85 ± 1.6 per woman. Out of all of the respondents, 23% had been pregnant only once and 17% were pregnant more than five times in their life. (See Table 2)

One hundred fifty four (27%) of the respondents had had at least one live birth and 8% had encountered at least one bad obstetric out come. Seventy nine (14%) mothers faced at least one complication of labour during next to last birth.

Twenty six (4.4%) of the respondents are pregnant of whom 12(46.2%) were unwanted pregnancy (majority want to space and some want to limit). Sixty eight percent (389) of the respondents received ANC at least once and 47% of the mothers had four or more visits during their last pregnancy. The details of obstetric characteristics of the respondents are summarized in the following fig.3-6 and table 2 & 3.

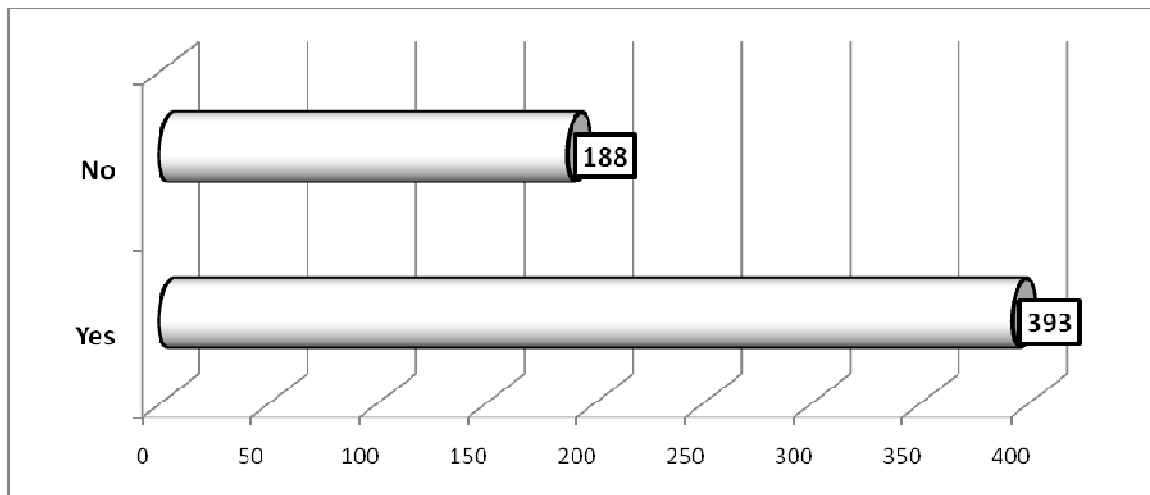


Fig 3. ANC use during their last pregnancy of Ambo Mothers, West Shewa, 2009

Majority of the respondents (75%) gave their last child birth at home. From the total health facilities 145(25%), 117(20%) of them gave birth at hospital, 27(4.6%) mothers gave birth at Health centre and 1(0.2%) of them gave birth at health station. (summarized in fig 4).

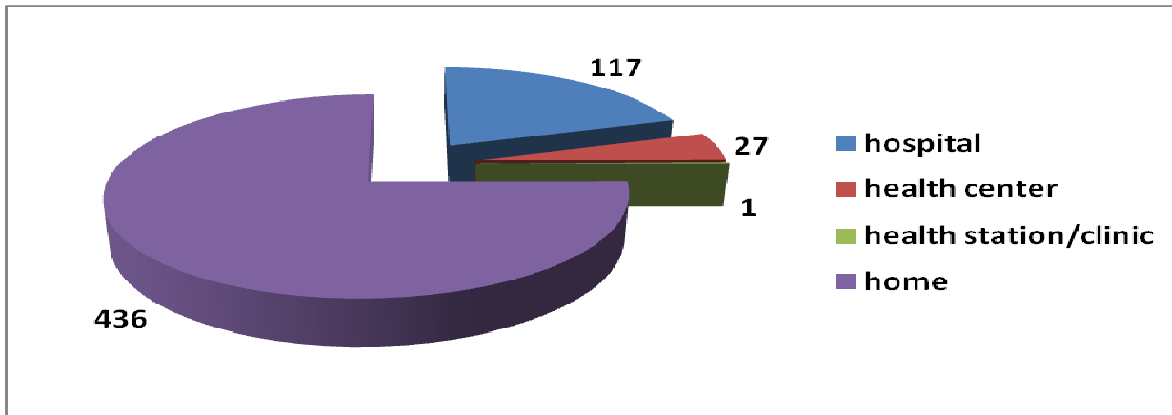


Figure 4. Showing Delivery places of Ambo mothers of West Shewa, Mar, 2009

The most commonly raised reason for home delivery were need to be with relative 278 (48%) followed by absence of knowledge about institutional delivery 178(31%).

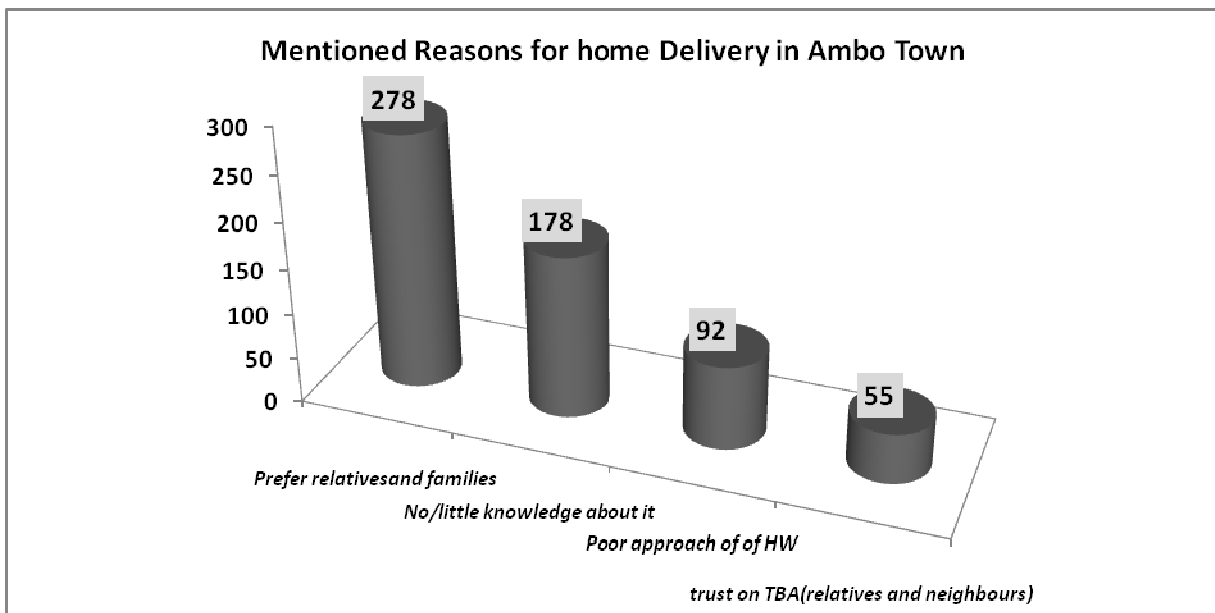


Fig 5 Reasons mentioned for home delivery West Shewa Zone, March 2009

Table.2 Selected Obstetric characteristics of women of Ambo, West Shewa Zone, Ethiopia, 2009 (n=581)

Variables	Frequency	
	Number	Percent
Age of First marriage		
<17	94	16
17-25	469	81
>=26	18	3
Age of First pregnancy		
<=17	43	7
18-25	506	87
>=26	32	6
Number of pregnancy		
1	136	23
2-4	348	60
5+	97	17
Number of Delivery		
1	143	25
2-4	350	60
5+	88	15
Time of last pregnancy and delivery		
<=2	352	61
>2	229	39
Birth order		
1	280	48
2-4	213	37
>4	88	15
Received ANC last pregnancy		
Yes	393	68
No	141	22
Trimester when ANC Started		
First	39	10
Second	211	54
Last	115	29
Don't remember	28	7
History of pregnancy related Problem		
Yes	79	14
No	499	86
Don't remember	3	0.3
Place of delivery		
Home	436	75
Health facility	145	25
Received PNC After last pregnancy		
Yes	98	17
No	482	88

Reasons for using a health facility includes because of high quality 104, good approach of health workers (71) , closer or nearest to their house or where the respondents live 15(2.5%) & followed by need for better care.

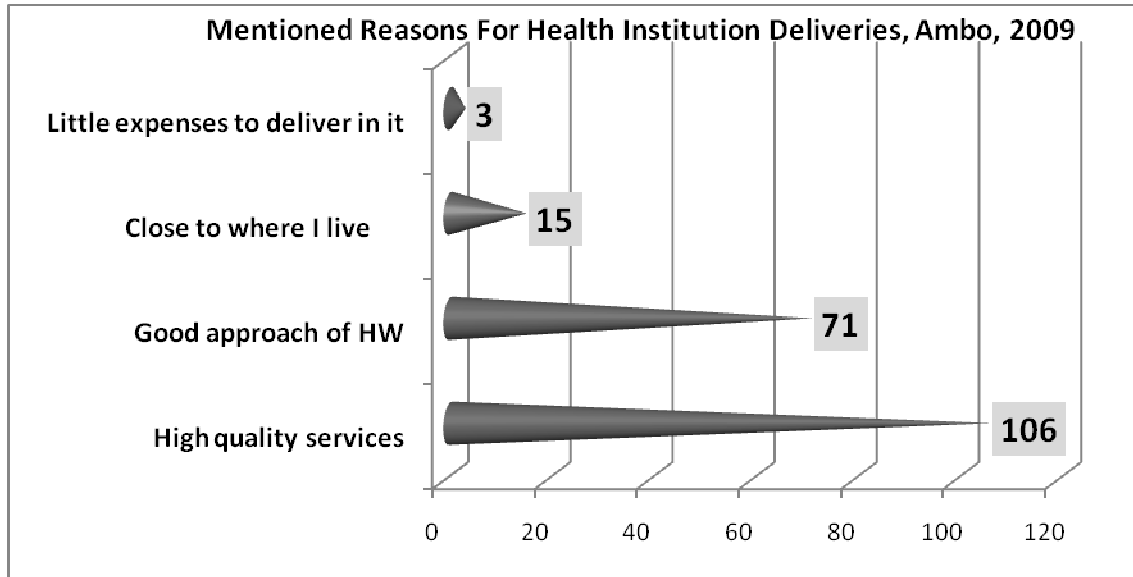


Fig 6. Reasons for HF delivery, West Shewa Zone, Ethiopia, March 2009

Seventy nine (14%) of the respondents experienced health problems during their last pregnancy. On the other hand sixty two (11%) of mothers encountered at least one child birth complication during their last delivery, for which 43 (7.4%) were taken to a health facility. With regard to the mode of deliveries 554(95%) had spontaneous vaginal delivery (SVD) and 8(1.7%) by caesarean section (C/S). Among the complications, excessive vaginal bleeding and prolonged labour occurred in 24(4.1%) and 16(2.4%) of the mothers, respectively. 198 (34%) and 100(17%) of the mothers who gave birth at home were assisted by close relative and neighbours during their child birth. Different reasons were mentioned for place of delivery for the last birth. Details of the variables are summarized in table 2 and fig 3-6.

Only 98(17%) of the mothers used PNC after their last child birth. From the PNC users, 28(4.8%) paid for health service in governmental health institution with the median of 35.60 ETB. This was affordable to 24(85.7%) mothers. Majority 70(71.4%) of the mothers went for PNC after one week of delivery and 69(70.4%) of them attend not more than three times. From the main reasons of the mothers (389, 164, 81,)mentioned were being in state of good health condition, no awareness about PNC, too busy and other reasons for not attending PNC, respectively. (Depicted in the following -Figure-7).

