

**Determinants of Institutional Delivery Service Utilization in Omo Nada
Woreda Jimma Zone, South West Ethiopia: Community Based Case Control
Study, 2016**

By: Meaza Hailu (BSC)
Email: meazahailu97@gmail.com

A thesis submitted to Jimma University College of Health Sciences Department of Health Economics, Management and Policy for Partial Fulfillment of the Requirements for Masters of Public Health in Health Services Management.

Jimma, Ethiopia

June, 2016

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By: Meaza Hailu (BSC)

Email: meazahailu97@gmail.com

Advisors:

Mr FikruTafese (BSc, MPH, Assistance Professor)

Mr GebeyehuTsega (BSc, MPH)

Jimma, Ethiopia

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ABSTRACT

Background: Institutional delivery is one of the core components to reduce maternal and new borne morbidity and mortality. However, in Ethiopia institutional delivery coverage is still very low and it is around 15%. There is limited study at national and local with case control study design. Therefore, the aim of this study was to identify determinants of institutional delivery service utilization in Omo Nada district, Southwest Ethiopia.

Methods: A community based Case Control study supplemented by qualitative was employed from March 1 to 20, 2016. Simple random sampling was used to identify study subjects after identification of cases, those mothers who deliver at health facility and controls those mothers who deliver at home by undertaking census. By considering 1:2 ratio of case to controls one hundred forty two cases and two hundred eighty four mothers were planned to be included in the study. The quantitative data was collected using pre-tested and structured questionnaire and eight FGDs were done using interview guide. Data was entered into Epi-data software version 3.1 and exported to SPSS Version 20 for analysis. Descriptive statistics like frequency table and graphs were used for data presentation. Factors with p-value <0.25 in bivaraiate analysis were entered to multi variable logistic regression and statistical significance was considered at p-value <0.05 . OR and 95% CI were used to show the strength and significance of the association.

Results: Out of 142 cases and 284 controls planned to participate 140 cases and 273 controls were participated with response rate of 98.6% and 96.1% respectively. Based on this study educational status of the mother [AOR=2.15, 95% CI, 1.16, 4.00], educational status of the husband [AOR=1.91, 95% CI 1.21, 3.01], having ANC follow up [AOR=3.55, 95%CI 1.54, 6.23], Knowledge of mothers about institutional delivery [AOR=1.6,95%CI 1.23, 2.21] and use of maternal waiting home [AOR=19.9,CI 7.38,30.41]were significant and determinants of institutional delivery service utilization.

Conclusions: The finding of this study shows educational status of the mother, husband education, having ANC follow up, knowledge of the mother about institutional delivery and use of maternal waiting home were determinants of institutional delivery. Based on this increasing education status of women and husbands, enhancing the use of maternal waiting home and creating awareness about ANC and providing health information about institutional delivery during ANC use were recommended.

Acknowledgement

First and foremost I would like to thank almighty God. I would like to acknowledge Jimma University College of health sciences department of Health Economics, Management and Policy for giving me this chance to conduct this research. I would like to thank my advisors, Mr. Fikru Tafese and Mr. Gebeyehu Tsega for their valuable comments, suggestions and encourage from beginning to end of the study. I would like to thank Jimma Zonal Health Department, Omo Nada District Health Bureau and different kebele health extension workers on which the study conduct for their positive responses to facilitate this stud. My special thanks also go to study participants, data collectors and supervisors. Finally, many thanks for my family and friends who have helped and encouraged me during my study.

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Abbreviations

- AOR Adjusted Odd Ratio
- ANC Ante Natal Care
- AOR Adjusted Odds Ratio
- CI Confidence Interval
- COR Crude Odds Ratio
- DHS Demographic Health Survey
- EDHS Ethiopian Demographic Health Survey
- EPMM Ending Preventable Maternal Mortality
- FGD Focus Group Discussion
- HEW Health Extension Worker
- MDG Millennium Development Goal
- MMR Maternal Mortality Ratio
- MWH Maternal Waiting Home
- SBA Skilled Birth Attendance
- SDG Sustainable Development Goal
- SPSS Statistical Package For Social Scientists
- SSA Sub-Sahara Africa
- TBA Traditional Birth Attendance
- TTBA Trained Traditional Birth Attendant
- UNICEF United Nation‘S Children Education Fund
- WHO World Health Organization

CHAPER ONE: INTRODUCTION

1.1. Background

Institutional delivery is giving birth to a child in a health care institution under the overall supervision of trained and competent health personnel where there are more facilities available to handle the complicated situation and save the life of the mother and child. It is one of the major contributing factors to reduce maternal and child morbidity and mortality(1).

The focus on maternal mortality was sharpened when reduction in maternal mortality became one of eight goals for development in the Millennium Declaration (Millennium Development Goal) in 2000. The Millennium Development Goal 5(MDG 5), the corner stone of the strategy to improve maternal health, includes two targets: reduce maternal mortality by three quarters and achieve universal access to reproductive health from 1990 to 2015. However, Ethiopia did not achieve the 2015 MDG 5 maternal health targets(2,3).

Sustainable development goals (SDG 3.1) aimed to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030(4).Strategies toward ending preventable maternal mortality (EPMM), establishes a supplementary national target that every country should reduce maternal mortality ratio (MMR) by at least two thirds from the 2010 baseline and no country should have an MMR greater than 140 per 100, 000 live births and outlines a strategic framework for achieving targets by 2030 (5).

Institutional delivery is one of the most appropriate cost-effective and achievable strategies in resource poor countries to reduce maternal and child mortality. Hence ,improve maternal and new child health and increase quality of life(6).

1.2 Statement of the problem

Maternal mortality rate remains to be challenging to health system Worldwide. Globally, an estimated 303,000 mothers die each year and 800 mothers die every day due to complications of pregnancy and childbirth. Among this Developing countries account for approximately 302,000 of the estimated global maternal deaths, the majority of which are in sub-Saharan Africa region accounting for approximately 201,000 , followed by Southern Asia 66 000(3).

An estimated 40% of pregnant women, 50 million per year experience pregnancy-related health problems during or after pregnancy and childbirth, with 14% suffering serious or long term complications. As a result, 300 million women suffer from pregnancy-related health problems and disabilities, including anemia, uterine prolapse, fistula, Pelvic Inflammatory Disease, and infertility (5).

The World Health Organization promotes skilled attendance at every birth to reduce maternal mortality Globally coverage of skilled attendant during childbirth increased from 62% in 2000 to 73% in 2013(7) . Nearly all births in developed countries, 61.9% in less developed countries, 35.3% in the least developed countries and 33.7% births in eastern Africa were attended by skilled health personnel. Birth with skilled attendance was low in Southern Asia (40%) and SSA (47%), the two regions with the greatest number of maternal deaths (5).

In Ethiopia institutional delivery service utilization at national level is still very low. The previous trends of institutional delivery were 5%, 10% & 16%(7–9). In Urban births are six times more likely than rural births to be delivered in a health facility 59 percent versus 10 percent. The percentage of births delivered in health facility ranges from 10 percent in Afar to 87 percent in Addis Ababa. The institutional delivery service utilization of Oromia National Regional State is still the lowest 13% next to Afar 10% and Amhara 12% compared with Addis Ababa 87%(9).

In 2015 alone, this translated into more than 40 million unattended births; about 90 % of in South Asia and SSA. Institutional delivery in Ethiopia is still very low. Only 15.5 % of births are assisted by skilled service providers at institution, and 51 % of births are assisted by relatives , 27 % of births are assisted by traditional birth attendants while 5% of births are unattended(9).

More than 70% of all maternal deaths are due to five major complications; like hemorrhage, infection, unsafe abortion, hypertensive disorders of pregnancy and obstructed labor. Majority of maternal deaths 61% occur in the postpartum period and more than half of these deaths occur during the first day of delivery.

In Ethiopia maternal Mortality rate was projected to be reduced to 267 per 100,000 by 2015 (10); but trends of maternal deaths per 100,000 live births shows 743 in 2005, 523 in 2010 and 353 in 2015. Even though Ethiopia is categorized as making progress, but the 2015 MDG 5A is not achieved (3).

The lifetime risk of maternal death in sub-Saharan Africa is high 1 in 36 when compared to Developed region 1 in 4900 in, Europe 1 in 3400, Northern Africa 1 in 450, Southern Asia 1 in 210 and Developing countries 1 in 150. In Ethiopia the lifetime risk of maternal death is high estimated that 1 in 64(3).

Utilization of health service is affected by multiple factors including not only availability and also, distance, cost , quality of service, socio-economic factors and personal health beliefs(11–13). Majority of study conducted previously showed as some of possible factors for utilizing of institutional delivery in Ethiopia include that woman’s education, economic status, ANC service, accessibility of health facilities and previous mode of delivery well studied(12,14,15).

However, Maternity Waiting Home (MWH) as one factor for institutional delivery service utilization is little studied. As the best of the investigators knowledge there in no study conducted in the study area regarding factors affecting intuitional delivery. Therefore, this study attempted to identify determinants of institutional delivery service utilization by employing case control study design supported by qualitative study in Omo Nada woreda Jimma zone, south west Ethiopia.

1.3 Significance of the study

- To generate useful information about determinants of Institutional Delivery service utilization for policymakers and health planners that could lead to reforms that encourage institutional delivery and reduce maternal mortality at national and local level.
- This study can fill the literature gap related to institutional delivery service utilization in south west Ethiopia using a case control study supported by qualitative approaches.
- This study can be a baseline for other researchers interested in this area.

CHAPTER TWO: LITERATURE REVIEW

Overview of Global Maternal Mortality ratio

Maternal mortality remains a major global public health concern more than twenty years after the international Safe Motherhood Initiative was launched. Globally, estimated 303,000 mothers die each year from complications of pregnancy and childbirth, nearly all in Sub-Saharan Africa and Asia, and many women die from obstetric complications. In Sub-Saharan Africa maternal mortality ratio 546, in Southern Asia 182, in Chad 856, in Congo 420, in Kenya 510, in Nigeria 814, in South Sudan 789 and in Ethiopia 353 mothers die per 100,000 live births(3).