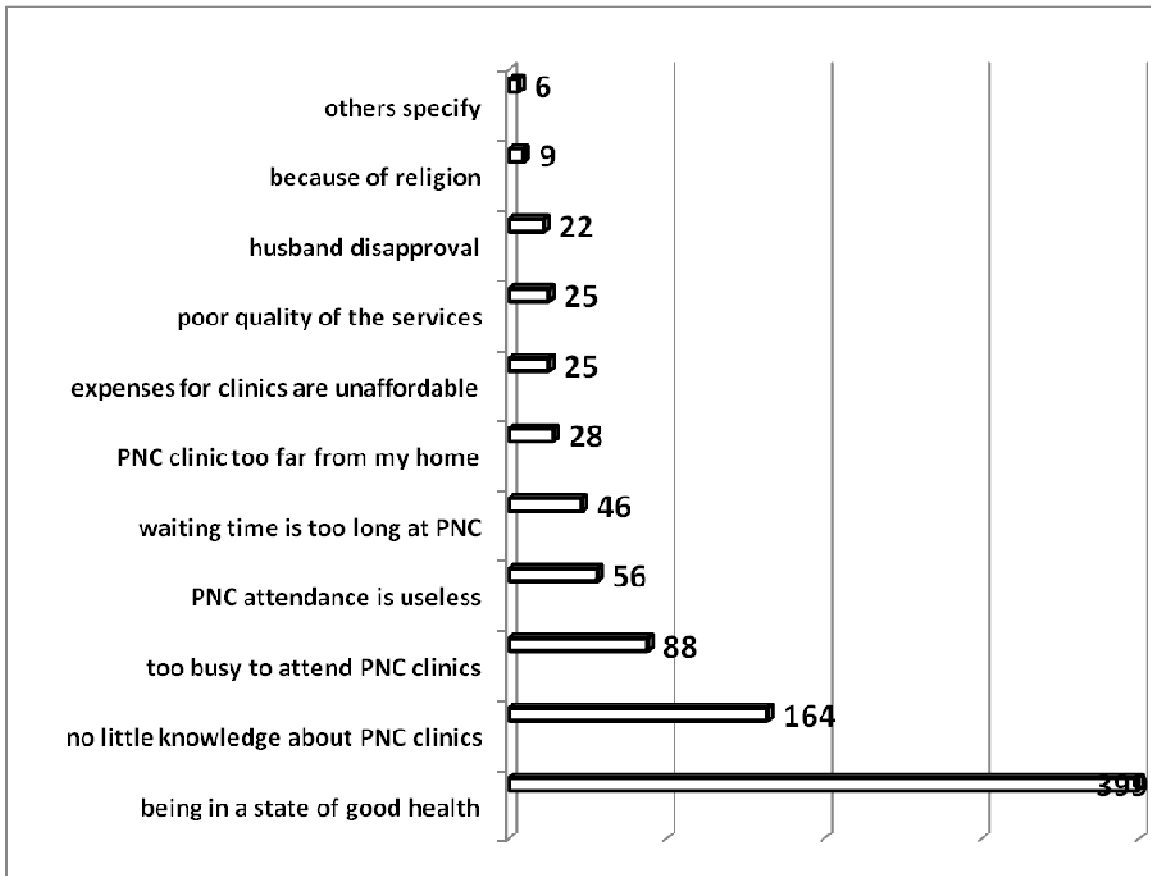


Figure 7- Mothers Reasons for not attending PNC, Ambo, oromia, Ethiopia, 2009

5.3 Knowledge and Attitude about pregnancy, labor and delivery service

One hundred seventy eight(31%) of the mothers knew at least one of the pregnancy risks & named correctly at least one of the accepted danger signs during pregnancy. Of these

87, 72 and 64 mothers mentioned sever headache, leg swelling and persistent vomiting as the danger health problems, respectively.

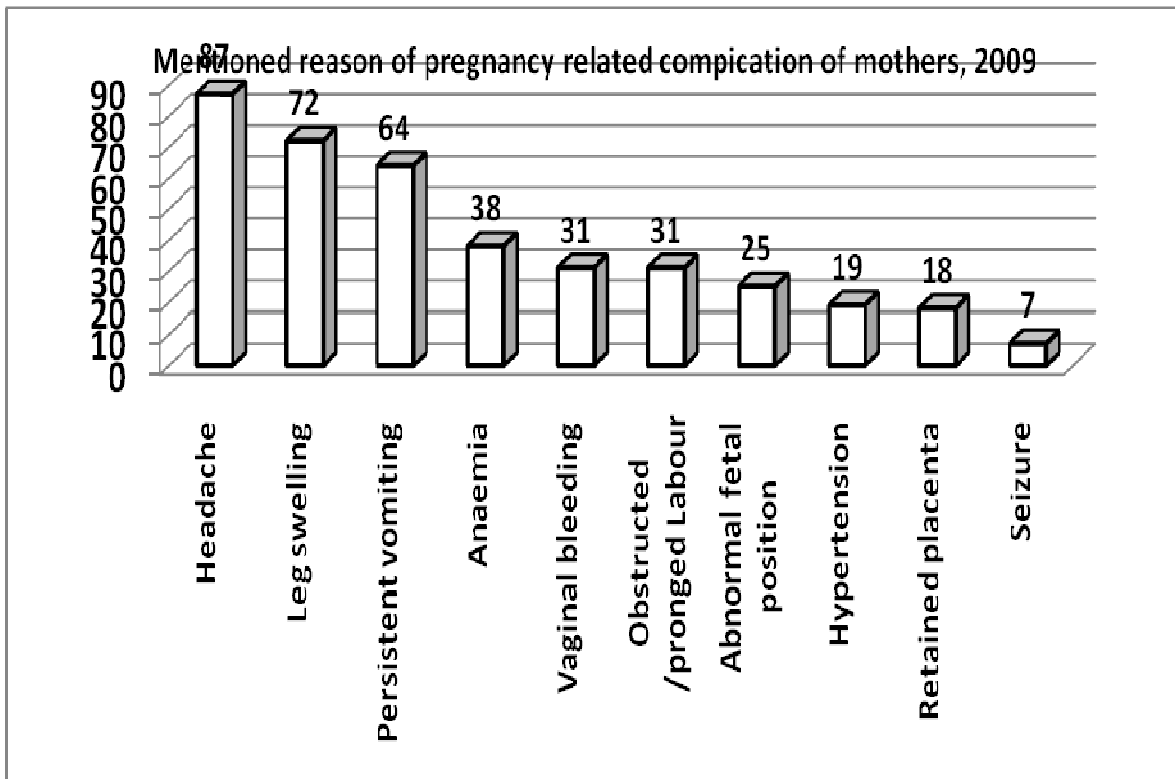


Fig 8 Mentioned danger signs of pregnancy West Shewa Zone, Ethiopia, March 2009

Sixty mothers knew at least one key danger sign during labour of whom 24(4.1%) said excessive vaginal bleeding followed by prolonged labour 16(7.8%).

Table 3. Danger signs of labour Mentioned by Mothers of Ambo town, March 2009

Danger signs of labour	Frequency	
	No	Percent
Excessive vaginal bleeding	24	4.1
prolonged labour (>12 hrs)	16	2.8
retained placenta (>1hr)	7	1.2
foetal death	5	0.9
mal-presentation	4	0.7
loss of consciousness	2	0.3
inability to control urine/faces/both	1	0.2
early rupture of membrane	1	0.2

Twenty (33%) of mothers, had mentioned at least three danger signs and labelled as good knowledgeable. Five hundred thirty three mothers know benefits of health facility delivery. 387 (66%) mothers were aware of the risks of delivering at home in the absence of trained health professionals. On the other hand, regarding attitudes of respondents 491 (85%) and 305 (52%) of the respondents had favourable attitudes towards pregnancy related health problem or risks and health facility delivery care, respectively.

Table 4 Knowledge and attitudes of respondents towards pregnancy, labour and delivery service, West Shewa Zone, Ethiopia, March 2009

Variables	Frequency	
	No	Percent
Know HF delivery benefits		
Yes	533	92
No	48	8
Know risks of home delivery		
Yes	387	66
No	197	34
Know risks of pregnancy		
Yes	178	31
No	403	69
Know pregnancy danger signs		
Yes	178	31
No	403	69
Know labour danger signs		
Yes	346	60
No	235	40
Attitude to pregnancy risk		
Favourable	491	85
Unfavourable	90	15
Attitude to HF delivery service		
Favourable	305	52
Unfavourable	278	48

Table 5. Mothers Attitude towards maternal health service utilization of Ambo,2009

Variables	Agree [@]	Disagree	In different
Do you belief that as most complications of labour are preventable & treatable	346(60)	200(34)	35(6)
Any pregnant women are susceptible to face delivery complications.	463(80)	77(13)	41(7)
Like any pregnant women, I am susceptible to face delivery complications.	384(66)	156(27)	41(7)
Delivery complications can be severe and may be hazardous to my well being.	337(58)	196(34)	48(8)
Delivery complications can be severe and may be hazardous to the newborn.	432(74)	101(18)	48(8)
Being attended by a skilled delivery attendant may be beneficial to my well being.	483(83)	50(9)	48(8)
Being attended by a skilled delivery attendant may be beneficial to my newborn's well being.	491(84)	37(6)	53(10)
Do you belived that in the nearest Health Institution all skilled delivery attendants are skilful to diagnose and treat delivery complications can alls refer early?	371(64)	135(23)	75(13)
Do you belive that the nearest Health Institution fully equiped with basic Delivery Equipments & supplies?	305(52)	180(31)	96(17)

[@]Eventhough there is low delivery and post natal health care services, majoroty (greater than two third) of the mother agree on the favourable maternal health care service utilization.

5.4 Health service /care use

The majority 532(91.6%) of the respondents lived within one hour walking distance of at least health post (HP) from their home and 371 (64%) mothers said the nearest facilities provided delivery care. 127(87.6%) of the mothers paid for the most recent health facility delivery above the median 40ETB.

Table 6 -Health service utilization and Husband Approval, West Shewa Zone, Ethiopia, March 2009

Variables	Frequency	Percent
Walking hrs to nearest HF		
<1	532	91.6
>=1	49	8.4
HF providing delivery care		
Yes	371	64
No	210	26
Paid for delivery service(n= 145)		
Yes	127	22
No	454	78
Paid for PNC service(n= 98)		
Yes	28	23
No	70	71
Opinion on the payment (n= 28)		
Unaffordable	4	15
Affordable	24	85
Husband Positive attitude for safe delivery & PNC care		
Yes	414	71
No	167	19

5.5 Bivariate and Multivariate analysis

5.5.1 Bivariate Analysis

Crude analysis of socio-demographic variables on binary logistic regression showed that safe delivery service utilization in the study area was significantly associated to maternal education, marital status, house hold income, the ownership (tanner) of the house and house construction, access to radio and/or TV (having radio and /or TV in their house), previous use of PNC and its payment, positive attitude of husband, and distance of walking in between mothers home and service delivery unit. . But residence, occupation, and religion of the respondents did not show statistical association with health institution delivery (HID)or safe delivery service utilization.(See table 6) On the other hand PNC services usage in the area is also significantly dependent upon mother's residence, ethnicity, education, income, tanner status, family size, number of pregnancy, child birth or delivery and its time and place of delivery at $P < 0.05$.

ANC use, ANC frequency, mode of delivery during last child birth, presence of immediate and preceding birth complications were significantly associated with HID at $p < 0.05$. But women gravidity, birth order, age at 1st pregnancy, planning pregnancy and previous bad pregnancy out comes were not significantly associated with safe delivery service utilization. Moreover, maternal knowledge on benefits of giving birth at HF, danger signs during pregnancy and labor and favorable attitude towards health facility delivery were significantly associated with delivery at a HF $p < 0.05$. Women whose husband had positive attitude for HID and able to pay for the fees were more likely to give birth at health facilities

5.5.2 Multivariate Analyses

A multivariate analysis involving all associated variables was performed to identify independent predictors of safe delivery service utilization. Consequently, maternal education, income and prenatal care use prior births independently showed significant association. More educated mothers who had better income were more likely to deliver at HFs. The details are summarized on the table 7-9.

Table7.Determinants of safe delivery service utilization by Ambo mothers, 2009

Variables(n=581)	Delivery Places		Crude OR (95% CI)	Adjusted OR (95% CI)
	Home(n=466)	HI(n=116)		
Age **				
19-29	253	84	1	1
30-39	155	54	0.93(0.43-2.00)	1.50(.54-4.19)
40-49	28	7	0.63(0.13-2.84)	1.56(.54-4.51)
Education*				
Never attend	175	32	1	1
Elementary	177	50	0.31(0.19-0.54)	0.06(0.01-0.45)
Secondary & above	84	63	0.43(0.27-0.86)	0.34(0.20-0.57)
Ethnicity*				
Oromo	361	108	1	1
Amhara	54	23	0.45(0.21-0.91)	0.09(0.01-0.76)
Other	21	14	0.64(0.28-1.47)	0.12(0.01-1.14)
Occupation*				
House Wife	318	113	1	1
other	88	32	1.12(0.71-1.77)	0.36(0.22-0.58)
Religion **				
Christian	14	6	1	1
Muslims	422	139	1.30(0.49-3.01)	1.36(0.41-4.47)
Marital Status **				
Married	385	135	1	1
Divorced	21	51	3.60(0.85-15.70)	0.50(0.06-4.06)
widowed	9	3	2.48(0.43-14.16)	2.30(0.41-11.9)
never married	21	2	3.47(0.49-24.30)	1.10(0.12-9.77)
Income *				
<150	70	5	1	1
150-500	240	61	0.11(0.04-0.30)	0.42(0.24-0.71)
>500	126	79	0.41(0.27-0.60)	0.58(0.26-0.30)
Family Size **				
one to three	113	41	1	1
four to Six	246	79	0.89(0.57-1.37)	0.47(0.22-0.997)
seven and more	77	25	0.90(0.50-1.59)	1.22(0.39-3.88)
Average travel time*				
< 1hour	392	140	1	1
>1hour	44	5	0.32(0.12-0.82)	0.08(0.00-1.08)

*Statistically associated at $p < 0.05$ **Adjusted for socio-demographic, obstetric, knowledge and attitude variables those showed no significant association during bivariate analyses

Table 8 Determinants of PNC utilization, Ambo, West Shewa zone, Central Ethiopia, March, 2009

Variables(n=581)	Post natal care USED		Crude OR (95% CI)	Adjusted OR (95% CI)
	Yes (n=98)	No (n=483)		
Age **				
19-29	53	284	1	1
30-39	38	171	0.91(0.21-2.82)	1.32(0.19-9.13)
40-49	7	28	0.83(0.28-2.34)	1.01(.14-7.26)
Education **				
Never attend	26	181	1	1
Elementary	35	192	0.79(0.46-1.36)	0.92(0.11-7.65)
Secondary & above	37	110	0.43(0.25-0.74)	1.10(0.13-9.15)
Income *				
<150	10	6	1	1
150-500	40	261	1.00(0.48-2.11)	0.92(0.11-7.65)
>500	48	157	0.50(0.24-1.06)	1.10(0.13-9.15)
Occupation**				
House Wife	78	383	1	1
other	20	100	1.02(0.60-1.74)	1.64(0.96-2.79)
Religion**				
Christian	92	450	1	1
Muslims	6	33	1.12(0.46-2.76)	2.17(1.26-3.74)
Marital Status **				
Married	87	433	1	1
Divorced	6	20	2.14(0.64-7.24)	0.59(0.12-2.95)
widowed	0	12	1.31(0.28-6.17)	96(0.00-111.9)
never married	5	18	889(0.000-1.20)	0.81(0.21-4.53)
Family Size*				
one to three	29	125	1	1
four to Six	44	281	1.4(0.76-2.56)	0.84(0.46-1.55)
seven and more	25	77	2.1(1.20-3.60)	0.22(0.08-0.59)
Average travel time*				
< 1hour	87	445	1	1
>1hour	11	38	1.68(0.33-1.37)	0.34(0.11-1.03)

*Statistically associated at $p < 0.05$ **Adjusted for socio-demographic, obstetric, knowledge and attitude variables those showed no significant association during bivariate analyses

Table 9. Association of Obstetric determinants and safe delivery services among Ambo mother, West Shewa Zone, Central Ethiopia, Mar., 2009

Variables	Place of Delivery		Crude OR 95% CI	Adjusted OR 95% CI
	home (n=466)	HF (n=145)		
Age at 1 st pregnancy**				
≤17	34	9	1	1
18-20	382	12	0.37(0.00-1.35)	1.33(0.29-6.18)
>20	20	12	0.34(0.14-0.86)	0.78(0.60-9.89)
Number of pregnancy**				
1	97	39	1	1
2-4	268	80	8.12(0.70-95)	0.74(0.25-2.22)
≥5	71	26	0.78(0.22-2.72)	0.78(0.60-9.90)
Number of child birth**				
1	104	37	1	1
2-4	26	85	0.13(0.01-1.60)	0.98(0.62-1.57)
≥5	65	23	1.08(0.29-0.74)	1.43(0.75-2.71)
Time of last Delivery*				
<2years	392	140	1	1
>2years	44	5	0.32(0.12-0.82)	0.0(0.0-1.08)
ANC use in last Pregnancy*				
Yes	266	125	1	1
No	126	16	0.27(0.15-0.47)	0.01(0.009-0.04)
PNC use after last delivery*				
Yes	50	9	1	1
No	386	39	0.26(0.17-0.47)	0.11(0.04-0.30)
Husband Attitude**				
Positive	282	132	1	1
Negative	85	7	2.55(1.19-5.49)	0.17(0.06-0.49)
Don't Know	69	6	1.78(0.85-3.73)	0.48(0.30-0.770)
Perceived problem during last Delivery**				
Yes	44	18	1	1
No	392	127	0.79(0.44-1.42)	0.002(0.00-1.30)

* Statistically associated at $p < 0.05$ **Adjusted for socio-demographic, obstetric, knowledge and attitude variables those showed no significant association during bivariate analyses

5.6 Record review findings

Records of ANC, delivery log books and labour referral registration books of one purposely selected HC and one hospital and town, woreda and zonal health departments report files were reviewed. The review of ANC delivery and PNC records covered a one year period registration (Jan 2008 to Dec 2008) whereas that of zonal reports covered a six years (June 2003 to Dec 2008). Records of ANC clients and mothers in labour were reviewed from both HCs. The above mentioned records at both HC and Hospital are complete. From the records it was observed that 303 mothers eligible in the town received ANC and 259 women gave birth by professionally assisted delivery (PAD). Great majority of labours were attended at the Ambo Hospital and in both of the HC and hospital there were no registration book for received referrals that might depict poor referral linkage or registration. The findings are summarized in table 5 and 6 below.

Table 10. Findings of record review of Ambo HC & Hospital in West Shewa Zone, Ethiopia, March 2009

Ambo town Governmental Health Institution Service coverage of 2007/8	Health center		Hospital	
	No	%	No	%
Expected pregnancy	2513	100	2513	100
ANC 1 st visit*	303	12	1991	79
Admitted labour at HC**	266	88	1542	77
Attended SVD alive	210	69	1531	99
Still birth	1	-	72	0.05
Episiotomies(C/S)	48	18	131	0.09
Delivery attendants				
HO/MD+	6	3	200	13
Midwife nurse	126	60	711	46
Other nurse	78	37	620	41
Referrals to the next HI made	5	1.9	37	2.4
Reasons for referral				
Prolonged labour	4	1.85	29	1.9
APH	1	0.05	5	0.03
Retained placenta	-	-	2	0.01
Other(Mal-presentation)	-	-	5	0.03
PNC*	267	10.6	232	9.2

*Percentages calculated from expected pregnancies in the town (POP. Of Town=50269)

** Percentages calculated from admitted labours. SVD =spontaneous vaginal delivery
C/S=caesarean section HO=health officer MD+= Medical Doctors and Specialist

The following graph shows utilization patterns of ANC, PAD (professionally assisted delivery) and PNC in the Zone. As shown in the graph huge gap is observed between the utilization of the services.

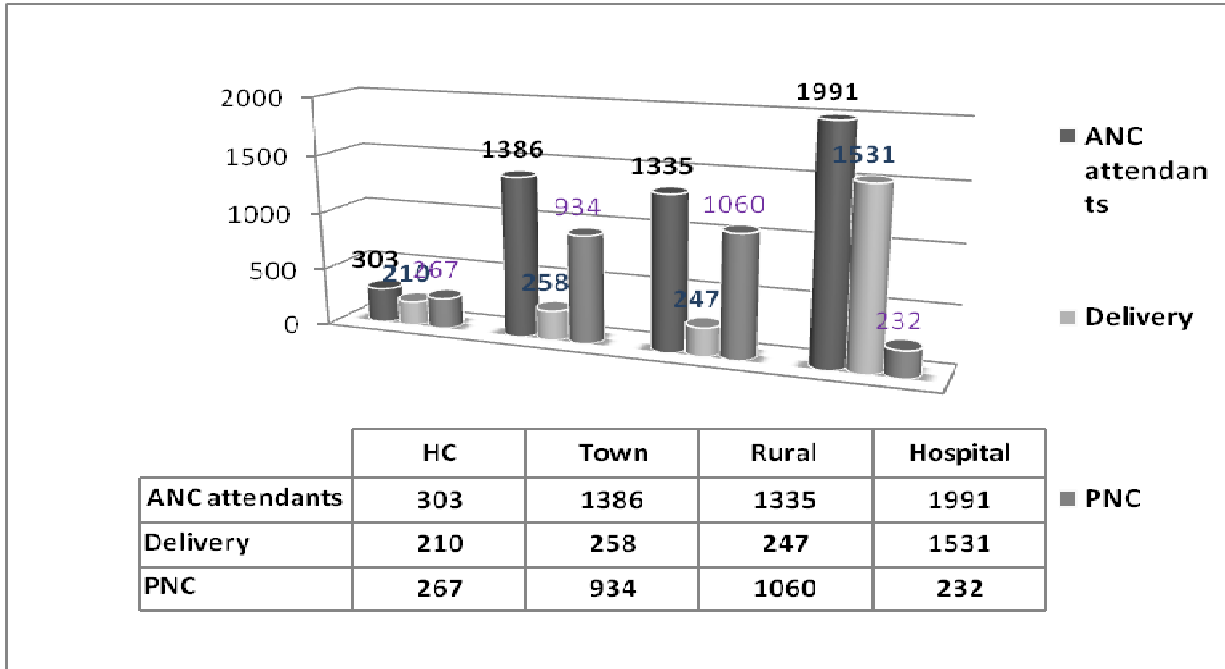
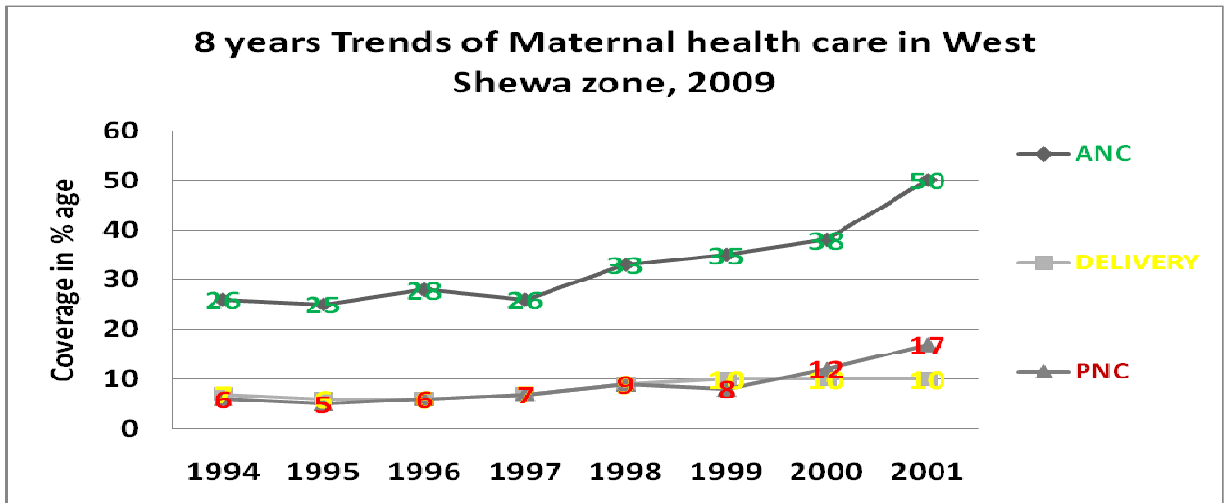


Fig 10 ANC, delivery and PNC service utilization coverage in West Shewa Zone, 2009



The following graphs show the big gap between maternal health services and its coverage.

Table13. West Shewa Zone Health Department, Family Health Unit Peri-, Intra- & Post Natal Seervice Eight Years Treand, 1994-2000EC

YEAR	TOTAL	ELIGIBLE		ANC		DELIVERY		PNC	
	POPN	NO	%	NO	%	NO	%	NO	%
1994	1949149	99707	5.0	25461	26	7408	7	5606	6
1995	1969660	98483	5.0	24314	25	5951	6	4870	5
1996	2026781	101339	5.0	28136	28	5989	6	6107	6
1997	2089451	104473	5.0	27674	26	6861	7	7237	7
1998	2141037	89924	4.2	29991	33	6048	9	7802	9
1999	2169014	91099	4.2	32327	35	9122	10	6935	8
2000	2234084	93832	4.2	35656	38	9383	10	11260	12
2001	2297903	75831	4.2	28236	50	28236	10	9738	17

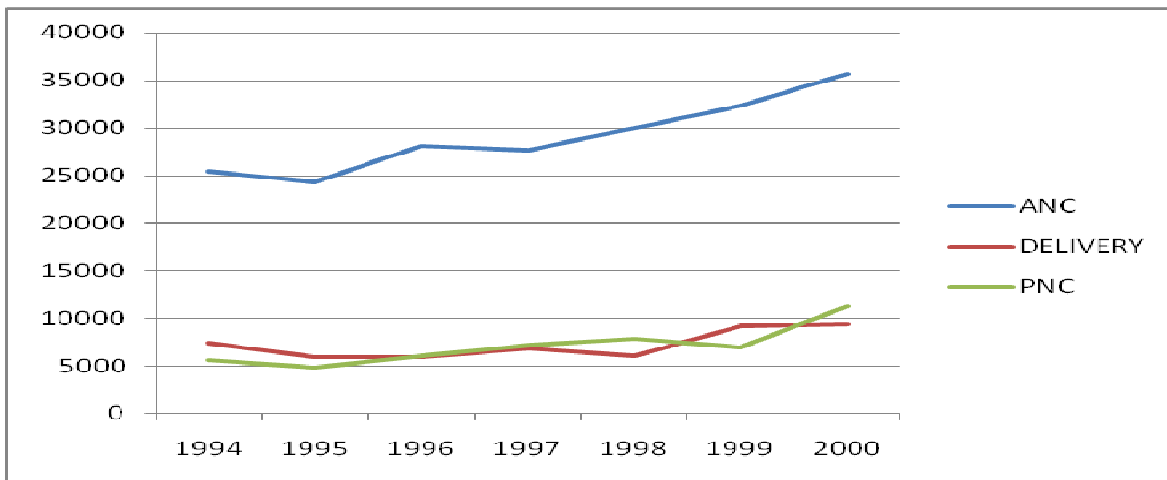


Fig11. Showing gap of maternal health services in west Shewa in percentage and number for the past 8yrs (1994-2001EC)