Prevalence of institutional delivery

Prevalence of institutionally delivered Mothers was Nepal 18%(20), Tanzania 56%(16) and according to EDHS mini 2014 report of Ethiopia were 15.5% , Dodota Woreda Arsi zone were 18.2%(16), SamreSaharti District 4%(17), Bahir Dar 78.8% (14), Sekela District12.1% (14), Metekel zone 12% (12), Goba47% (18), Boricha District of Sidama Zone 38.6% (13), Lume District 37% (19), Sidama Zone, Southeast Ethiopia 26.8% (5), Biharamulo district, Munisa woreda 12.3%(21)and In Jimma Zone report 75% Mothers are delivered in institutional.

and each Ethiopian regions Prevalence of institutional delivery was , in Addis Ababa 86.5%, Dire Dawa 59.2%, Harari 45.3%, Gambela 31.9%, Tigray 26.7%, Benishangul-Gumuz 21%, Somali 15.9%, SNNP 14.9%, Oromia 13.3% , Amhara 12% and Affar 9.9% (9) were delivered at health facility.

Personal related determinants

Place of residence

Study conducted In West Wolega Zone showed that living in urban areas mothers were four times more likely to deliver in health facility compared to those with Rural living area mothers (22). In similar study in Metekel zone 1.43 times(12), Dodota Wored Arsi zone were twenty three times(16), Sekela District five times (15), Goba four times (18)and Bair dare zone four times (11)also suggested that living in urban areas mothers were more likely to delivered in health facility compared to those with Rural living area mothers.

Mother education

The study showed, Secondary and above education level of mothers In Bosomtwe-Atwima-Kwanwoma district of Ghana four times (24), West Wolega Zone was 3 times more likely to give birth at health facility than illiterate mothers (22). On similar study in Bahir Dar City four times(14), Sekela District twelve times (15), Borecha district four time (13), Bahir Dar zone four times(11), Goba three times(18) , Dodota Woreda four times(16) , Bako District three times (23), Sidama Zone twenty percent times(5) and Samre Saharti District fourteen time (25) Secondary and above education level of mothers are more likely delivered at health facility than illiterate mothers

Husband education

The study showed, Secondary and above education level of husbands *in Loka Abaya district, Sidama Zone* was AOR 14.79(95% CI 3.01-65.6) times more likely whose wife to give birth at health facility than illiterate husbands. (22). In Goba Woreda, Oromia region AOR 5 (95% CI 2.27-6.81) (18).

Mother Occupation

Study conducted In Bako District, Oromia region house wife occupation of mothers were 23 times more likely delivered in health facility than Government employed(23).

Age at Last Delivery

Study done In In Bosomtwe-Atwima-Kwanwoma district of Ghana study conducted Mothers whose ages were 31 years and above were 3 times ,West Welega Zone Age at last delivery of mothers (15-19 yrs) 10 times more likely were delivered in health facility than 35-49 yrs (23). Mothers with the age range of 15-19yrs were about five times more likely to give birth at health facility when compared to those aged above 35yrs(5). more likely to deliver at home, compared with mothers aged 30 years or less(24).

Parity

A study on patterns of maternal health care utilization has also shown increase in parity decreases the chance of using delivery care[38]. The study conducted In SamreSaharti District Women with 8-11 children 0.24 times, had less odd of selecting health facility for delivery services than women with 1-4 children(14), in Sekela district 3.3 times women only delivered one child more likely delivered in health facility than five(15), Lume woreda 2 number of birth 6.73 times more likely deliver in health facility than more than 4 number of child(19), Loka Abaya district, sidama Zone(5) 1.98 times less likely deliver in health facility than those with first order births.

Autonomy/ decision power of Women

In DodotaWoreda, Arsi zone 0.14 times (16), Borecha 0.2 times (13) and Metekel zone 5.6 time (12) husband & others decided place of mother delivery than self. And Study conducted Bako District(23), Oromia region Final decision about place of delivery of Couples together were 0.25 times more likely delivered in health facility than other relative.

Knowledge of Mothers

Knowledge is one factor that can explain and related with place of delivery for women. In Bahirdar zone 62% good knowledge mothers were delivered in health facility than poor knowledge(14). Borecha district women's knowledge of birth related complications 12.4 times (13), Sekela District 2.97 times(15) and Metekel zone 4.4 times (12), more likely delivered in health facility than not knowledgeable Mothers.

Antenatal Care determinants

Past obstetric history like the birth order, number of pregnancies, the use of prenatal care, and duration of labor were found to affect the utilization of institutional delivery services provided by skilled delivery attendants [29]

Study conducts of mothers who received four and above ANC service In Bosomtwe-Atwima-Kwanwoma district of Ghana Regarding ANC visits, the risk of home delivery for mothers with more (at least four) ANC visits reduced by 0.3 (30%), Sekela District 4.26 times (15), Bahir Dar zone 4.2 times (11) , Goba 2.7 times (18), West Wolega Zone 2.91 times (22) and SamrenSaharti District(17) 4.6 times more likely delivered in health facility than no ANC received mothers compared with those with fewer (1-3) ANC visits(20).

Maternal health studies indicated that the use of prenatal follow-up is positively associated with the utilization of institutional delivery service [36, 37]. In a study done in Ethiopia the likelihood of giving birth in the health institutions among users of ANC were three times higher as compared to non-users of ANC follow-up(AOR=2.80, 95% CI: 1.27, 6.17)[25].

Order of pregnancy has also showed a statistical association with the utilization of safe delivery. Those women who have five and more children were less likely to utilize the service than those who have one child (OR (95%CI): .18, (.08, .42))[29].

Age at first pregnancy

Age at first pregnancy has showed statistical association with place of delivery. Those who were pregnant before the age of 20 years were less likely to utilize the service than those who were pregnant after the age of 20years (OR (95%CI): .60, (.38, .95)) [18]. Other studies done in Kenya and Indonesia have also shown that younger women are more likely to utilize delivery services since they are more prone to complications than older women[7, 39].

Accessibility: Time to reach home to health institution and Transportation)

Study done In West Wolega Zone, Mothers who have been Time to reach home to health institution less than one hour were four times more likely delivered in health facility than above two hours. (22). Study conducted In Bako District, Oromia region presence of availability transport mother were 0.53 times (23) more likely delivered in health facility than no availability of transport .

History of prolonged labor

Another strong factor for utilization of health care for delivery is the length of previous labor. As the length of labor prolonged in the previous delivery the woman prefers to deliver in health institution, the same is true when a woman had other difficulties in the previous labors[26]. Study showed in Metekel zone Greater than 12 hours Duration of labor 2.75 times less likely delivered in health facility than below 12 hours (12) and in similar study in Dodotaworeda the previous history of prolonged labor 0.2 times more than one and half a day less likely mothers delivered in health facility than below half a day (16), in SamreSaharti District Women who had a history of obstructed labor 6.3 times were more likely to select Health Facility for delivery service than women who had not that experience (25), Loka Abaya district , sidama Zone(5) mothers who had ever given birth at least once earlier in health facility tended to utilize skilled delivery services 6.70 times more likely than those who had not.

Maternity waiting homes

Maternity waiting homes (MWHs) are temporary shelters for pregnant women located near a hospital or health center. It has been endorsed by WHO since 1996 as one component of a comprehensive package to reduce maternal morbidity and mortality. MWH provides skilled delivery and postnatal care, referrals in case of complications, counseling for maternal and newborn care including nutrition and early initiation of breastfeeding, family planning and social services including community awareness of existing maternal waiting homes, income generation activities, gender awareness and support for domestic and gender-based violence. It also increases institutional deliveries and consequently decrease maternal mortality caused by the delay in reaching obstetric care(34).

Conceptual framework

Underlying factors

proximal factors

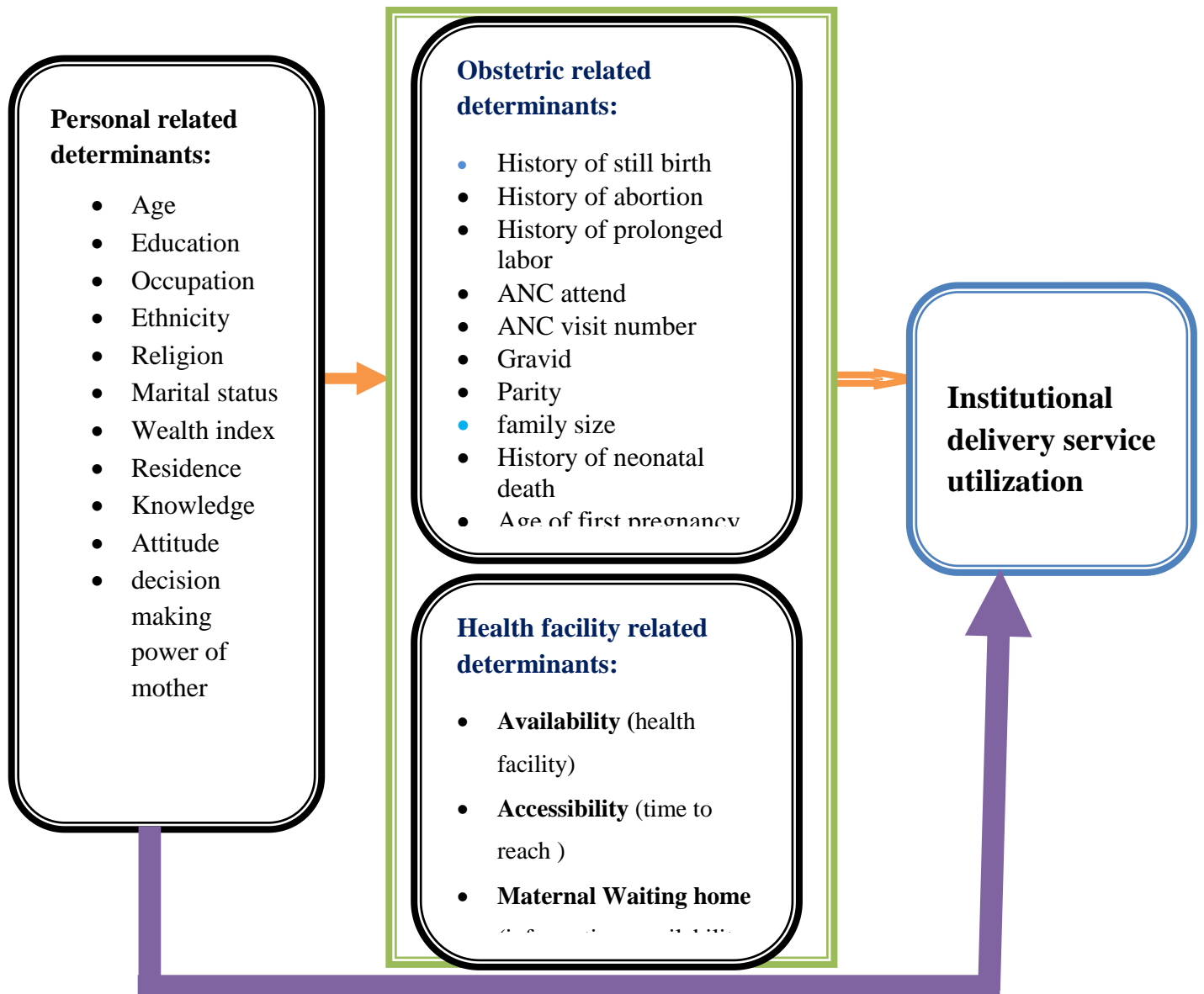


Figure 1: Conceptual frame work [Source: Adapted from different literatures(12,25,30)]

CHAPTER THREE:

OBJECTIVES

3.1 General objective

To identify determinants of institutional delivery service utilization in Omo Nada District, Jimma Zone, South West Ethiopia, 2016

3.2 Specific objectives

- To identify personal related determinants of institutional delivery service utilization.
- To determine Obstetric related determinants of institutional delivery service utilization.
- To identify health facility related determinants of institutional delivery service utilization.

CHAPTER FOUR: METHODS AND PARTICIPANTS

4.1 Study area and period

The study was conducted in Omo Nada Woreda Jimma Zone, southwest Ethiopia. Omo Nada Woreda is 300kms far from Addis Ababa in southwest direction, Capital city of Ethiopia and 70 kms from Jimma town. The total projected population of the Woreda is 316,606. Out of this 157,984 (49.9%) are females. Pregnant women are estimated 10,986. The woreda is divided into 41 kebeles with 39 rural and 3 urban kebeles. In Omo Nada woreda there are 10 health centers and 39 health posts. 18 kebeles (46%) have weynadega weather condition and the remaining are highlands. The study was conducted from March 1 to 20, 2016.

4.2 Study design

Community based case control study design supplemented by qualitative approach was conducted.

4.3 Population

4.3.1 Source population

All child bearing age women who gave birth in the last 12 months preceding to the survey date and living in Omo Nada Woreda.

4.3.2 Study population

For quantitative data: Selected samples of Childbearing age women who gave birth in the last 12 months prior to the survey date in Omo Nada Woreda were included in the study.

- Cases: Selected women who gave birth at health facility in the last 12 months in Omo Nada Woreda.
- Control: Selected women who gave birth at home in the last 12 months in Omo Nada Woreda.

For qualitative data: Purposively selected mothers who gave birth in the last 12 months and husbands.

4.4 Eligibility criteria

4.4.1. Inclusion criteria

For quantitative

- ✓ Women who gave birth in the last 12 months irrespective of place of delivery and no participated on qualitative data collection time and lived in local area.

For qualitative

- ✓ Women who gave birth in the last 12 months irrespective of place of delivery with selected study population and not participated on quantitative data collection time.
- ✓ Husband: whose wife delivered in the last 12 months and lived in local area.

4.4.2 Exclusion criteria

Study Participants, Who fulfilled the criteria but who had severely ill were excluded from the study.

4.5. Sample size and sampling procedure

4.5.1 Sample size determination

For quantitative data: The sample size was calculated by double population proportion formula for unmatched case control study using Epi Info version 7, Antenatal care follow up factor variable of mothers who have utilized institutional delivery care among delivered mothers (31), Was used it gave maximum sample size.

Parameter and assumptions:

Confidence level = 95%

Power of 80

Ratio of case to controls 1:2

Percent of control exposed= 79.46%

Percent of case with exposure =90.5%

OR = 2.45

Case = 128

Control = 256

Total = 384

Non response rate = 10%

Total Cases = 142

Total Controls = 284

Final Sample size = 426

For qualitative data

Eight FGD having a range of 6 – 8 discussants were conducted. Each FGD took one to one and half hours. The groups were homogenous in terms of sex, age and place of delivery. Determinants of institutional delivery service utilization as explained by Focus Group Discussants were thematically categorized to provider and health facility related determinants.

4.5.2 Sampling techniques and Procedure

Sampling techniques: *Out of 41 total kebeles* By Simple random sampling (SRS) twelve kebeles (D/Yaya, Laftaka, B/Gombo, G/Bula, N/Cala S/Adami, N/Sokote, N/Dawe, L/Bula, G/seden kebeles, Asendabo and Naddaa) were selected. Before beginning the actual data collection cases and controls were identified by census. Total sampling frame was 1673 out of this 802 cases and 1113 controls. Proportional allocation to size was employed to determine number of samples taken from each kebele. Finally, study subjects were identified based on Computer generated random numbers for cases and controls separately.

Sampling procedure

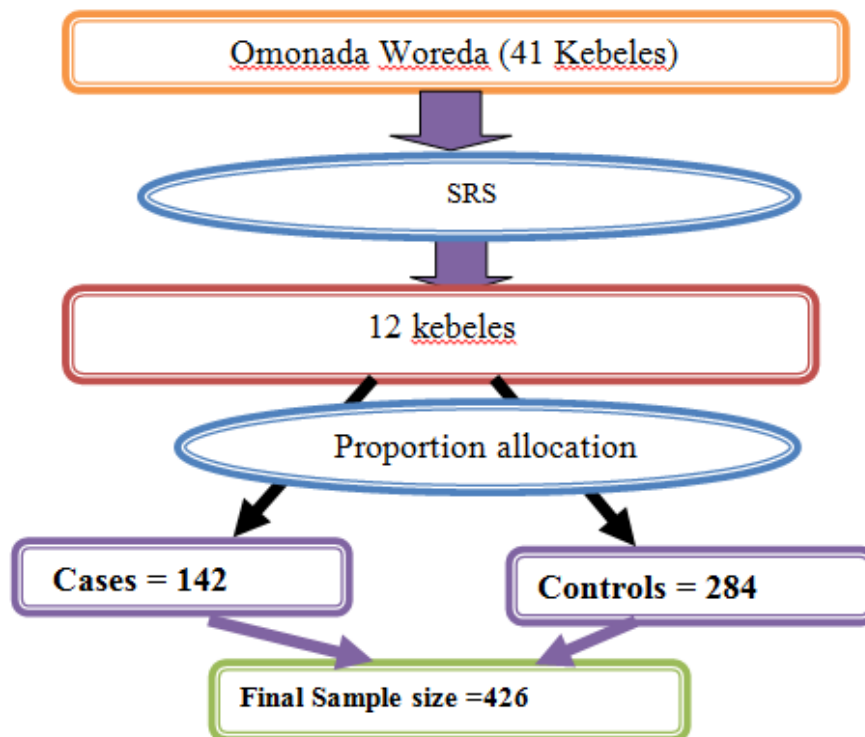


Figure 2: schematic presentation of sampling procedure for identifying study participants on determinants of institutional delivery service utilization in Omo Nada Woreda, Jimma Zone, South West Ethiopia, 2016

4.6 Study Variables

4.6.1 Dependent Variables

Institutional delivery Service Utilization

4.6.2 Independent Variables

Personal related determinants: Age, Marital Status, Educational status, Occupation, Ethnicity, Religion, Wealth index, Residence, Knowledge about institutional delivery, Attitude about institutional delivery & decision making power of mothers

Health Facility Related factors: Availability (health centers and hospitals) and Accessibility (Time to reach health institutions) and Maternity Waiting home (information, availability and used of MWH)

Obstetric related factors: family size, Age of first pregnancy, ANC attendance, ANC number of visit, parity, gravid, history of still birth, history of abortion, history of neonatal death and history of prolonged labor.

4.7. Data collection procedures and instruments

4.7.1 Data collection procedure

Data collection tools were adapted from various similar studies and Ethiopian Demographic Health Survey 2011(9,22). Interview guide were also used for Focus Group Discussion. Data collection tools was translated from English to local language, "Afan Oromo" then, back translated to English by skill full persons in both languages to check consistency. Data was collected by diploma nurses who understand, speak and write the local language were used as data collectors.

4.7.2 Data quality control

Training was given for the data collectors and supervisors for two days by the principal investigator on the objective of the study and data collection tools. Before the actual data collection, the quality of the data was assured by translation and back translation of the questionnaire and pre-testing of the questionnaire. The questionnaire was pre-tested in waktola kebele which is out of study kebeles on 5% of sample size before the actual data collection. The principal investigator and supervisors was engaged in all the entire process of data collection.

4.8. Operational definitions and terms

Accessibility: The location of client to health facility it takes in to account clients travel time(less than one hour).

Availability: in this study availability means include health centers and hospitals but not health post.

Cases (Health facility): Selected women who gave birth at health facility in the last 12 months in Omo Nada woreda.

Control (Home): Selected women who gave birth at home in the last 12 months in Omo Nada woreda.

Health Care Provider: health care professionals who were certified for maternal health service and properly assigned in maternity unit. (Midwives, Nurse, Health officers, Emergency Obstetric surgical officer) but not include health extension workers.

Institutional Delivery utilization: means giving birth to a child in health facility under the overall supervision of trained and competent health personnel where there are more facilities available to handle the complicated situation and save the life of the mother and child

Knowledge: It has 15 items questions and was evaluated each 0 &1 out of 15 and was treated as continuous variables in logistic regression.

Attitude: It has 10 items questions with grade 1 up to 5 and it was evaluated out of 50 and was treated as continuous variables in logistic regression.

MWH users: those who ever used Maternity Waiting Home services before delivery.