II. Qualitative Findings

A. Focus group discussion result

A total of 49 participants were involved in group of pregnant women, husband, religious leaders and clans representatives in seven group including health workers seven major question and other. Supplementary probe question utilized the questionnaires aimed to assess the discussants general knowledge, barriers on service utilization of delivery and post natal care

In general question all the group defined ANC, delivery and PNC that, *“As a service given before during and after delivery to prevent or reduce health problem from pregnancy and its out come from mother and the offspring. They can be given at health institution (hospital ,heath centre, health station) by appropriate trained health workers. Almost of the above mentioned maternal health care services offered free of charge except during shortage of equipment and supplies like for instance when there is no antibiotics, utrotonic drug (e.g. ,oxytocins), iv fluid and other. During this time the mother forced to buy from outside private pharmacies. Also there are for cards and some of governmental health institutions.”*

The informants from the community mentioned that, *“ANC services and PNC services utilization is easy to utilize because it can be given at any places and time. On the other hand delivery service utilisation is difficult for different reasons, like delivery took place unexpectedly when transportation and service fee & other factors that hinders to provide the services. After delivery going to health services is not considered as necessary without any health problem or child vaccination, rather it is wastage.”*

The informants from both urban and rural health workers said that, *“ANC coverage are highly increasing as it can given by any person to the lower level or communityfound at grass root level even by TBA/CRHA at any time and places. On the other hand delivery and post natal care are found tobe at lower level. This is because the mothers did not come to health institution if she is poor, illiterate, and if the labour starts at night form the rural surrounding due to transportation facilities. Low awareness concerning the*

PNC services and the government even the health workers our self due not give attention for PNC service are possible explanation for the low service utilization for PNC.

Majority of the group discussants able to name the danger signs of pregnancy related health problems such as hypertension, severe headache severe anaemia tension vaginal bleeding/ abortion, etc. They mentioned for the prevention of maternal health utilization are *work over load, long waiting time, lack of awareness about the service to the community especially on PNC, women empowering and decreasing work overload.*

One of the discussant from women's husband of the town's surrounding rural area (Awaro PA) said that, *"Health pregnant woman do not need to follow ANC, PNC at health facility and delivery at health institution regularly except when she faced any unusual or danger sign of health problems and he added home is also the best place for delivery beside her family and relatives. But this idea, by some of the other group member not accepted.*

Majority of the group discussant responded that, *"Younger male who does not keep privacy for women are not good to consider as birth attendant. And even the women do not come back to such health institution for the next ANC and PNC care."*

B. Key Informant In-depth interviews

A total of five from the Zone, Woreda and health institution family health experts gave response one by one to the questionnaire that includes maternal health service utilization problems, status and factors affecting safe delivery and postnatal care.

The respondents mentioned about maternal health care (ANC, Delivery, EPI, PMTCT, FP, PNC and other related services). One of the zonal respondent said,

"Almost all material health services are being given free of charge but during shortage of equipment and supplies and drugs (Set like delivery D & C/E, Oxytocics drugs, FP commodities ...) and mothers obliged to buy from outside the governmental health institution with high prices. All but delivery and PNC, other maternal health services were highly utilised."

One of the zonal informants responded that,

“The maternal health services FP and ANC coverage were high and increasing from time to time. This is may be due to expansion of the health services coverage by HEW in health posts constructed to each kebeles of farmers or peasant associations. Almost all health institution can render all the services except some of the newly constructed health posts with problem of counselling on user friendly service. There is adequate number of Staff in quantity but with poor training even HEWs can not handle normal delivery in some instances.

The respondent claims that

“There are still shortages of skilled birth attendants in of the health posts of the rural peasant association. On top of shortage of skilled attendants the design of the constructed health posts is not as such adequate to keep privacy and no light and water in it especially during delivery. There is no also IV fluids, utero tonic drugs were lacking in all health posts and health station. There is no regular and continuous training in the area concerning maternal health care for health extension worker to upgrade their knowledge and also no in service training for other health workers concerning basic and comprehensive EmONC (Emergency Obstetric and Neonatal care.”

Majority of the interviewee complain the quality of care determined by different factors like capacity building (appropriate resource allocation, training, etc) so that this is responsible for poor safe delivery service utilisation at community lever by appropriate equipment supply allocation is also responsible for poor quality of care and they lack adequate knowledge and skol for birth attendance.

Experts from Zone and woreda mentioned and differentiate emergency obstetrical and neonatal care components EMONC (basic and comprehensive) and skilled attendants and attendants at birth for safe delivery and PNC service utilization. On the other hand lower health post and health station faced difficulties to identity and differentiate the terms.

One of the Zonal family health experts said that,

“Within the past 12 months only a 10 days TOT on safe delivery and new born for 15 individuals given once for trainee who come from different districts which is not including Ambo town and its area which is not enough to cover the major topics of safe delivery. Mal assigning and distribution of health human power leads to misbehaving of the staff, lack of commitment which can intern can affect the utilization of all maternal health care. “

One of the woreda family health experts said that,

“I my self as MCH expert didn’t come across supervision, training, seminar concerning safe delivery and post natal care services within the past one year.”

C. Observation Findings

Four purposefully selected health institutions found in the town Viz., 1Hospital, 1 Health Centre, 1Health station and 1 Health Post observed using checklists prepared prior to the observation. The observation focused on infrastructure, basic facilities, equipments, supplies and some essential drugs. All observed facilities do not have adequate rooms for delivery care. i.e., one crowded room serving for delivery, post abortal care and other obstetric and gynecological examinations HC and the same is true in hospital. There is no separate maternal health service care in the health station and health post.

Consistent with the key informants’ interview finding, the rooms are cracked, dirty and with bad odor particularly in the Hospital. The rooms do not have water supply and all of them do have offensive smelling latrines serving for all clients visiting the health centers. There is telephone service placed at office of the head which is open only during regular working hours and days. Consequently, the telephone is not being used for emergency calls at any time.

All the experts responded Ambo Hospital and all facilities surroundings the town and inside were not adequately equipped with basic obstetrics equipments. Among basic equipments for delivery, suturing needles and materials, neonatal mucus extractor, neonatal resuscitation bag were absent in all of the lower health facilities. Vacuum

extractor and sterilizer were not found in two of the health HP. The existing equipments were inadequate and poorly stored.

Only some of the essential supplies and drugs were available in both HC. There were no drugs and basic supplies in the health station and health posts. There were few stocks of cotton, gauze bandage, gloves and disinfectants solutions in all facilities except the hospital. There was no partograph filled properly in all health facilities. There were no apron, rubber sheet and screen in the health station and health post. Concerning drugs oxytocin is found in the HC & hospital but there was no any uterotonics found in the other HF at the time of the observation. Intravenous fluids like normal saline and ringer lactate were also present at both HC & hospital but they were not adequate in the HC. Injectable antibiotics and anticonvulsants (Diazepam) were found in only hospital and HC. Injectable preparations of antihypertensive drugs like hydralazine were not found in all except hospital. The drugs and supplies in HC were stored unwisely and their stocks were not well monitored. No bin or stock card.

In general, it was found that all health institution except Ambo hospital were not equipped to the minimum standard required to provide basic emergency obstetric care. Besides, the two lower health station and health posts are rendering the service without any drugs and other supplies and equipments are scarce to give basic EmONC in that particular health institution.

VI. DISCUSSION

The factors influencing safe delivery and PNC services utilization of women of child bearing age residing in the study area of west Shewa zone were related to the mother (user) and health facility (provider) related.

Safe delivery service utilization in the study area has significantly associated to the following at $P < 0.05$. These factors are maternal education, house hold income, the ownership or tanner status of the house and its construction, access to radio and/or TV (having radio and /or TV in their house), previous use of PNC and its payment, positive attitude of husband, and distance of walking in between mothers home and service delivery area. Post natal care services usage in the area is also significantly dependent upon mother's residence, ethnicity, education, income, tanner status, family size, number of pregnancy, child birth or delivery and its time and place of delivery at $P < 0.05$. Most of these findings are consistent with most studies conducted in the past in the country (Ethiopia) or abroad in world. (8, 9, 10)

The result of the study showed that use of skilled birth attendants or Safe delivery and PNC service is significantly influenced by level of education .Women that were educated beyond secondary level or higher education are more likely to uses safe delivery and PNC services more than two to three times in the health institution. Most of similar studies conducted in the country or abroad strongly conside and agree with this report (8, 9, 10, 30, 39). This may be explained by the fact that education is likely to enhance women empowerment in accessing safe delivery & PNC services in making decision about their own health and knowing danger health sign resulted pregnancy and its outcome.

Income of house hold is the other socio-demographic variable that was found to determine the use of institutional delivery and post natal care. Well to do women or women from better monthly household income used safe delivery at health facility/institution and at the same time also utilized PNC services. This is also consistent with the study done in sub Saharan African including Ethiopia (26-29). The reason may be women having better monthly income can afford for all expenses like for

transportation, health service fee and for other. Also her husband and family took her to the health institution without any resistance.

Mothers who were in their own private well constructed houses (by corrugated iron roof cement floor) better utilized maternal health services that agree with better monthly income. Women who has radio and/or TV in their home were found to be significantly associated with health institutional delivery or better utilized maternal health services, may be this is also may be when they access to information by mass media usage of modern health service become increased.

In this study women who used ANC, PNC and didn't pay for the service better practiced safe delivery or health institution delivery. This report concedes with most maternal health service research report done in the world recently. (38) The explanation is may be having better information or knowledge through practicing helped the women in future service utilization. On the other hand number of pregnancy, delivery, and time of last birth and pregnancy significantly associated with post natal care service use. This is consistent with the study done in North Gondar. (39)

The health care services that the mother received during pregnancy to time of delivery and then after is important for survival and wellbeing of both the mother and their child (1, 2, 3, 5, 9) . About 391(63.3%), 145 (25%) and 98 (16.1%) of the women in this study received ANC, safe delivery and PNC respectively. There is a large gap/difference in the utilization of all the three maternal health services. Only 39 (9.7 %) of the mothers went first ANC visit before 4 monthes of past last pregnancy, which indicates women started at late stage of pregnancy. From those women who are currently pregnant about half of them become pregnant without their plan.

In this study the effect of maternal age and residence did not show safe delivery service utilization. Some study has contridict with this finding (8, 10, 35). The current study was conducted at the kebeles accessible to health facilities which are located at towns and in addition, the town is not as large and do not have significant difference in many aspects with that of the nearby rural surrounding kebeles. Access to mass media (radio) was also shown to an have an effect on the preference of institutional delivery (9).

Antenatal care visit positively predicts use of safe delivery services and it is more effective in preventing adverse pregnancy outcome if continued throughout pregnancy. Only 6.7% of the mother attended the first antenatal care visit within the first trimester 1-3 months. This indicates that women in the study area start ANC relatively late in their pregnancy. The current study has also revealed that women who have not had antenatal visit were less likely to seek PNC than women who had the visit.

Only 1.9 % of the deliveries were reported to be through caesarean section. This finding is consistent with the reports of the Demographic and Health Survey (DHS), Ethiopia 2000, 2005. This can be explained by inaccessible emergency obstetric services and inconvenient referral systems.

The present study showed poor utilization of maternity care (safe delivery and postnatal care services) in the study area. Socio-demographic, obstetric, and delivery characteristics were found to be determinants of safe delivery services utilization.

6.1 Strengths and Limitations of the study

6.1.2 Strengths

- Data collectors being health workers has advantageous on both selection and information biases since they know all the localities of their respective kebeles, well known, live with them, speaks local languages and of the same sex with study subjects.
- Assessed both user and provider perspectives of safe delivery.
- Absence of non responses
- Different tools and methods employed.

6.1.2 Limitations

- For time and logistic reasons the study was conducted on accessible kebeles so that it might not be generalizable to all women in the Zone
- Since the design is cross sectional temporal relations could not be assessed
- There could be recall bias since the women were asked for events within the last five years prior to the survey. However, the most recent births were considered and local events were utilized to remind them.
- Mothers whose age is less than 18 years not included in the study because of difficulties to get informed consent. Thus the study can not be generalized to those mothers below 18 years of age.

VII. CONCLUSION

The following conclusions were made from this study.

- Factors associated with safe delivery and PNC service and utilization are interrelated to each other and related to the mother and health system.
- Educational status and income of the women were independent predictors of safe delivery service utilization.
- Educational status, HID and income of the women were predictors of PNC utilization.
- Use of ANC, intrapartum birth complication and previous delivery at health institutions were obstetric determinants of safe delivery service utilization.
- The observed health facilities lack minimum basic EMOC equipments, supplies and facilities required to provide appropriate delivery care.
- Health posts are meant to give safe delivery services, but they don't started the services.
- There were poor health record keeping and inventory of materials at the facilities.
- There was also poor referral linkage between the community and health centers and health centers and hospitals.
- Even though majority of the mothers used ANC, only 25 percent of them delivered at health facilities and the rest majority delivered at home with help of relatives or TBAs depicting gap between ANC and delivery care.