MWH non users: those who did not started using Maternity Waiting Home services

4.9. Data analysis procedures

Data was entered into Epi-data software version 3.1 and exported to SPSS Version 20 for analysis. The analysis was presented in descriptive statistics in frequency, tables and graphs. Bivariate analysis was performed to assess the association of each independent factor with institutional delivery services utilization. Variables with p-value less than 0.25 in bivariate analysis were selected as candidate and entered into multivariable logistic regression by backward step wise to identify independent determinants of institutional delivery services utilization. Independent factors associated with institutional delivery services utilization was declared with p value less than 0.05. OR and 95% CI were used to show the strength and significance of the association.

For qualitative data: Data was transcribed into English text by the principal investigator from the note and by replaying the tape recorder. The different ideas in the text were merged in their thematic areas and thematic framework analyses were employed to extract meanings out of the texts manually. Then finally results were presented by supportive with quantitative data.

4.10 Ethical considerations

The proposal was submitted to the college of Health Sciences Research and Ethics Committee, of Jimma University for approval. Following the approval, Official letter of co-operation was written to concerned bodies by the School of Health Sciences Jimma University. Informed consent explaining the nature of the study was obtained from each study participants immediately before the interview. No personal identifiers were used on data collection form. The recorded data was not accessed by a third person except the principal investigator, and was kept confidentially and anonymous. The study participants were not subjected to any harm using the findings of this study.

4.11 Dissemination plan of the study

It will be presented to Jimma University College of health Science department of health economics, management and policy. Hard and soft copies will be submitted to department, then it will be disseminated to local governmental and non-governmental organizations working in the area through presentations on conferences as well to the community; with that, it will help them to improve the problem. Further effort will be made to publish on relevant and reputable journal.

CHAPTER FIVE: RESULT

5.1 personal related characteristics

Among 142 cases and 284 controls planned to participate 140 cases and 273 controls were participated with response rate of 98.6% and 96.1% respectively. The mean age of the cases and controls were 28.99 (SD: ± 5.77 years) and 30.16 (SD: ± 5.80 years) respectively. Majority of the study participants were in the age group of 20-34years. Among the total respondents, most women 136(97.1%) cases and 257(94.1%) controls were married. In terms of ethnicity, 128(91.4%) of the cases and 253(92.7%) of the controls were Oromo. Regarding educational status of women of cases (62.1%) and controls (84.6%) cannot able to read and write. One hundred thirteen (80.7%) of the cases and 233(85.3%) of the controls were Muslim religion follower. Regarding the women occupation 90 (64.3%) cases and 173 (63.4) controls, were farmer. The mean knowledge of the mother cases and controls were 6.75 (SD: ± 2.56) and 5.13(SD: ± 1.97) respectively. One hundred twelve (80.0%) of the cases and 207 (75.8%) of the controls were rural residents. The mean attitude of the cases and the controls were 35.67 (SD: ± 5.99) and 34.57(SD: ± 5.54) respectively. In this study 67% among controls and 36.4% among cases decision making power was in the hands of women themselves. The study participants in the cases group 32(22.9%) and 57(20.9%) of the controls were second level of Wealth index.

Table 1: Personal related characteristics of cases and controls, Omo Nada Woreda Jimma zone, South West Ethiopia, March 2016.

Variables	Categories	Place of delivery		Total
		Case (ID) n=140	Control (Home) n=273	
Residence	Urban	28 (20%)	66 (24.2%)	94 (22.8%)
	Rural	112 (80%)	207 (75.8%)	319 (77.2%)
Religion	Orthodox	16(11.4%)	20(7.3%)	36(8.7%)
	Muslim	113(80.7%)	233(85.3%)	346(83.8%)
	Others ¹	11(7.9%)	20(7.3%)	31(7.5%)
Ethnicity	Oromo	128(91.4%)	253(92.7%)	381(92.3%)
	Others ²	12(8.6%)	20(7.3%)	32(7.7%)
Marital status	Married	136(97.1%)	257(94.1%)	396(95.2%)
	Others ³	4(2.9%)	16(5.9%)	20(4.8%)
Educational status of women	Unable to read and write	87(62.1%)	231(84.6%)	318(77%)
	Able to read and write	21(15%)	15(5.5%)	36(8.7%)
	Elementary	24(17.1%)	19(7%)	43(10.4%)
	Secondary and above	8(5.7%)	8(2.9%)	16(3.9%)
Educational status of husband	Unable to read and write	59(42.1%)	184(67.4%)	243(58.8%)
	Able to read and write	23(16.4%)	33(12.1%)	56(13.6%)
	Elementary	43(30.7%)	49(17.9%)	92(22.3%)
	Secondary and above	15(10.7%)	7(2.6%)	22(5.3%)
Women Occupation	Housewife	43(30.7%)	86(31.5%)	129(31.2%)
	Farmer	90(64.3%)	173(63.4%)	263(63.7%)
	Others ⁴	7(5.0%)	14(5.1%)	21(5.1%)
Husband Occupation	Farmer	112(80%)	216(79.1%)	112(80%)
	Merchant	19(13.6%)	42(15.4%)	61(14.8%)
	Others ⁵	9(6.4%)	15(5.5%)	24(5.8%)
Age of mother	<20 yrs.	13(9.3%)	18(6.6%)	31(7.5%)

	20-34 yrs.	105(75%)	189(69.2%)	294(71.2%)
	35-49 yrs.	22(15.7%)	66(24.2%)	88(21.3%)
	mean ages	28.99 (SD ± 5.77)	30.16 (SD±5.80)	
Wealth Index	Lowest	28(20%)	50(18.3%)	78(18.9%)
	Second	32(22.9%)	57(20.9%)	89(21.5%)
	Middle	21(15%)	62(22.7%)	83(20.1%)
	Fourth	34(24.3%)	48(17.6%)	82(19.9%)
	Highest	25(17.9%)	56(20.5%)	81(19.6%)
Decide place of delivery	Myself	51(36.4%)	183(67.0%)	234(56.7%)
	My husband	26(18.6%)	33(12.1%)	59(14.3%)
	Both of us	63(45.0%)	57(20.9%)	120(29.1%)

Others¹Religion (catholic, Protestant, wake feta)

Others²Ethnicity (Amara, Gurage, Wolita, Dawero, Kafino and Silte)

Others³ Marital status (single, divorced and widowed)

Others⁴Women Occupation (merchant, daily servant, government and on-government employed)

Others⁵Husband Occupation (government employed, non-government employed and daily servant)

5.1.1 Personal related determinants

Among personal related determinant variables;

- Secondary and above level of Mother education (COR 2.88(95% CI 1.36, 5.42))
- Secondary and above level of Husband education (COR 2.58(95% CI 1.11, 4.33))
- And Knowledge of mothers was significant by P-value less than 0.25 and candidate for multivariable logistic regression.

Table 2: Personal related determinants of cases and controls, Omo Nada Woreda Jimma zone, South West Ethiopia, March 2016.

Variables	Categories	Place of delivery		P-value <0.25	COR, 95% CI
		Case n=140	Control n=273		
Residence	Urban	28 (20%)	66 (24.2%)	0.339	0.78(0.48,1.29)
	Rural	112 (80%)	207 (75.8%)		1
Religion	Orthodox	16(11.4%)	20(7.3%)	0.275	0.49(0.15,1.54)
	Muslim	113(80.7%)	233(85.3%)	0.738	0.80(0.22,2.96)
	Others ¹	11(7.9%)	20(7.3%)		1

Ethnicity	Oromo	128(91.4%)	253(92.7%)	0.427	0.103(0.01-1.28)
	Others ²	12(8.6%)	20(7.3%)		1
Marital status	Married	136(97.1%)	257(94.1%)	0.503	0.47(0.52-4.27)
	Others ³	4(2.9%)	16(5.9%)		1
Educational status of women	Unable to read and write	87(62.1%)	231(84.6%)		1
	Able to read and write	21(15%)	15(5.5%)	0.292	2.03(0.088, 8.99)
	Elementary	24(17.1%)	19(7%)	0.175	3.15(1.58, 18.56)
	Secondary and above	8(5.7%)	8(2.9%)	0.046	2.88(1.36, 5.42)
Educational status of husband	Unable to read and write	59(42.1%)	184(67.4%)		1
	Able to read and write	23(16.4%)	33(12.1%)	0.001	2.54(0.46, 4.53)
	Elementary	43(30.7%)	49(17.9%)	0.076	1.69(0.65, 7.68)
	Secondary and above	15(10.7%)	7(2.6%)	0.035	2.58(1.11, 4.33)
Women Occupation	Housewife	43(30.7%)	86(31.5%)	0.923	0.50(0.14,1.82)
	Farmer	90(64.3%)	173(63.4%)	0.829	0.52(0.15,1.84)
	Others ⁴	7(5.0%)	14(5.1%)		1
Husband Occupation	Farmer	112(80%)	216(79.1%)	0.923	0.95(0.34,2.64)
	Merchant	19(13.6%)	42(15.4%)	0.746	0.83(0.27,2.57)
	Others ⁵	9(6.4%)	15(5.5%)		1
Age of mother	<20 yrs.	13(9.3%)	18(6.6%)		1
	20-34 yrs.	105(75%)	189(69.2%)	0.708	2.17(0.92,5.13)
	35-49 yrs.	22(15.7%)	66(24.2%)	0.631	1.67(0.97,2.86)
Wealth Index	Lowest	28(20%)	50(18.3%)		1
	Second	32(22.9%)	57(20.9%)	0.501	1.25(0.65,2.43)
	Middle	21(15%)	62(22.7%)	0.483	1.26(0.66,2.38)
	Fourth	34(24.3%)	48(17.6%)	0.428	0.76(0.38,1.50)
	Highest	25(17.9%)	56(20.5%)	0.160	1.59(0.83,3.02)
Decide place of delivery	Myself	51(36.4%)	183(67.0%)		1
	My husband	26(18.6%)	33(12.1%)	0.272	0.52(0.16,1.41)
	Both of us	63(45.0%)	57(20.9%)	0.713	0.71(0.38,1.33)

Others¹ Religion (Catholic, Protestant, Wake feta)

Others² Ethnicity (Amara, Gurage, Wolita, Dawero and Silte)

Others³ Marital status (single, divorced and widowed)

Others⁴ Women Occupation (government employed, merchant and non-government employed)

Others⁵ Husband Occupation (government employed and non-government employed)

5.2 Obstetric related characteristics.

As shown in the table 3 below, among obstetric related determinant variables; ANC attend, ANC number of visit and history of prolonged labor was significant by P-value less than 0.25 and candidate for multivariable logistic regression. The proportion of women who had ANC attended were 132 (94.3%) and 202 (74.0%) among cases and controls respectively. Among the total respondents, majority of women 85(60.7%) cases and 217(79.5%) controls were less than 12 hours history of labor. Most of mothers 2-3 times visit antenatal care 55 (42.6%) cases and 96 (45.3%) controls.

Table 3 Obstetric related determinants of cases and controls, Omo Nada Woreda Jimma zone, south west Ethiopia, March 2016.

Variables	Categories	Case n=140	Control n=273	P-Value*	COR,95%CI
family size	1-3	15(10.7%)	18(6.6%)	0.760	1.95(0.934,4.064)
	4-5	48(34.3%)	75(27.5%)	0.793	1.49(0.954,2.346)
	>5	77(55%)	180(65.9%)		1
Age of first pregnancy	<18 yrs.	94 (67.1 %)	176 (64.5 %)		1
	>= 18 yrs.	46 (32.9 %)	97 (35.5 %)	0.589	1.13(0.732, 1.733)
ANC attend	Yes	132 (94.3%)	202(74.0%)	0.020	3.66(1.865,7.203)
	No	8(5.7%)	71(26.0%)		1
ANC number of visit	1 time	21(16.3%)	58(27.4%)		1
	2-3 times	55(42.6%)	96(45.3%)	0.341	1.12(0.23, 4.21)
	4 ⁺ times	53(41.1%)	58(27.4%)	0.134	1.27(1.63, 6.54)
History of prolonged labor	<12hrs	86(61.4%)	217(79.5%)		1
	>=12hrs	54(38.6%)	56(20.5%)	0.154	1.39(1.26,1.62)
Parity	1	19(13.6%)	22(8.1%)	0.764	1.07(0.69,1.66)
	2-4	69(49.3%)	139(50.9%)	0.821	1.86(0.93,3.73)
	>/=5	52(37.1%)	112(41.0%)		1

Gravid	1	18(12.9%)	20(7.3%)	0.625	1.11(0.72,1.72)
	2-4	65(46.4%)	128(46.9%)	0.601	1.97(0.97,4.01)
	>/=5	57(40.7%)	125(45.8%)		1
History of still birth	Yes	10(7.1%)	15(5.5%)	0.361	0.59(0.19,1.84)
	No	130(92.9%)	258(94.5%)		1
History of abortion	Yes	20(14.3%)	31(11.4%)	0.392	1.301(0.72,2.38)
	No	120(85.7%)	242(88.6%)		1
History of neonatal death	Yes	10(7.1%)	15(5.5%)	0.427	1.33(0.65,2.71)
	No	258(94.5%)	92.9(130%)		1

P-vale* <0.25

5.3 Distribution of institutional delivery in terms of health facility related determinants.

As shown in the table 4 below Availability of health facility in the study area was assessed. Accordingly 234 (56.7%) of respondents confirm the availability and 124 (45.4%) of them deliver at health facility. 86 (61.4%) of cases was used maternity waiting home during their last delivery time and deliver at health facility and 20.32 (7.2%)mothers was used maternal waiting but not complete the service and deliver at home. Time to reach nearby health facility 1-2 hours on foot was 78(56.1%) of cases and 123(45.1%) of controls for their last child delivery.

Table 4 *Distribution of institutional delivery in terms of health facility related determinants of cases and controls, Omo Nada Woreda Jimma zone, South West Ethiopia, March 2016*

Variables	Categories	Cases n=140	Controls n=273	P-value*	COR,95%CI
Availability of HF	Yes	124 (45.4%)	110(78.5%)	0.127	2.47(2.79,4.14)
	No	30(21.4%)	149(54.5%)		1
Time to reach HF	<1 hour	31(22.3%)	95(34.8%)	0.940	0.59(0.33,1.09)
	1-2 hours	78(56.1%)	123(45.1%)	0.576	1.16(0.68,1.97)
	>2 hours	30(21.6%)	55(20.1%)		1
Information about MWH	Yes	130(92.9%)	253(92.7%)	0.946	1.23(0.46,2.26)
	No	10(7.1%)	20(7.3%)		1
Availability of	Yes	121(93.1%)	234(92.5%)	0.835	0.92(0.40,2.09)

MWH	No	9(6.9%)	19(7.5%)		1
Use of MWH	Yes	86(61.4%)	19(7.2%)	0.001	20.32(7.32,31.21)
	No	54(38.6%)	245(92.8%)		1

P-value* < 0.25

Respondents were asked for using and not using of health facility delivery.

Reason for delivering at health facility:

In response to this they mentioned different reason for utilization of institutional delivery, among the given reason majority (19%) of them utilize this service because of difficulty of labor, 13.6% need better service, 12.9% of them thought health facility delivery is save, 9.6% because of that they have told to give birth at health facility.

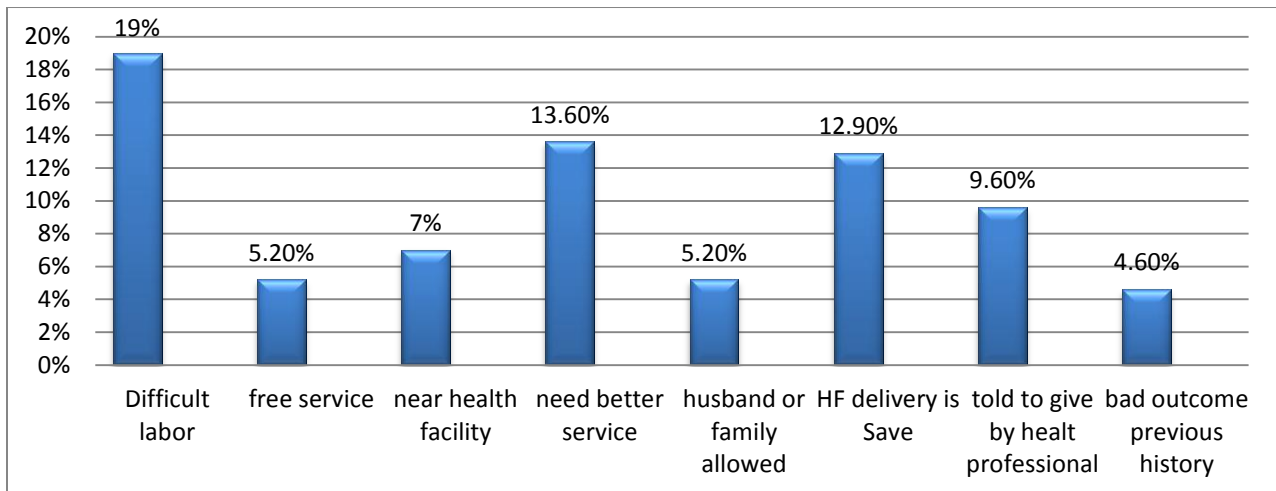


Figure 3: Reason for delivering at health facility in Omo Nada Woreda Jimma zone, South West Ethiopia, March 2016

Reason for not delivering at health facility:

Among controls also respondents mentioned reason to have birth at home. Most (40.6%) of them deliver at home because they had short duration of labor, 25.4% because of lack of transport, 17.10% of them because health facility is far away the remaining is mentioned below in graphs.

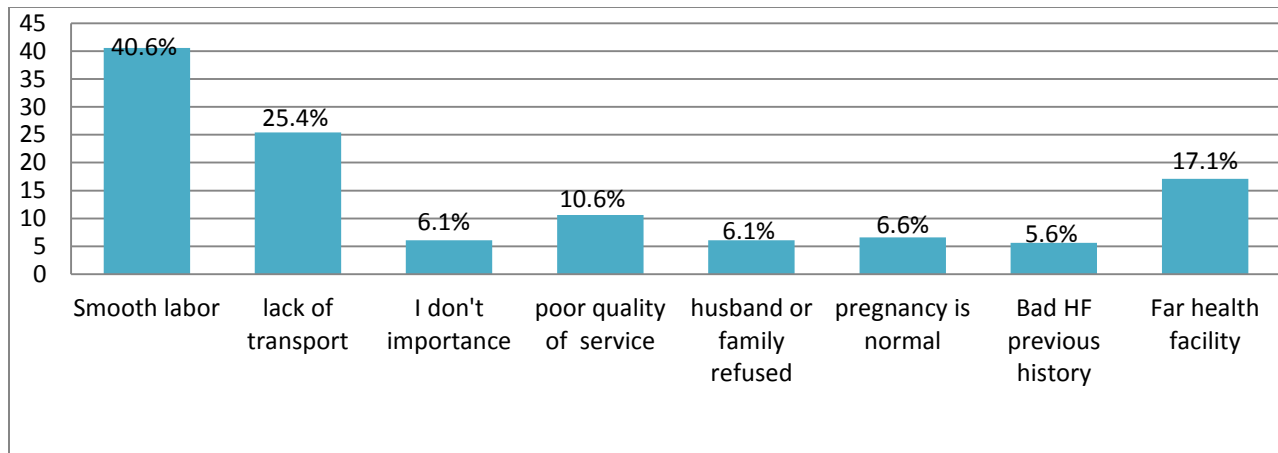


Figure 4: Reason for not delivering health facility in Omo Nada Woreda Jimma Zone, South West Ethiopia, March 2016

5.4 Determinant of institutional delivery

The final model was fitted using backward stepwise logistic regression method. All variables which had shown statistically significant association during the bivariate analysis such as maternal education, husband education, ANC attendance, ANC visit number, history of prolonged labor, use of maternal waiting home, availability of health facility, knowledge of mother about institutional delivery, were included in the final model to control the effect of confounder.

Finally, maternal education, husband education, use of maternal waiting home, ANC follow up, and knowledge of mother about institutional delivery were found to be determinant of institutional delivery utilization.