VIII. RECOMMENDATIONS

Based on the findings of the study, the following areas were identified and specific recommendations were made.

General

- Enhancing the establishment of more emergency obstetric care centers within reasonable access, providing Information, Education and Communication (IEC) on maternity services utilization and improving the status of women in the community are recommended. At least secondary education should be promoted for girls/women. Women empowerment is the best of all.

To health care providers

- Be polite for patient and make the services user friendly as much as possible
- Record keeping and inventory of supplies at HFs should be improved.
- Postnatal care and ANC should be promoted and linked with delivery
- Provide information on risks of pregnancy, delivery and then after and on benefits of giving birth at health facilities to mothers, family members and the community

To local health sector officials

- Regular training and supervision for all hospitals, health centers and lower health institution. It should be sustainable but not interrupted.
- Health facilities need to be equipped with basic supplies and equipments
- Referral linkage between HPs and HCs and hospitals should be strengthened
- In service training on EMOC for health care providers to update their knowledge and upgrade their skills.

To community

- Community support groups should be formed to facilitate timely referral of labour mothers.
- Community members should discourage harmful traditional practices those hinder HF delivery care utilization.

Research

Further research should be conducted on:

- Quality of maternal health services, particularly delivery service
- Skill of different level health workers on delivery attendance
- Reasons for gaps between ANC and delivery care utilization
- Maternal perceptions and attitudes towards HF delivery care

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X. ANNEX

ANNEX 1. The following table shows the projected population and sample size of the study area.

AMBO TOWN AND ITS SURROUNDINGS AREA POPULATION

Kebeles	Tot. Pop	CBAW	HH	n	Delivery		HH
					HF	Home	Interval
Urban=							
Ambo 02	7573	1764	1993	146	37	110	
Ambo 04	7684	1790	2022	148	37	111	
Ambo 06	8482	1976	2232	164	41	123	
Subtotal	34425	8020	9059	465	116	349	14
Urban total	50269	11713		80%			
Rural							
Awaro	2656	619	553	116	29	87	
Subtotal	12567	2928		20%			5
Total	37081	8639	9613	581	145	436	

ANNEX 2 Questionnaire for community based survey on factors influencing utilization of safe Delivery and Post natal care services in Ambo town & its surrounding, Conducted by AAU SPH, 2009

☞ Read the Verbal consent as it is!

Verbal consent

Greetings Hello! My name is _____ I am from West Shewa Zone, Oromia Regional Health Bureau. I am working in research team of Addis Ababa University Medical Faculty, School of Public Health.

We are conducting a study of mothers care attendances during delivery and Post natal care, assistances during and after delivery and place of delivery.

You are kindly invited to be included in the study, which will have importance in improving maternal and child health services.

The interview will take about 30 minutes. No information concerning you, as individual will be passed to another individual or institution without your agreement.

Your participation is voluntary and you have the right to not participate fully or partially. If you agree to be included in the study I will start my questions by asking general identification points.

Only honest answers would contribute to the improvement of health planning. The study has approval from Addis Ababa University.

“May I continue?” 1. Yes 2. No If yes, continue interviewing and If No, thank and stop interviewing and skip to the next house.

Name of the interviewer _____ Signature_____ Date of interview_____

Name of the supervisor _____ Sign._____ Date_____

Questionnaire for factors influencing utilization of safe Delivery and Post natal care services in Ambo

Households Identification

001. Questionnaire Code _____
 002. Residence / ___/ 1.Ambo town 2. Ambo surrounding area.
 003. Kebele _____ 004. House number _____
 005. How long have been living in this town/Area _____ (If less than one year thank and stop interviewing and skip to the next house but if not preceding the study next question).
 006. Time table for visiting/revising a household

	First visit	Second visit	Third visit
Date			
Interviewer			
Result			

- Results of visiting:** 1. Completed, 2.Rejected, 3.No response, 4.partially response 5.other
 ☞ Show the answer of the respondent by circling the number and / or writing or marking “√” on the space provided.
 ☞ Time of interview start _____ ended _____

Part I -Questionnaire on socio-demographic characteristics.

No	Questionnaire	Alternative choice for responses	Skip to code
101	Present maternal age	_____ Years	
102	What is the highest level of schooling you have	1. Never attended 2. Only read & write 3. Elementary school 4. Secondary high school 5. 12+ 9. Other Specify	
103	What ethnic group do you belong?	1. Oromo 2. Amhara 3. Guraghe 4. Tigrie 9. Other specify _____	
104	What is your occupation?	1. Housewife 2. Maid servant 3. Civil servant 4. Merchant 5. Student 9. Other specify	
105	What is your religion?	1. Orthodox 2. Catholic 3. Protestant 4. Muslim 9. Other specify	
106	What is your marital status?	1. Married 2. Divorced 3. Widowed 4. Never married 5. Separated	
107	What is your Monthly income?	_____ birr	
108	What is the number of people Who live usually in this household?	Total _____	
109	Tenure status of the house	1 Private 2 Rental 88. other , specify _____	
110	Material used to construct the roof and floor	1. Corrugated Iron and Cement/wood 2 Corrugated Iron and mud 3 Thatch 3 Cement 88.other, Specify _____	
111	Do you have radio/TV	1 yes 2 No	

Part II: Questionnaire on Obstetrics and Gynecology

No.	Questionnaire	Alternative choice for responses	Skip
201	Age of mother at first marriage	_____	
202	Age of mother at first pregnancy	_____	
203	Number of pregnancy	_____	
204	Number of delivery	_____	
205	Number of live births	_____	
206	Number of still birth	_____	
207	Number of abortions		
208	Are you pregnant now?	1. Yes 2. No	
209	Is the pregnancy wanted?	1. Yes 2. No	
210	When was Your last pregnancy ?	Before _____ years	
211	Do you think a pregnant woman could get ANC?	1. Yes 2.No →	
212	From where the women could get the services?	1.health institution 2.TBA 3.Relatives/friends 4.CHA 99.Others specify_____	
213	From Where do you here /about the sources?	1.Heath institution 2.Radio/TV 3.TBA 4.CHA 5.Relatives 6.Women’s group 99.othres specify_____	
214	What do you think would it be the benefits of ANC for the mothers and their newborn?	1. Maternal health 2.Child health 3. Both 88. Don’t know 99. Others specify _____	
215	Did you go to health institution for ANC check up while you were pregnant?	1. Yes 2.No →	Q217
216	If yes at what gestational age did you went HI?	1. 1-3 months 2. 4-6 months 3. 7-9 months 88. Don’t know	
217	What was the total number of ANC visits	1. Once 2. Two 3. Three 4. Four and more	
218	If you went for ANC check-ups to which health institution did you go?	1. Hospital 2. Health center 3. Clinics 9. Others specify _____	
219	Do you know dangerous health problems related to pregnancy?	1. Yes 2. No →	Q.221
220	If yes, can you mention some of them? (More than one answer is possible)	<p align="center">1. Yes 2. No</p> 1.persistant vomiting-----1 2 2.Anemia-----1 2 3.Leg swelling-----1 2 4.Headache-----1 2 5.Vaginal bleeding-----1 2 6.Hypertension-----1 2 7.Seizurer-----1 2 8.Abnormal fetal position- 1 2 9.Obstraced /pronged Labour-1 2 10.Retained placenta-----1 2 99.Others specify-----1 2	
221	Did you experience a health problem during your last pregnancy?	1. Yes 2. No 88. Don’t remember	

Part III: Questions on the choices of delivery and assistances during delivery

No	Questions	Alternative choices for responses	Skip Code
301	Where did you deliver your last baby?	1. Hospital 2. Health center 3. Health station/clinic 4. Home, → 99. Others specify_____	303
302	Why did you want to deliver your baby in that particular place? (If in a health institution)	1. Close to where I live 2. High quality services 3. Good approach of health workers 4. Little expenses to deliver in this particular institution 9. Other Specify_____	
303	What was the mode of your last delivery?	1. Spontaneous vaginal delivery 2. Instrumental delivery 3. Cesarean section 8. I did not remember 9. Other specify_____	
304	If you delivered at home who assisted you during delivery?	1. Health workers 2. TBA 3. Close relatives/friends 4. Neighbors 5. No one 9. Others specify_____	
305	What was the condition of your last baby?	1. Live birth 2. Live birth but died soon after 3. Died before birth day 4. Still birth 9. Other specify_____	
306	Did you encounter any health problems during delivery your last delivery?	1. Yes 2. No→ 3. I don't remember	309
307	If yes, what were the problems?	1. Excessive Vaginal bleeding 2. Prolonged labor(>12 hrs) 3. Retained placenta (>1hr) 4. Inability to control urine/faces/both 5. Mal-presentation 6. Fetal death 7. Early rupture of membrane 8. Loss of consciousness 9. Other, specify.....	
308	What measures were taken to alleviate the problem?	1. Taken to health facility 2. Took traditional medicine 3. Consulted TBA 4. No action taken 9. Other, specify_____	
309	According to birth order, where does your last child belong?	1. First 2. Second 3. Fourth 4. Fifth and above	
310	If you delivered at home. Why? (More than one answer is possible)	1. Yes 2. No 1. Expences for delivery at health institution is unaffordable--- 1 2 2. Do you like behaviors of health workers at health institution-1 2 3. Wishes to deliver at home where relatives are nearby 4. More trust on TBAs/relatives than health workers a t health institution----- 1 2 9. Others specify_____ 1---2-	
311	What were your husbands or partner's attitude towards HI delivery attendance?	1. Positive 2. Negative 8. Don't know	

Part IV: Question on respondents view on quality of Delivery & Post natal care

No	Questions	Alternative choices for responses	Skip Code
401	Did you ever pay for Delivery for Health Institution?	1.Yes 2. No →	404
402	If yes, how do you feel about the payment for Delivery?	1. Unaffordable 2. Fair 3. Very small	
403	How much on average did you pay for Delivery service per visit?	_____Birr	
404	Did you go to health institution for PNC check after your last child birth?	1. Yes 2.No →	412
405	Did you ever pay for PNC?	1.Yes 2. No →	408
406	If yes, how do you feel about the payment for Delivery and PNC ?	1. Unaffordable 2. Fair 3. Very small	
407	How much on average did you pay for Delivery and PNC service per visit?	_____Birr	
408	Do you think that waiting time was a problem while always you were attending PNC?	1. Yes 2. No 8.Don't know	
409	On average how long did you wait for PNC clinic?	_____ Hrs	
410	If yes when did you go ?	1. before 6 hours after birth 2. 6 hours to 6 days after birth 3. 6 days-6weeks after birth 4. 6week- 6months after birth 8. I don't know	
411	What was the total number of visits for PNC?	1. Once 2. Two 3. Three 4. Four and more	
412	If you did not attend PNC? Why not? (Multiple response) (Don't read the choices/circle the responses)	1 =yes, 2= No 1. No/little knowledge about PNC clinics 1 2 2. Being in a state of good health-1 -- 2 3. Too busy to attend PNC clinics-1 -- 2 4. Expenses for clinics are Unaffordable-1 2 5. PNC clinic too far from my home--1 --2 6. Waiting time is too long at PNC --1 2 7. Husband disapproval -----1 2 8. Poor quality of the services----1 2 9. Because of religion-----1 2 10 .PNC attendance is useless --1 2 99.Others specify_____	
413	Have you developed health problem after one hour delivery to six weeks during your last child birth?	1. Yes 2.No →	411
414	Did you go to traditional healer for your and your baby's health?	1.Yes 2.no	
415	Most complications of labor are preventable& treatable	1. Agree 2. Disagree 3. In different	
416	Any pregnant women are susceptible to face delivery complications.	1. Agree 2. Disagree 3. In different	

417	Like any pregnant women, I am susceptible to face delivery complications.	1. Agree 2. Disagree 3. In different	
418	Delivery complications can be severe and may be hazardous to my well being.	1. Agree 2. Disagree 3. In different	
419	Delivery complications can be severe and may be hazardous to the newborn.	1. Agree 2. Disagree 3. In different	
420	Being attended by a skilled delivery attendant may be beneficial to my well being.	1. Agree 2. Disagree 3. In different	
421	Being attended by a skilled delivery attendant may be beneficial to my newborn's well being.	1. Agree 2. Disagree 3. In different	
422	Do you believe that in the nearest Health Institution all skilled delivery attendants are skillful to diagnose and treat delivery complications can also refer early ?	1. Agree 2. Disagree 3. In different	
423	Do you believe that the nearest Health Institution fully equipped with basic Delivery Equipments & supplies?	1. Agree 2. Disagree 3. In different	

Part V: Question on respondents view on quality of PNC & Safe Delivery services

No	Questionnaire on identification of the respondents (Qs 501-507 for PNC attendants Only)	Alternative choices for responses	Skip to Code
501	Were the health workers respectful?	1. Yes 2. No,	
502	Did you think that lack of privacy was a problem at PNC?	1. Yes 2. No 88. Don't know	
503	What is your feeling about the quality of PNC given?	1. Good 2. Satisfactory 3. Poor	
504	Do you have confidence in the service provided at that health institution?	1. Yes 2. No 88. Don't know	
505	How do you rank the behavior of health workers providing PNC services?	1. V. Good 2. Good 3. Fair 4. Bad	
506	How do you feel about the distance from your home to the nearest health institution? (Health center, Clinic)	1. Very close 2. Average 3. Too far	
507	How long does it take to travel from your home to the nearest health institution?	_____ Hours	

“Thanks for your cooperation!”