As shown in the table 5 below, educated women having education level secondary and above were two times more likely to use institutional delivery (AOR=2.15, 95% (CI 1.16, 4.00)). Accordingly husband education had shown association with institutional delivery, women whose husbands has educated as secondary and above have the probability of having institutional delivery almost two times higher than that of unable to read and write, (AOR=1.91(CI, 1.21, 3.01)). A one unit increase in knowledge mean score of mothers among case is 1.6 time more likely to use institutional delivery than controls (AOR= 1.6 (95% CI= 1.23, 2.21)).

Women who have ANC attend were four times more likely to have institutional delivery practice (AOR=3.55(95% CI 1.54, 6.23)) compared to had not follow ANC mothers.

The Qualitative data also supported this finding. *Most of the respondents stated that if the mothers get appropriate counseling and advise the exact date of delivery they (mothers) will give birth at health institution. A 35 years old control female participant code 4 replied that “I would have been better if they examine very well during antenatal care time and tell the exact date of deliver to come back to health facility.”*

In this current study maternal waiting home had shown statistical significance. Women who use maternal waiting home were twenty times more likely the chance of having institutional delivery compared to those who did not have maternal waiting home (AOR, 19.9 (CI, 7.38, 30.41)). Knowledge is one factor that can explain and related with place of delivery for women. Accordingly women who deliver at health facility and home were test by continuous logistic regression. Among the respondents, A one unit increase in knowledge mean score of mothers among case is 1.6 time more likely to use institutional delivery than controls (AOR= 1.6 (95% CI= 1.23, 2.21)).

Majority of the FGD participants also agree with the quantitative finding they (FGD) state “Maternity Waiting Home is essential for a mother to give birth at Health Institution if the mother stay at Health Institution level for 15 days , at the time of labor not only the mother but also the families are not facing a problem for transportation.”

As explained by a 33 years old male case FGD participant said “I am interested that she will stay in maternity waiting home because if health complication happens as a result of a delivery; if she die I will loss even her life “ But some of the participants disagree with the service of MWH. They stated that MWH make a trouble for a family as a whole.” If the mother stays at the health center for 15 days and above; who cares children? Who cook food for the family?

As explained by a 33 years old female control FGD participant said “I was started to utilized MWH service. But left it; because any one cannot care my kids and also I didn't fulfill my interest as I want like coffee, food...”

Table 5 Predictors of institutional delivery service utilization in terms of cases and controls, Omo Nada Woreda Jimma zone, South West Ethiopia, March 2016

Variables	Categories	Cases n=140	Controls n=273	P-value*	AOR, 95% CI
Mother education	Unable to read and write	87(62.1%)	231(84.6%)		1
	Can read and write	21(15%)	15(5.5%)	0.345	1.03 (0.06, 7.11)
	Primary	24(17.1%)	19(7%)	0.662	1.25(0.33, 16.5)
	Secondary and above	8(5.7%)	8(2.9%)	0.042	2.15(1.16, 4.00)
Husband Education	Unable to read and write	59(42.1%)	184(67.4%)		1
	Can read and write	23(16.4%)	33(12.1%)	0.149	1.64(0.96, 2.82)
	Primary	43(30.7%)	49(17.9%)	0.128	1.36 (0.12, 5.76)
	Secondary and above	15(10.7%)	7(2.6%)	0.016	1.91(1.21, 3.01)
ANC attend	Yes	129(92.1%)	208(76.2%)	0.013	3.55(1.54, 6.23)
	No	11(7.9%)	65(23.8%)		1
Use of Maternal waiting home	Yes	86(61.4%)	19(7.2%)	0.001	19.92(7.38, 30.41)
	No	54(38.6%)	245(92.8%)		1

* P.Value< 0.05

CHAPTER SIX: DISCUSSION

The finding of this study has similarity in many dimensions with the finding of other studies. The major predictors for institutional delivery in this study in Omo Nada woreda women were mothers' education, husband education, use of maternal waiting home, ANC follow up, and knowledge of mother were found to be the independent predictor for the utilization of institutional delivery.

Personal related determinants

Mothers' educational status

According to this study personal related determinants increases to secondary and above education level of mothers (AOR, 2.15, 95%CI, 1.16, 4.00) were the probability of using institutional delivery becomes two times higher than that of unable to read and write. Similarly when we see a case control study conducted in western Ethiopia, those women who had education level secondary and above utilize institutional delivery three times greater than that of unable to read and write , in Bako District 3 times (23), Goba 3.1 times(18), Bahir Dar City 3.5 times(14) are more likely to give birth at health facility than illiterate mothers.

This indicated that high level of mothers' education increases the level of institutional delivery. This could be because high level of knowledge leads mothers to use modern health services like institutional delivery.

Husband educational status

In this study educational status of husbands was one of the important predictor in determining institutional delivery service utilization. Husband who attended secondary and above education were about two times (AOR: 1.91, 95%CI: 1.21, 3.01) more likely to give birth at health facility than unable to read and write. The data is similarly with studies from Sidama Zone South West Ethiopia, Goba woreda in Oromia region 3.2 times more likely to give birth at health facility than unable to read and write husbands.

This indicated that high level of husbands' education increases the level of institutional delivery. This could be because high level of knowledge leads husbands to encourage their wife's to use health institutions for delivery.

Knowledge of mothers

Knowledge is one factor that can explain and related with place of delivery for women. Accordingly women who deliver at health facility and home were assessed. In this current study women who know about institutional delivery were more likely to deliver at health institution. A one unit increase in knowledge mean score of mothers among case is 1.6 time more likely to use institutional delivery than controls (AOR= 1.6 (95% CI= 1.23, 2.21)).

This study is also consistent with other finding conducted Factors Associated with Institutional Delivery in Boricha District of Sidama Zone , Southern Ethiopia 12.4 times (13), Institutional delivery service utilization and associated factors in Shekel District 2.97 times(15) and Safe delivery Service Utilization in Metekel zone,North West Ethiopia. 4.4 times (12), more likely delivered in health facility than not knowledgeable Mothers.

Those mothers who have high level of knowledge regarding maternal health are more likely to use institution for delivery. It could be because having more knowledge about maternal health services and complications related to delivery leads mothers to give birth in institutions.

Obstetric related determinants

ANC attendant

In this study when we compare the proportion of women who have ANC follow up majority 92.1% of them utilize institutional delivery. In addition to this ANC follow up had shown (AOR: 3.55(95% CI: 1.54, 6.23) significant association with institutional delivery. Women who use ANC follow up had the chance of having institutional delivery compared to those not using. This could be due to the fact that counseling is given at ANC service about the use of institutional delivery. This study is also consistent with other finding conducted in Bahirdar which showed us the positive advantage of using ANC follow up for utilization of institutional delivery 4.2 times (12), Sekela District 4.26 times (15), Goba 2.7 times (18), West Wolega Zone 2.91 times (22) and SamreSaharti District(17) 4.6 times more likely delivered in health facility than no ANC received mothers.

The Qualitative data also supported this finding. *Most of the respondents stated that if the mothers get appropriate counseling and advise the exact date of delivery they (mothers) will give birth at health institution.*

This implies that health professionals did not give the appropriate ANC service for their clients. A study done East Gojjam Amhara show that the findings a line with this study. This implies that in both study areas there may be due to mothers didn't know the expected date of delivery and they may not get appropriate service(32).

Health facility related determinants

Maternal waiting home

Another important variable which had shown significant association was the use of maternal waiting home. Women who had utilized maternal waiting home during their pregnancy time has twenty times more likely to give birth at health facility compared with not utilizing the maternal waiting home service. This is supported by the study conducted in Mozambique to see the effectiveness of maternal waiting home in enhancing facility delivery and to confirm that the hypothesis of research which states that health facility with maternal waiting home have increased instructional delivery coverage when compared to those without these services(33).

As explained in the qualitative part of this study *Majority of the FGD participants also agree with the quantitative finding they (FGD) state “MWH is essential for a mother to give birth at Health Institution if the mother stay at Health Institution level for 15 days, at the time of labor not only the mother but also the families are not facing a problem for transportation.”*

This implies that if the health facilities fulfill the need of the mothers at the time of stay and delivery; the husbands have no problem to send their wife's for the service.

But some of the participants disagree with the service of MWH. They stated that MWH make a trouble for a family as a whole.” If the mothers stay at the health center for 15 days; who cares children? Who cook the food for the family?”

This implies that the work load of the house gave for the mother only. So involving the husbands during ANC service is important to increase the utilization of MWH service.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION

7.1. Conclusion

Various reasons were mentioned for the reasons that kept women in home delivery are still high in Ethiopia. This study has come up with the result of conclusion; many factors contribute to this experience. Among these factors, maternal education, husband education, use of maternal waiting home, ANC follow up, and knowledge of mother were found to be the independent predictor for the utilization of institutional delivery of after controlling other variables as confounders. Interventional measures taken to decrease under-five and maternal mortality will help in reducing home delivery. Such measures that improve maternal and child health programs should be further strengthened

7.2. Recommendations

Based on the above finding it is recommended that

Zonal Health Department

Admissions are not uniform and in many occasions open to any pregnant woman at term; there is a need for the development of admission and discharge criteria, monitoring, and quality control mechanisms.

The Woreda health office and Health centers

- They should prepare in-service training for health care providers to improve their skill.
- The woreda health office collaborate with women development army and HEWs should create awareness about the importance of Institutional Delivery through mobilize general public including mothers and husbands.
- They should strengthen the existing maternity waiting home and develop new maternal health waiting homes where not available.
- They should investigate the accepted food of the community in relation to support given for pregnant mothers so as to make suitable waiting home by the users.

Health extension workers

- They should have to facilitate and give health education for mothers and husbands to attend ANC visit

Health development army

- They should have to create awareness on the community to use ANC.

Health service providers in the area

- Should advise women and their husbands about the availability and use of maternal waiting home for women at community and facility level.

For researchers

- Further studies should be done on maternity waiting home service utilization to identify factors associated with mothers towards institution delivery services.

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Annex

Annex 1 Sample size determination procedure

Exposure	Percent of control exposed	Percent of cases with exposure	Sample size for		Total sample size	Reference
			Cases	Controls		
BPCR	85.5	95.4	124	247	371	(31)
ANC visit	29.73	70.48	17	34	51	(21)
Obstetric problem	91.5	80.6	126	252	378	(31)
ANC FP	79.46	90.5	128	256	387	(31)
Knowledge birth related	46.44	85.18	18	35	53	(13)
parity	25.49	61.4	22	43	65	(21)
Education status of mother	73.81	28.57	14	27	41	(13)
Attitude of mothers on delivery	83.26	16.73	11	6	17	(13)
ANC FP	77.52	93.56	112	223	335	(18)

Annex 2 Proportional allocation sample size

No_	Name of Kebeles	Total populations of 12 Kebeles	K target popn	T targ/T sample size	K target popn/ 6	Total sample size W/O decimal	cases	Controls
1	Laftaka	4532	157	6.274	25.07	25	8	17
2	S/Adami	5420	188	6.274	29.98	30	10	20
3	N/Sokote	3947	137	6.274	21.83	22	7	15
4	N/Cala	7683	267	6.274	42.49	42	14	28
5	N/Dawe	5690	197	6.274	31.47	31	10	21
6	B/Gombo	4105	142	6.274	22.71	23	8	15
7	D/Yaya	7419	257	6.274	41.04	41	14	27

8	G/Bula	8949	311	6.274	49.49	49	16	33
9	L/Bula	5339	185	6.274	29.53	30	10	20
10	G/seden	6698	232	6.274	37.04	37	12	25
11	Asendabo	10048	349	6.274	55.58	56	19	37
12	Nadda	7190	250	6.274	39.77	40	13	27
Total		77,019	2673		426	426	142	284

Annex- 3: English Questioner

Information sheet and consent form

Jimma University, College of Health Sciences,

Department of Health Economics, Management and policy

Questionnaires to assess Determinants of institutional delivery service utilization in Omo Nada Woreda, Jimma Zone, Oromia region, North West Ethiopia in 201

General Information for study participants

Introduction

Hello! My name is _____ and I am from the research team of college of health sciences of Jimma University. We are working to assess determinants of institutional delivery service utilization in Jimma Zone Omo Nada woreda, within the fairly scientifically sampled kebeles. This study tries to identify factors of institutional delivery service utilization and factors associated with its utilization. I am one of the data collectors and I am asking you some questions about your institutional delivery service utilization status. Your participation indirectly contributed in improving the problem of institutional delivery service utilization. Your response is never exposed to any party without your consent and it is possible not to tell your name and the interview takes 20 to 25 minutes. There is no obligation to participate in the study. You have full right to refuse participation, refrain during interview and decline from answering to some or more of the question if you don't like to answer them. Would you please cooperate in responding the following questions?

Are you willing to participate in the study? 1. Yes 2. No

If you say “yes” sign below

Date Consent form

I have been briefly informed about the study and clearly understood the objective of the study.
So I here approve my consent with my signature to take part in the study.

Signature _____ Date _____

Thank you so much!

If no, skip to the next participant by writing the reason of her refusal.

Informed consent certified by:

Data collector code _____ Name _____ signature _____

Date of interview _____ time started _____ time completed _____

Results of interview: 1 complete 2 refused 3 respondent not available 4 partially completed.

Checked by: Supervisor name _____ signature _____ date _____

Annex- ii: Questionnaire in English version

Jimma University, College of Health Sciences, Department of Health Economics, Management and policy

Questionnaires to assess Determinants of institutional delivery service utilization in Jimma Zone, Oromia region, North West Ethiopia in 2016.

001. Questionnaire Code _____ House number _____

002. Stratum 1-Rural ____ 2-Urban ____ 003. Woreda _____

004. Kebele _____ 005. Got / Area name _____

006. Date of interview did ____/mm ____/2016

006. Name of data collector _____

007. Name of Supervisor _____ check survey & sign here _____

008. Place of delivery
Others_____

1-health facility_____

2-Home _____ 3-

PART 1. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS		
No.	Question	Responses
101	Where is your place of residence?	1. Urban 2. Rural
102	Current Age of Mother	_____ Years
103	Mother level of education?	1. unable to read and write 2. Able to read and write 3. Elementary (1-8) grade 4. Secondary (9-12) grade 5. College or University and above
104	Husband level of education?	1. unable to read and write 2. Able to read and write 3. Elementary (1-8) grade 4. Secondary (9-12) grade 5. College or University and above
105	What is your religion?	1. Orthodox 2. Muslim 3. Catholics 4. Protestant 5. Waqefata 6. Other Specify _____
106	What is your marital status?	1. Single 2. Married 3. Divorced 4. Widowed 5. Separated
107	To which ethnic group do you belong?	1. Oromo 2. Amhara 3. Gurage 4. Wolaita 5. Dawero 6. Other Specify _____
108	What is your occupation when you gave your last birth?	1. House wife 2. Farmer 3. Merchant 4. Governmental Employed 5. Non-Governmental Employed (NGO) 6. Daily laborer 7. Home servant or maid 8. Others _____
109	What is the main occupation of your husband?	1. Farmer 2. Merchant 3. Governmental Employed 4. Non-governmental employed 5. Daily laborer 6. Other Specify _____
110	Number of Family size	_____
PART 2: OBSTETRIC HISTORY RELATED FACTORS		
111	How old were you at your 1 st pregnancy in completed years?	_____ years
112	What is the total number of pregnancies in your life time?	_____
113	What is the total number of live births? (parity)	_____
114	Have you ever had history of abortion?	1. Yes 2.No
115	If yes how many times?	1. One <input type="checkbox"/> 2. Two 3. Three 4. More than three <input type="checkbox"/>

116	Have you ever had history of still birth?	Yes 2.No
117	If yes how many times?	1. One <input type="checkbox"/> 2. Two 3. Three 4. More than three <input type="checkbox"/>
118	Have you ever had history of Neonatal death?	Yes 2. No
119	If yes how many times?	1. One <input type="checkbox"/> 2. Two 3. Three 4. More than three <input type="checkbox"/>
120	Did you have history of difficult labor?	1 .Yes 2. No
121	If yes duration of labor of last delivery	1. < 12hrs 2. 12-24hrs 3. >24hrs
122	Did you attend antenatal care (ANC) for your recent pregnancy?	1. Yes 2. No
123	If yes to Q122, How many times did you receive ANC during your last pregnancy till delivery?	1. Once 2. Two time 3. Three times 4. Four or more times
124	Where did you give birth for your youngest child?	1. At home 2. At health facility 3. On the way to health facility
125	If your answer for question 124 is at health facility, Why did you prefer it?	1. Difficult labor 2. Service is provided freely 3. Health facility was near to me 4. Need better service 5. Husband/Family allowed 6. HF delivery is save 7. I have told to give birth at HF 8. Bad outcome with previous HD. Other (specify)_____
126	If you gave birth at home for your youngest child, Why do you prefer to deliver at home? (Multiple response is possible)	1. labor was smooth /emergency 2.Lack of transport / ambulance 3. I don't think it was important to go to HF 4. Facility not open 5. Don't trust facility/poor quality of service 6. No female provider at facility 7. husband/family refused 8. not customary 9. I was told my pregnancy is normal 10. Fear of operation 11. previous home delivery was normal 12. Lack of Money 13. Too far health facility

		Other specify _____
PART 3. HEALTH FACILITY RELATED FACTORS		
127	Availability of health facility (health center ,Hospital)	1. Yes 2. No
128	Did you have information about Maternal waiting home for institutional delivery?	1. Yes 2. No
129	Is it Available Maternal waiting home for institutional delivery?	1. Yes 2. No
130	If yes Q128, are you used Maternal waiting home?	1.Yes 2. No 3. Incomplete
131	In your opinion Is it Accessible a health facility?	1.Yes 2. No
132	Approximately how many hours does it take to reach the nearby health facility?	_____ walking hours
PART 4. PERSONAL RELATED FACTORS		
Knowledge Questions		
133	Did you have information about skilled institutional health/birth care services?	1 .Yes 2.No
134	If yes, What were your sources of information about skilled institutional health care services?	1.Healthextension workers/professionals 2. Health facility 3. Mass media 4. Friends and family 5. 1 to 5 group 6. Others specify _____
135	What is the recommended minimum number of times a pregnant woman is to attend ANC?	1. One times 2. Twice 3. Three times 4. Four times and above
136	What Laboratory services are offered to pregnant woman during ANC? (Mention at least four)	1.Hgb/Hct for anemia 2. HIV/AIDS test 3. Syphilis 4. blood group 5. Malaria 6. Urinalysis 7. Diabetic Mellitus (FBS/RBS) 8. Stool examination 9. Others Specify

137	Which services are offered to pregnant women during labor and delivery at the health unit? (Mention at least four)	<ol style="list-style-type: none"> 1. Blood Pressure 2. Pulse rate 3. Respiratory rate 4. HIV 5. Fetal heart bit 6. Hgb/ Hct 7. Diabetic Mellitus 8. Induction as necessary 9. Blood group 10. Blood transfusion as necessary 11. Ultra sound Others_____
138	Knowledge about danger signs of pregnancy	<ol style="list-style-type: none"> 1. Vaginal bleeding 2. Vaginal gush or fluid 3. Severe headache 4. Blurred vision 5. Fever 6. Abdominal pain 7. Other
139	General knowledge about obstetric complications	<ol style="list-style-type: none"> 1. haemorrhage 2. infection 3. unsafe abortion 4. prolonged labour 5. Eclampsia 6. Anaemia 7. ruptured uterus 8. Others.....