ANNEX3 Questionnaire of Amhric Version

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212	¾¼õc Ö<`□□" „, ¾¼Ö? U□S^ ¡ffM }ÑMÓKaf ¾¼T>ÁÑ<-<f □□f '¬ wK¬ □□□□□□□;	1. ÿÖ? " É`¡f 2. ÿM□É }ªLİ 3. ÿ}²SÉ/□Á— 4. ÿÖ? " }Ö] 99. ÿK?L ÃÑKİ _____	
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214	¾¼õcÖ<`□ U`S^ ¡ffM TÉ[Ó ØpS< U"É" " " < wK"< ÁevK<; /-----/	1. K□ " „, Ö? " " f 2. Kİ"e/KM□ Ö? " " f 3. KG<K~U 8. lL"<pU 9. K?L ÃÑKê _____	
215	K'õcÖ□ U`S^ ¡ffM "Á Ö? " É`¡f □□□ Äÿ}□K< 'u` ;-----/	1. }□□ 2. ¾¼KU →	217
216	SM□ }□□ ÿJ' uSË]Á "Á Ö? " É`¡f ¾¼H@Æf ue"}— " < " " 'u` ; /-----/	1. ÿ1--3 " " c=J'~ 2. ÿ4--6 " " c=J'~ 3. ÿ7--9 " " c=J'~ 8. lL"<pU	
217	K'õcÖ<` Ö? " ¡ffM ¾¼T>ÁÁ`Ñ< ÿJ' u}ÖnLÃ e" f Ñ>²? H@Á< 'u` ; /-----/	1. }É`Ñ>²? 2. G<Kf Ñ>²? 3. Zef Ñ>²? 4. ÿ}^f Ñ>²? uLÃ	
218	K'õcÖ<` □□Ö? " ¡ffM ¾¼T>H@Æ ÿJ' ÿ¾¼f— " < ¾¼Ö? " É`¡f 'u];	1. JeúM 2. Ö? " x u=Á 3. jK='>j 9. K?L ÃÑKê _____	
219	ÿ`Ó " " Ö` u}ÁÁ² K=Sx ¾¼T>¡M }ÁÑ— ¾¼Ö? " 'Óα" Á"<nK<; /---/	1. }□□ 2. ¾¼KU→	221
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405	□□□ YðK"< Á"<nK<;	1.)□□ 2. ¼KU→	408
406)□□ YJ' eK jðÁ"< G<'@□ U" ÑcT□□M;	1. Y)pu uLÑ 2. S"YK— "'< 3. u×U f"i "'<	
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412	"Á Ö?" É"İf □□□□ □□□ U`S^ "MH@Æ U;)"Áf□" ÑÓKİ<; (U`Y□()Ñ"uu<U) (Y)"É uLÑ SMe)	1.)□□ 2. ¼KU 1. eK 'öcÖ<` □□□□□□ □□□□ □□□ U`S^ YKTL"<p--1--2/- 2. Ö?"— eKJ"Y<-----1 2 /- 3. u×U e^ eKT>u³w~---1 2/--/ 4. u'öcÖ<` □pf)ÑMÓKAf ¼T>YðK"< jðÁ Yð}— YKJ□1 2--/ 5. u×U \p YKJ'----1----2 6. w²< Ñ>²? eKT>ÁqÑ----1 2 7. vKu?, eKTÑðpÉ-----1 2 8. ¼ÑMÓKAf Á[Í"< 'p}— eKJ' 9. GÁT•f eKTÑðpÉ---1--2 10. ¼'öcÖ<` U`S^ ØpU eKK?K"< 99. K?L ÑÑKİ;MM -----	
413	□□□□□ □□□ □□□ □□□□□ □□□□ □□□ □1□□□ □□□ 6 □□□□ □□□ □□□ □□□□□ □□□?	1. □□. 2. □□□ 8. □□□□□□□	

414	□□□□ □□□ □□□□ □□□□ □□□ □□□ □□□?	1. □□. 2. □□□	
415	□□□□ □□□□ □□ □□□□□□ □□□ □□□ □□□□□□□□ □□□ □□□□□□□ □□□?	1. □□□ 2. □□□ 3. □□¼K~U	
416	T"— ^o U □"Ñ<' c?f u"K=É U;"Áf KT>SÖ< ¼Ö?" (Óα< ¼□□□□□ □□?	1. □□□ 2. □□□ 3. □□¼K~U	
417	□'@ □"ÁT"— ^o U □"Ñ<' c?f u"K=É U;"Áf KT>SÖ< ¼Ö?" (Óα< ¼}ÖKØÿ< '˜ □□□?	1. □□□ 2. □□□ 3. □□¼K~U	
418	u"K=É U;"Áf ¼T>SÖ< ¼Ö?" (Óα< uÖ?"Â LÃ }eÿð "Ö?f" K=ÁeÿfK< ÑLK< □□□?	1. □□□ 2. □□□ 3. □□¼K~U	
419	u"K=É U;"Áf ¼T>SÖ< ¼Ö?" (Óα< u□"MÁ¬ Mĩ Ö?" LÃ }eÿð "Ö?f" K=ÁeÿfK< ÑLK< □□□?	1. □□□ 2. □□□ 3. □□¼K~U	
420	u"K=É "pf □cKÖ' ¼Ö?" vKS<Á" □□□ □"=É ¼}hK Ö?" □□□□□□ □□□□□ □□□?	1. □□□ 2. □□□ 3. □□¼K~U	
421	u"K=É "pf □cKÖ' ¼Ö?" vKS<Á □□□ □□□□ □□□□□ □□□ ¼}hK □□ □□□□□□ □□□□□ □□□?	1. □□□ 2. □□□ 3. □□¼K~U	
422	□□□ □□□ □□ □□□□□□ □□□□ □□□□ □□□□ □□□□ □□□□□□ □□□ □□□ □□□□ □□ □□□ □□□?	1. □□□ 2. □□□ 3. □□¼K~U	
423	□□□□□□ □□□ □□ □□□□ □□□ □□□□□□ □□□□□ □□□□ □□□ □□□?	1. □□□ 2. □□□ 3. □□¼K~U	

jōM }Uef }ÖÁm □□□□ □□□□ "K=É U`S^ ¼Ö?" }ÑMÓKaf Ø^f LÃ ÁL†"< }SK"ÿf
KSÑUÑU ¼}²ÖË

IØ`	ØÁo	}T^B SMe	□□□□ □□
501	¼Ö?" vKS<Á< ¼'öcÖ<` □"„,“" Áÿw^K;	1. }□□ 2. ¼KU 8. }L¬pU	
502	u□□□ "K=É ¼U`S^ jōM ¼}TEL" um ¼U`S^ jōM }K wK¬ ÑÑU□K<;	1. }□□ 2. ¼KU 8. }L¬pU	
503	eK 'öcÖ<` U`S^ }ÑMÓKaf Ø^f U" ÄcT□□M;	1 Ø\ 2. um "'< 3. Á"†	
504	Ö?" É'ĩ~ uT>cÖ"< ¼□□□ "K=É U`S^ }ÑMÓKaf ÁU'<uM;	1. }□□ 2. ¼KU	
505	u□□□ "K=É U`S^¼T>ÁÑKÓK<f" ¼Ö?" vKS<Á< □"Éf ÁÍ Á"Ö<L† ^o M;	1. u×U Ø\ 2. Ø\ 3. U"U}ÄÄK<U 4. SÖö	
506	u}p^u=Á vK"< ¼Ö?" É'ÿf" uu?,, S"ÿM YLK"< `kf U" ÄcT□□M;	1. u×U p`w 2. }T"~ 3. u×U \p	
507	ÿu?,, }"e,, □eÿ }p^u=Á "K"< □Ö?" }sU U" ÁIM c¯f □"eÇM;	----- c¯f	

Kfww`□ u×U □"ScÓ"K"!

Annex 4: Questionnaire of Afaan Oromo version

Gafillee ummata jidu galeesa godhatee waaee itti fayyadama tajaajila da'umisa fi issa bodaa kan murteesu hadhollii, 2009

☞ Kan itti aanee jiru kana akkuma jiruutti dubisii

Waligalte jeecha Iciiti Eeguu

Heelloo, Nagaan Waqqaayoo issinif haata'u! Akkam jirtu, Anni Maqaan koo _____jeedhamaa, kanaan dhufe Univarsiitii Finfinnee B/E/F/Oromiyaanfi W/E/F/ Godina shawaa Lixaa, waliin ta'uun qorannoo waa'ee tajaajila eegumisa fayyaa haadholiif daa'immaani irraattin hojjechaa jirra.

Kunis haadholeen tajaajila da'umisa fi issa-booda akka itti hin fayyadamine kan murteesu fi dangeessu fuula duraatti Karoora fayyaan haadholii akka foyyaa'u ni-gargaara jedhameetu eegama.

Qoraanoo kana irraattii yaada keessaan akka nuuf keennitan kabajaan issin affeerrera. Ragaan kamiiyyu Iciittin issa kaneegammedha. Jeecuunis eeyyama keessan malee qaama biraatiif hin keenamu. Qorannoon Kuun Univarsiitii Finfinnee tiin fudhatama argatera.

Ragaa nuuf kenuu, dhoowwachuu ykn jidduutti addaan kutuun mirgaa keessan.

Ragaa dhugaaf qulqulluutu Karrassaa fayyaa foyyeesuuf barbadama.

Yoon gaaffii koo ittifufee feedhii qabdu 1. Eeyee 2. Lakkii (Deebiin issan Eyyee yoo ta'e gaaffii armaan gadii itti fufii, Lakkii yoo ta'ee galatefadhuutii mana kan itti aannuutti darbi)

Maqaa Gaafataa _____ Mallattoo _____ Guyyaa _____

Maqaa To'aataa _____ Mallattoo _____ Guyyaa _____

Annex 4: Questionnaire of Afaan Oromo version

Qoraannoo Universitii Finfinee waaee itti fayyadama tajaajila hadhollii da'umisa fi issa bodaa kan murteesu

Addan Baafannoo Manaa

001. Kodii Gaffillee _____ 002. Teessoo/___/1. Magaala Amboo 2. Naannoo Magaalaa Amboo 003. Gandaa _____ 004. Lakkofsaa Mana _____
 005. Yeroo ammamiif bakka kana /jiraattanittu? ____ (Waggaa tokkoo-ol yoo ta'ee gaffii armaan gadii itti fufii lakki yoota'e galaatefadhuuttii mana itti aannuutti darbi)
 006. Gabatee yeeroo mana irra deebiaan toataan

	Yeroo duraa	Yeroo lammaafa	Yeroo sadaffaa
Guyyaa			
Kan gaffii Diyyesee			
Firri argamee			

Firii argamee: 1. qulqula'era, 2. Hindidaan, 3. debii dhowwatan, 4. gariisa debisaaniru, 5. kan bira ibsii _____

☞ yerroon gaffii itti eegalee _____ Yeroo itti Xumuramee _____

☞ *Deebii debii keenitoota lakkofisa filannoo jiraani irra gingoo maruunif/ykn bareesuun ykn malaaatoo "√" kanaatin bakka duwwa keenamee irratti argisiisi*

Kutaa 1 –Gaaffii waa'ee jireenya hawwassuma isaan

T.L	Gaaffilee deebistootaaf dhiyaate	Deebii deebi'e	koodiitti darbi
101	Umuriin Dhaloota Keessani ammam ta'a ?	_____ (Waggaa guutuun)	

102	Sadaarkaan Barumisaa keessan ini gudda ammam?	1. Homa hin barane 2. Barreessuuf Dubbisuu nan danda'a 3. Barnoota sadarkaa duraa(1-8) 4. Barnoota Sad. Lammaaffa(9-12) 5. 12+ 9. Ykn kan bira yoo jiraate ibsaa _____	
103	Sabni keessan maalii?	1. Oromoo 2. Amarraa 3. Guraghee 4. Tigree 9. kan birra, ibsaa _____	
104	Hojiin keessan maali?	1. Hadha warraa 2. Hojjeettuu manaa 3. Hojjeettuu mootumma 4. Daldaltuu 5. Barattuu 9. kan bira, ibsaa _____	
105	Amanitiin Keessan kami?	1. Orthodoxii 2. Katolikii 3. Protestanti 4. Muslimaa 9. kan birra, ibsaa _____	
106	Bultiin keessan maal fakkata?	1. Heerumeen dhirsa qaba 2. Abbaa warraa koo waliin wal hikineera 3. dhirsii koo na jala du'ee 4. takkaayu hin heerumine 5. dhirsii koo nabirra hin jiru	
107	Gallin issin ji'aatti argaattan meeqaa?	_____	
108	Nama meeqatu mana kana keessa jirataa	_____	
109	Qabiyyeen Mana kan eeynuutti?	1 Kan dhunfaa koo 2 Kiraan kanfala jira 9. kan bira, ibsaa _____	
110	Manni kun maaliin ijaaramee?	1. Qorqorroo simintoon 2 Qorqorroo, mukaa fi Dhoqqee 3 Citaa fi mukaa 9. . kan bira, ibsaa _____	
111	Radiooni Qabiduu	1 Eeyee 2. Lakkii	

Kutaa 2: Gaaffiilee Dhimma Dahumissaa fi Qamaa HormaataA

T.L	Gaffilee deebistootaaf dhiyaate	Deebi deebi'e	irradarbi
201	Ummirin yeeroo duraaf itti heerumitaan	_____ (waggaa Guutuun)	
202	Ummirin ulfaa inni durawoo	_____	
203	Yeeroo meeqaaf ulfooftaani	_____	
204	Yeeroo meeqaaf deessanittu	_____	
205	Mucaa lubuu guutuun dhalootee meeqa	_____	
206	Mucaa dhalootee kan issiin harka bahee jira	_____	
207	Ulfii isin irraa bahee yoo jiraatee meeqaa?	_____	
208	Yeeroo amma kana garaatt wayii batu (ulfooftaani)?	1. Eeyee 2. Lakkii→	G 210
209	Uulfa ta'u dahu barbadaanitu?	1. Eeyee 2. Lakkii	
210	Yeroon uulfaa kanaan dura hangam tureera?	waggaa _____ dura	
211	Dubartii ulfaa hundaa hordofii fayyaa argaachu qabu jeetan yaadu?	1. Eeyee 2. Lakkii	
212	Dubartii gargarsa fayyaa yeeroo uulfaafi eessaa akka argaachuu danda'an beekitu?	1.Dhaabatta Fayyaa irra 2.TBA 3.Firra koo/Hirriyyaa 4.CHA 9.Kan birra yoojiraatee ibsa _____	
213	Yaada kana eesaa dhageessani?	1.Dhabatta Fayyaa 2.Radio/TV 3.TBA 4.CHA 5.Firraa koo 6.Walda dubartoota 9. Kan birra yoojiraatee ibsa _____	
214	Fayidaan waldhaansa haadhoolii ulfaa, maaliif gargaara jeetan yaadduu?	1. Fayyaa haadhooliif 2.Fayyaa daa'immaanif 3. Lachanuuf 8. ani hin beeku 9. Kan bira yoojiraate ibsa _____	

215	Yeroo ulfaa mana yaalaa dhaqxaanii beekituu?	1. Eeyyee 2.Lakkii	221
216	Eeyyee yoo ta'e, yeroo ji'a meeqa?	1. Ji'a 1-3 2. Ji'a 4-6 3. Ji'a 7-9 months 8. Anni Hibeeku	
217	Yeroo meeqaaf demitanii turtani	1. Al-tokkoo 2. Al-lammaa 3. Al-saddii 4. Al-afuurii fi issa ol	
218	Dhaabata Fayyaa issa kami?	1. Hospitala 2. B/ Eegumisa fayyaa 3. Kilinikaa 9. Kan biraa ibsa_____	
219	Rakkoo yeroo uulfaa dhalatu beektuu?	1. Eeyyee 2. Lakkii	
220	Eeyyee yeroo ta'ee maal maal fa'aa beektu? (Deebbi tokkoo oli qaba)	1.Hoqee yeroo dheera 2.HirinaDigga 3.Dhitto miilaa 4.Bowwoo mataa 5.Dhigin ganamu'u 6.daabalaa hiigaa 7.Maraanmartoo 8.Teesoon mucaa siri ta'u yoo bate 9.Cininsuun yoodheeratee 10.Hobbaatin yoobahuu dide 99. Kan biraa, ibsaa-----	
221	Rakkoon yeroo uulfaa keesaan issa dhumma dahumisa ykn issa booda issin qunameetu tureera?	1. Eeyyee 2. Lakki 8. Hin yadaadhu	

Kutaa 3: Questions on the choices of delivery and assistances during delivery

T.L	Gaaffilee deebistootaaf dhiyaate	Deebii deebi'e	kooditti darbi
301	Dhaabbata Fayyaa kamitti deessanii?	1. Hospitalaa 2. Buufata Eegumisa Fayyaa 3. Kilinika 4. Manaa, 99. Kan biraa, ibsaa	303
302	Malliif Dhaabbata kana filatan? (Deebii adda-adda qaba)	1=Eeyyee 2= Lakkii 1. Mana kooti Dhiyoodha-----1 2 2.Kafaalitiin isaa xiqaadhaa-----1 2 3. amalli ogeessa gaariidhaa-----1 2 4. Yeroon annaafi mijaahati hojeetu-1 2 5. Tajaajila garii Keennu-----1 2 99. Kan bira , ibsaa-----1 2	
303	Haala kamaan deesaan tutaan?	1.Rakoo tokoo malee 2.Meeshaan gargamee 3. Oprehiin(C/S) 9. Kan biraa ibsii_____	
304	Yeroosana eenyuuti isin gargaree?	1. Oogeessa Fayyaa 2. TBA 3. Firaafi hiriyyaa 4. Ollaakoo 5. homituu nahingargarree 9. Kan biraa, ibsaa-----	
305	Haalii mucaa akkami turee	1. Luubu Qabeesa 2. Dadhabaf yeroo sanaatti du'e 3. Du'atu garatti naabahee 4. Kan biraa ibsii	
306	Wayyi dahumisaa keessaan issa darbee booda rakkinni fayyaa issin qunaamee turee?	1. Eyyee 3. Hinyadaadhu 2.Lakkii →	309
307	Yoo ta'e Yerroo dahumisaa keessaan issa darbeen booda rakkinni fayyaa issin qunaamee maal turee?	1. Dhiigaatu dhaabachu didee1..2./.../ 2. Cininsuutu natty dheeratee(Saaa12ol) ..1..2 3. Huubaatu (dil'utu Naahaafee).....1...2	

	(Deebbi tokkoo oli qaba)	4. Fincaan/bobaa Qabaaacuun Dadhaabee,1...2 5. Teesoon muucaan sirrii hinturee.....1...2 6. Dadaabii mucaa gar keessati.....1...2 7. Bishaan bubeetu dursee Dangala'e.....1...2 8. Ofiwalaalu.....1...2 9. Kan biraa , ibsii_____	
308	Tarkanfii maalii tu fudhaatamee turee? (Deebbi tokkoo oli qaba)	1. Gara Dhaabata Fayyaan deemee...1...2 2. Qorichaa addaan fudhadhee.....1...2 3. Muxaanoon kan deessisanin wamaadhee...1...2 8 . hoomayuu hingoonee...1...2 9. kan birra yoojiraatee ibsii_____1...2	
309	Haalaa wal duura booddatiin dahumisaa inni meeqaafa ta'u issatti?	1. Kan Dura 2. Lamaaaffaa 3. Sadaaffaa 4. Arfaaffaa 5. Shanaaffaa fi issa ol	
310	Manaatti yoo deessan yoo ta'e sababiin keessan maaliif turee? (deebii tokkoo ol qaba)	1.Kafaltiisaa waanan hinqabineef --1--2 2.Amaala hojjeetoota garii mitti--1---2 3.Manatti dahuu fedheen---1 2 4.Caalaatti firaa fi TBAswayya -1--2 9 Kan biraa, ibsaa-----1---- 2	
311	Abbaa warran kee yookan hiriyyan kee tajaajila fayyaa haadhooliif keenamuirraatt yaada maal qaba?	1. jajjabeessa 2. jibississa 88.anni hinbeeku	

Kutaa 4: Gaffilee wae'ee dahumisaa fi dahumisaa boodaamuxaannoo fi hubaanoo ibsuu

T.L	Gaffilee deebistootaaf dhiyaate	Deebi deebi'e	Koditti darbi
401	Tajaajila Fayyaa yeroo dahumisaatiif kanfaltaan beekitu?	1. Eeyyee 2. Lakki → .	404
402	Kafalttichi akkam turee ?	1. Uulfaataadhaa 2. Jidu galeesaa 3. xiqqaadha	
403	Qarshii meeqa jiddu galeessan kafaltaan?	Qarshii _____	
404	Yeerroo dahumisaa keessan issa darbeen booda waldhansaa fayyaa dahumisaa boodaatiif dhaabata fayyaa deemitaanitu?	1. Eyyee 2.Lakkii →	412
405	Tajaajila Fayyaa yeroo Qoraanoo dahumisaa boodaatiif kanfaltaan beekitu?	1. Eeyyee 2. Lakki → .	408
406	Kafalttichi akkam turee ?	1. Uulfaataadhaa 2. Jidu galeesaa 3. xiqqaadha	
407	Qarshii meeqa jiddu galeessan kafaltaan?	Qarshii _____	
408	Tajaajila argaachuuf yeroo Dheera namaa tursisuu?	1. Eyyee 2.Lakkii	
409	Tajaajila argaachuuf yeroo hangamii nama tursisuu?	Sa'aa _____	
410	Yoo ta'e yeeroo kami deemitani turee ?	1. Mucaa dhalatee sa'atti 6 dura 2. Mucaa dhalatee sa'atti 6 haggaa gu.6tti 3. dhalatee gyy yaa6 -torbaan jahaatti 4. dhalatee torbaan6 hanga jia jahaatti 8. anni hinbeeku	

411	Yeero meeqaa deemitanitu?	1. Al tokko 3. Saddii	2. Lammaa 4. Afuurii fi issa ol	
412	Tajaajila Hordooffi yeroo dahumisaa booda kan itti hingargaminee yoo ta'ee maaiif? (Deebii tokkoo ol hindanda'ama, Deebii issa Hindubisiin)	1 .Eyyee 2.Lakkii 1. Hubannoo Kana hinqabu turee--1----- 2 2. Anni Fayyaa waanan tureef-----1-----2 3. Hojii nattii waan bayy'atuuf-----1----- 2 4. Kafaalitti issa waanin hinqabneef---1----- 2 5. Kilinikichi naarraa fagoodha-----1--- 2 6. Kilinikich achitti bayyee nama tursisa-1--2 7. Abbaan manaa koo naaf hin eeyyamu-1-2 8. Qulqulinaa garii hinqabu-----1--2 9. Amaantin koo nadhoowwa-----1---2 10. Dhaquun isaa fayyida hinqabu- --1---2 99 Kan biraa , ibsii _____ 1 2		
413	Dahuissa kanaan dura booda rakkoon fayyaa wayyii issin qunamee?	1. Eyyee 2. Lakkii →		
414	Did you go to traditional healer for your and your baby's health?	1. Yes 2. no		
415	Rakkoleen yeroo dahumisa dhufaan bayyen issaa walansa fayyitin nihirifama.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
416	Dubartii uulfaa kamiyu rakkoon fayyaa dahumisaa irraati ni qunama.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
417	Annilee rakkoo kanaaf saxiilamu nandanda-a.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
418	Rakkinni dahumisaa rakkoo fayyaa ulfaata na irrann gahu ni dand'a.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
418	Rakkinni dahumisaa rakkoo fayyaa ulfaata mucaa koo irrann gahu ni dand'a.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
419	Ogeesii yoo anna deesisee fayyaan koo naaaf eegama.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
420	Ogeesii yoo anna deesisee fayyaan dhalla/ mucaa koo ni eegama.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
421	Ogeeyyin fayyaa ciminaan leenjia'an meeshaa guutuu yooqabatan rakkoo hirisu	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
422	Dhabatin fayyaa Natti dhiyyatu meeshaa guutuu qaba.	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		
423	Dhabatin fayyaa Natti dhiyyatu ogeeyii deesiisan kan gahumisa qabaan guutuu qaba	1. Irratin waligalaa 2. Walihingaluu 3. Yadda adda		

Kutaa 5: Gaaffilee waa'ee Qulqullina tajaajila keeninsa eegumisa fayyaa dahumisaaf issa boode

T.L	Gaaffilee deebistootaaf dhiyaate	Deebi deebi'e	koodiitti darbii
501	Oogeeyyiin fayyaa kabajaa naamaaf qabuu?	1. Eyyee 2. Lakkii	

502	Iciitii nama eeganii bakka dawootti nama tajaajilu?	1. Eeyee 2. Lakkii 88. Anni hin beeku	
503	Waa'ee quliquulina isaa maaltu issintti dhagahama?	1. Bayeessa 2. Qubissa 3. dadhaba	
504	Tajaajila issan kennanitti itti quftaanitu?	1. Eeyee 2. Lakkii 88. Anni hin beeku	
505	Amaala ogeeyyii akkamitti ilaaltu?	1. Bayisee Gaariidha 2. Gaariidha 3. Homaa hin jeedhu 4. gadheedha	
506	Fageenyi Dhaabatichaa akkami?	1. Dhiwoodha 2. Jidduu galeesa 3. fagoo	
507	Meeqa demisisaa?	Sa'aa_____	

Gargarsa keessaniif baay'een isin galateefadha!

ANNEX. 5 Safe Delivery and PNC services

Focus group discussion guide

Introduction

Good morning and thank you all for coming!

My name is-----, My colloquy near to me is-----, We came from the Zonal Health Office, Oromia Regional Health Bureau and working with research team of SPH, AAU.

Read the following as it is:

“After we conduct some brief introduction, we will be talking about several different issues. We will be asking you questions about your overall experience with the maternal healthcare services in your locality and questions pertaining to pregnancy related health problems, preferences to place of delivery and factors influencing utilization of the available health services. Then, we will conclude the session by asking you for your recommendations on how such program might be implemented in your community in any way in the future.

Would you be willing to participate in the discussion? If yes, proceed, if no, thank and stop the discussion.

Name of the moderator-----Sign-----Date-----Time-----.

Preparation

Topic; Community perception of Antenatal, delivery and post natal services utilization and preferences to place of delivery

Target audience: pregnant women, husbands, religious & community leaders and health workers.

Objective of the discussion

- To explore the community understands and perceptions of Antenatal care utilization and preference to place of delivery in Ambo Town
- To assess factors affecting utilization of maternal health care services particularly Antenatal delivery and Post natal care

Description of the participants

A total of five focus groups, each comprising a minimum of six and a maximum of eight participants will be involved.

The selection criteria and the targeted audiences;

Residence	Pregnant women	Husbands	Religious & community leaders	Health workers
Ambo town	Group1	Group1	Group 1	Group 1
	Group2	Group 2	Group 2	

Description of the focus group

The participant and the facilitator will sit in a circle or around a table for the discussion. The facilitator will begin the session by introducing himself and explain the purpose of the focus group. The focus group meeting will last about 60 to 90 minutes.

Potential use of data

The gathering of this information will have an effort to gain further insight about underutilization of maternal health care services among pregnant women in the District.

Ground rules

Issue of confidentiality

Please be assured that any information collected here is strictly confidential. The staff of research and other participants will not directly share the information in a way that would reveal an individual's personal identity.

Consent for participation and tape-recording

At this point it is important that we obtain your consent for conducting the session. Understand that this is more for your protection than anything else.

Read consent form out loud to the group:

“Your remaining in the session indicates that you voluntarily agree to participate in this discussion program. You have the right to refuse to answer any questions and to end the discussion if you find it necessary to do so. For the sake of accuracy and efficiency, we will take notes and tape recording these sessions, unless any one has any objections.”

Role of moderator and note taker

The moderator will be in charge of facilitating the discussion. The moderator will bring the discussion back to the topic at hand should it go beyond the main issues. The moderator will not give any indication (verbal or physical) that would encourage certain types of comments or discourage other types of comments. In short, the moderator will guide the discussion when necessary, with carefully not to lead the discussion. It is our role to facilitate, but your role to tell us what you think. The note taker will have the sole responsibility of capturing the sessions accurately as possible. This will include not only participants' responses, but also nonverbal actions, physical environment, atmosphere of the session, as well as other vital characteristics of the session.

Importance of total group

In this group everybody should feel free to talk. Each and every opinion is important and wanted. It is very important that all the people in the group get a chance to express their opinions.

Agreement to disagree

In this group there are no rights or wrong answers. Everybody should express the opinions or attitude pertinent to him or her. When you express your opinions you are encouraged to be honest in your views of the pregnancy and delivery related problems and preventive programs (especially antenatal, institutional delivery care and post natal

care services). We want you to focus your comments on the program and not toward each other or members of the staff.

FGD topic guide

Theme1. Introduction

At this point, we would like to ask you to introduce yourself to the rest of the group.

Let us start with the research team (Name, age, education status) and each of you please tell me your name, how long you have lived in this area and your job.

Theme 2.Warm up questions

1. Next we would like to hear a little about your experience or knowledge about antenatal care and childbearing and post natal care

1.1. Who can tell us about is antenatal delivery and post natal care one by one?

1.2. Who would like to tell us dangerous health problems related to pregnancy and childbirth?

1.4 What are the causes?

1.5 What are the consequences?

1.6 What are the prevention methods?

Probe Questions for all (to be askedat the end of all 7 Qs /in probe area)

1. Would you explain further?

2. Would you give me an example?

3. Has anyone else had similar experience

4. Is there anything else?

5. "I don't understand."

Theme3. Pregnancy related risks, antenatal and post natal care

2. Now we would like to ask you specific questions about health problems related pregnancy and childbirth.

2.1. Do you think that a healthy pregnant woman should attend ANC, PNC?

1. Yes 2.NO, why?

2.2. Where do you think is the best place for ANC, PNC?

Why? What are the advantages? (*Probes*)

3. What are the primary reasons pregnant women should attend PNC clinics?
What are the advantages and disadvantages? (*Probes*)

5. Where do you think the best place for delivering a child? Why?
What are the advantages and disadvantages? (*Probes*)

6. Who do think the best person to assist during delivery? Why?
What are the advantages and disadvantages? (*Probes*)

7. What is your opinion about preferences to place of delivery from local cultural and religion point of view? (*Probes*)

Ending questions

Are there any issues, questions, comments that you would like to raise or points to you wanted to add? Debriefing I would like to thank you for your participation. I also want to restate that what you have shared with us is confidential. No part of our discussion that includes names or other identifying information will be used in any reports, displays or other publicly accessible media coming from this research. Finally, I want to provide you with a chance to ask any questions that you might have about this research. Do you have any questions for me?

“Thank You”

ANNEX 6:- INTERVIEW GUIDE QUESTIONS FOR KEY INFORMANTS

1. How do you see the status of maternal health service in your area(Zone, wereda)
2. Causes of maternal morbidity and mortality
 - Service organization and utilization
 - Utilization of ANC, Delivery, PNC and FP? Which service/es are under utilized? Why?
 - How many facilities rendering the services?
 - Are they accessible to the users; are they user friendly, why?
2. How do you see the status of delivery care (child birth) at health institutions (HC, GHC, HP and at community)?
 - Equipments and supplies, Infrastructures, Facilities
 - Staffing, skill
 - Quality of care
 - Attendants at community (TBA, TTBA)
 - Utilization pattern
3. What do you understand by?

- Emergency Obstetric Care? Basic Vs comprehensive
 - Skilled attendance Vs attendant at birth
 - Safe delivery service? Any training provided to health care providers? No. of trainees?
 - Status of service provision at facilities
4. In your opinion, how the following factors affect utilization of Emergency obstetric care (EmOC)?
- Staffing(skill, behavior,comitement)
 - Equipment, supplies, infrastructure (drug, electricity, water...)
 - Quality of care, technical assistance, supervision?
 - Transport(ambulance)
 - Service fee, User unable to afford?
5. What actions have you been taking to promote institutional delivery?
- Human resource development
 - Health institution construction and equipping
 - Community awareness creation , collaboration with TBAs, TTBA's, HEW's
6. Where do women in your area prefer to deliver?
- Home, health facility, Why? Whom they prefer for attendance?
7. How do you promote safe delivery service utilization in your area?
- Community mobilization, use of HEW's, TBAs and Service expansion,

Annex 7 :- Safe Delivery and PNC services
Observation Check list for equipments, facilities and supplies

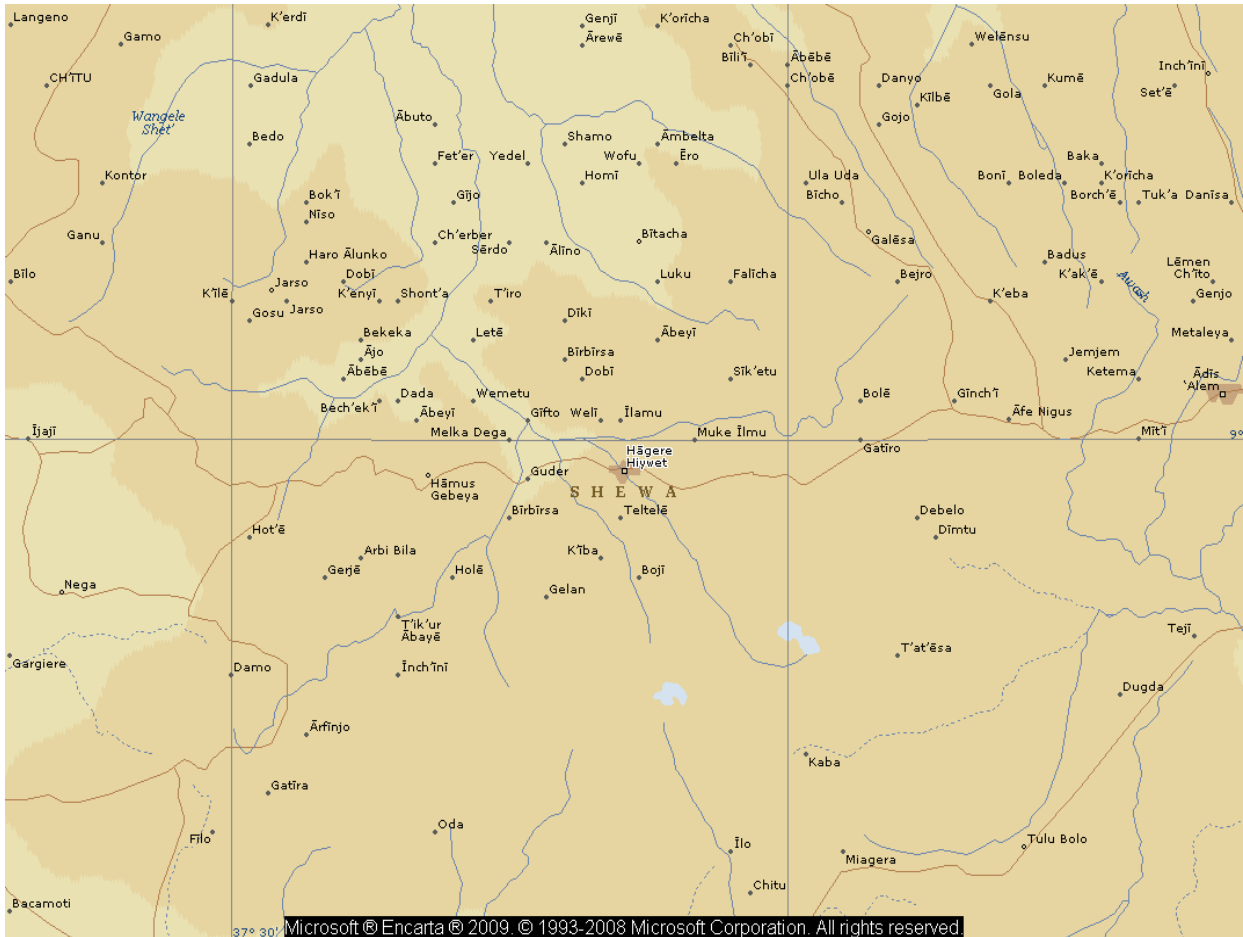
S.no.	Item	Available	Comments
1	Separate Waiting room		
2	Separate delivery room		
3	Sufficient light		
4	Functional water supply		
5	Delivery bed		
6	Beds for mothers and neonate		
7	Person in charge of delivery service		
8	Delivery register book		
9	Equipments		
	Sterilizers		
	Sphygmomanometers		
	Stethoscope		
	Weighing scales(infant)		
	Fethoscope		
	Clinical thermometer		

	Vacuum extractor		
	Obstetric forceps		
10	Protective clothes		
	Apron		
	Drapes/ Rubber sheet		
	Gown		
	Blanket		
11	Supplies		
	Cord ties		
	Gloves		
	Gauze swabs		
	Cotton		
	Disposable syringes and needles		
	Disinfectants		
12	Minimum equipments for delivery		
	Scissors		
	Forceps		
	Bag and mask for neonatal resuscitation		
	Mucus extractor		
13	Basic equipments for uterine evacuation		
14	Essential drugs		
	Antibiotics(oral and injectables		
	Antimalaria(Quinine.Coartem etc)		
	Antihypertensive(hydralazine Aldomete etc)		
	Anticonvulsants(Diazepam, others)		
15	Ambulance for referral		

Annex 8 Safe Delivery and PNC services

Checklists for review of records (ANC, delivery and referral registration books)

S. no	Item	NO. per months(Jan 2007 to Dec 2008)												Remark
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	ANC attendees													
2	Labor admitted													
3	Labor attended													
	SVD													
	Instrumental													
	Episiotomies													
	Still birth													
	Partograph filled													
4	Delivery attendants													
	HO													
	Midwife nurse													
	Other nurses													
	Other HW													
5	Labor complications													



Annex 8 Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in this or another university and that all sources of materials used for this thesis have been fully acknowledged.

Name: *Abate Aregaw*

Signature: _____

Date: _____

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

Name: ***Dr. Mesganaw Fentahun (MD, MPH, PhD Association Professor)***

Signature: _____

Date: _____