140	Knowledge about Maternal Waiting Home services?	<ol style="list-style-type: none"> 1. Pre and Postnatal Care 2. Physician exams 3. Laboratory tests 4. 24 hour nursing care 5. Treatment of illness 6. Uncomplicated delivery 7. Education 8. Family planning 9. Newborn care + breast-feeding 10. Nutrition 11. Skills training 12. Food & laundry 13. Child care 14. Ambulance service 15. Income generation 16. Others specify 				
141	What are they BPCR for deliver to health facility?	<ol style="list-style-type: none"> 1. A plan of where to have the delivery 2. A skilled birth attendant 3. Supplies needed for a clean delivery 4. Supplies needed for a clean postpartum 5. Being aware of the signs of an emergency and the need to act immediately 6. Designated decision maker 7. A way communicated with a source of help (skilled attendant, facility, transportation) 8. Emergency funds 9. Emergency transportation 10. Blood donors 				
Attitude Questions of mothers		Strong agree	Agree	Neutral	Disagree	Strong disagree
142	Pregnant women can choose their place of delivery by themselves					
143	Husbands promote their wives to attend skilled delivery care					
144	Attending skilled delivery service is safe and satisfactory					
145	Delivery complications can be dangerous for the health of the woman					
146	Delivery complications can be dangerous for the health of the new born					
147	Every pregnant woman needs a skilled attendant					

	at delivery					
148	Being attended by male health professional during delivery is very shameful and unethical					
149	It is very shameful to deliver on delivery bed/couch in labor ward					
150	Women do not go to health facility for delivery because the health worker do not treat them respectfully					
151	Any pregnant woman can at risk.					
152	Home delivery is a bad habit.					

Household's wealth index.

Now I will ask you about some fixed assets that your households have.

Does the household has any of the following properties.(circle)		Yes(1)	No(0)
153.	Functioning radio/tape	1	0
	Functioning television	1	0
	Stove(gas/kerosene/electric)	1	0
	motorcycle	1	0
	Cart/Gari	1	0
	Watch(hand /wall)	1	0
	Mobile phone	1	0
	Sofa	1	0
	Spring mattress	1	0
	Foam/sponge mattress	1	0
	generator	1	0
	Tractor (agricultural)	1	0
	Water pump	1	0
154	Does the Household have the following animals?	1.yes 0.no	How many?
	oxen		
	cows		
	Horse /mule		
	Goats /cheeps		
	Chicken		
	Donkey		
155	What is the main source of drinking water for members of your household?	1. piped water into dwelling 2..Piped water to yard/plot 3.Public tap/standpipe water 4.Borehole water 5.Protected Dug well 6.Unprotected Dug well 7.Protected spring Water 8.Unprotected spring Water 9.River 10.Others, SPECIFY _____	
156	What kind of toilet facility do members of your household usually use?	1. Pit latrine 2. Pit latrine with slab 3. Pit latrine without slab/Open pit	

		4. VIP 5. No facility /bush/field 6. Other specify	
157	Do you share this toilet facility with other households?	1. Yes 0/ No	
158	If "yes for Q 156" how many households use this toilet facility?	No. Of households _____	
159	Main material of the floor. Record observation	1. Earth/sand 2. Dung 3. Wood 4. Cement 5. Other ,specify _____	
160	Main material of the roof. Record observation	1. No roof 2. Thatch/leaf 3. Corrugated iron /metal 4. Other, specify _____	
161	Main material of the exterior walls. Record observation.	1. Natural walls 2. No walls 3. Bamboo/wood with mud 4. Uncovered adobe 5. covered adobe 6. Plywood /Reused wood 7. Other specify _____	
162	How many rooms do the household has?	No. of rooms _____	
163	Does any member of this household own any agricultural land?	1. Yes 0. No	
164	If yes, How many (local units) of agricultural land do members of this household own?	Local units 1. Local units _____ 2. Don't know	
165	Does any member of this household have a bank or microfinance saving account?	1. Yes 2. No	

Thank you for your participation!

Annex 4. Afan Oromo Questioner

IBSAA FI GUCA/UNKA WALIIGALTEE AFFAN OROOMOTTIN

UNIVERSITII JIMMAATTI, KOOLLEJJII SAAYINSII FAYYAA

MUUMMEE IKONOMIKSII, MANAJIMANTII FI POOLISII FAYYAA

Ibsa Waa'ee Qorannichaa

Akkam jirtu? Maqaan Koo _____ jedhama, Godina Jimmaa anaa Oomooo Naaddaa kana keessatti wantootni itti fayyadamummaa tajaajila fayyaa haadholee kanaa waliin walqabatan maal akka ta'an addaan baasuuf qorannoo adeemsisaa jirra. Qorannaa kanaan maaltu akka haalaa ittifayyadaminsa tajaajila fayyaa haadholee wajjin wal qabatu addaan baasuuf adeemsisaa jirra. Ani warra daataa funaanan keessaa tokkodha. Gaaffilee tokko tokko waa'ee keessan isin gaafachuufan dhufe. Hirmaachu keessanif jecha miidhaan isin irratti dhufu tokkole hin jiru, deebii isin kennitaniif jecha faayidan isin irraa hir'atus hin jiru. Garuu, hirmaannan keessan rakkoo itti fayyadaminsa tajaajila fayyaa haadholee waliin walqabatu fooyyessuuf waan gargaaruuf, baay'ee barbachisaadha. Deebiin isin kennitan fedhii keessaniin ala eenyumattuu dabarfamee hin himamu, akkasumas, maqaa keessan himuun isin hin barbaachisu. Itti dabalataanis qo'nnaa kana irratti hirmaachuun dirqama miti, gaaffii barbaaddan deebisuu dhisuun ni danda'ama. Irratti hirmachuf fedhii qabduu?

Eyyee _____ Lakki _____ → Galateeffachuun dubartii itti aantutti darbi



Unka walii galtee

Waa'een qorannoo kanaa sirritti naaf galeera, kayyoo isaas hubadheera. Kanaaf qorannoo kana keessatti hirmaachuuf fedha qabaachuu koo mallattoo kootiin nan mirkaneessa.

Mallattoo nama hirmaatee _____ guyyaaa _____

Maqaaa nama raga funaanee _____ mallattoo _____

Maqaa To'ataa _____ mallattoo _____

UNIVERSITII JIMMAATTI, KOOLLEJJII SAAYINSII FAYYAA

MUUMMEE IKONOMIKSII, MANAJIMANTII FI POOLISII FAYYAA

Gaafannoo itti fayyadaminsa tajaajila fayyaa haadholee Godina Jimmaa aanaa Oomoo Naaddaa keessatti argamanii fi wantoota itti fayyadaminsa tajaajila kanaa waliin walqabatan qo'achuuf qophaa'e

- 001. Koodii gaafannoo _____
- 002. Ganda _____
- 003. Gooxii/ maqaa beekamaa naannoo _____
- 004. Guyyaa gaafannoo _____ / _____ / 2008
- 005. Yeroo itti jalqabame _____ yeroo itti dhume _____
- 006. Maqaa nama ragaa funaanee _____
- 007. Maqaa To'ataa _____

Kutaa Iffaa: Gaaffilee wa'ee haala jireenyaa fi amala hirmmaatootaa		
Lak.	Gaaffii	Deebii
101	Bakka jireenyaa?	1. Magaalaa 2. Baadiyyaa
102	Umuriin keessan waggaa meeqa?	Guutuu waggaaatiin _____
103	Sadarkaa barumsaa keessan?	1. Kan hin baranne 2. Dubbisuu fi barreessuu qofa 3. Kutaa (1-8) 4. Kutaa (9-12) 5. Koollejii /Yunivarsiitii fi isaa ol
104	Sadarkaa barumsaa abbaa mana keessan?	1. Kan hin baranne 2. Dubbisuuf barreessuu qofa 3. Kutaa (1-8) 4. Kutaa (9-12) 5. Koollejii /Yunivarsiitii fi isaa ol

105	Amantaan keessan maalii?	1. Ortodoksii 2. Musiliima 3. Kaatolikii 4. Proteestaantii 5. Waaqeffannaa 6. Kan biraa (caqasaa)_____
106	Haala gaa'ila keessanii?	1. Kan hin heerumiin 2. Kan heerumte 3. Kan dhirsaa wal hiikte 4. kan dhirsi irraa du'e 5. Kan garagara jiraatan
107	Sabummaan keessan maali?	1. Oromoo 2. Amhara 3. Guraagee 4. Wolaayittaa 5. Dawroo 6. Kan biraa (caqasaa)_____
108	Hojiin idilee keessan maali turee?	1. Haadha manaa 2. Qotee bulaa 3. Daldaltuu 4. Qacaramtuu Mootummaa 5. Qacaramtuu Miti- mootummaa 6. Hojii humnaa guyyaa guyyaan 7. Hojjettuu mana namaa Kan biraa (caqasaa)_____
109	Hojiin abbaa mana keessan maali?	1. Qotee bulaa 2. Daldala 2. Qacaramaa Mootummaa 3. Qacaramaa Miti-mootummaa (NGO) 4. Hojii guyyaa Kan biraa (caqasaa)_____
110	Baay'inni maatii keessanii meeqa?	_____

Kutaa 2ffaa: Gaaffilee haala ulfaa fi dahumsaan walqabatan

111	Da'ima kee isa calqabaa yeroo ulfooftu waggaa meeqa turte?	Guutuu waggaa_____
112	Hanga ammaatti waliigalatti yeroo meeqa ulfooftee jirta?	_____
113	Hanga ammaatti daa'ima fayyaa meeqa deessee jirta?	_____
114	Hanga ammaatti ulfi osoo hingahiin sirraa bahee/addaan citee beekaa?	1. Eeyye 2. Lakki
115	Eeyye yoo jette gaffii 116'f, yeroo meqaf?	1. Yeroo tokko 2. Yeroo lama 3. Yeroo sadii 4. Yeroo afurii fi isaa ol
116	Hanga ammaatti daa'ima siharkaa deebi'e (kan osoo hin dhalatiin du'e) deessee beektaa?	1. Eeyye 2. Lakki
117	Eeyye yoo jette gaffii 116'f, yeroo meqaf?	1. Yeroo tokko 2. Yeroo lama 3. Yeroo sadii 4. Yeroo afurii fi isaa ol
118	Hanga ammaatti daa'imni dhalatee turban osoo hin guutiin si jalaa badee beekaa?	1. Eeyye 2. Lakki
119	Eeyye yoo jette yeroo meqaf?	1. Yeroo tokko 2. Yeroo lama 3. Yeroo sadii 4. Yeroo afurii fi isaa ol
120	Yeroo mucaa isa gara dhumaa irratti Ciniinsuun sirra turee sirakkiseerra?	1. Eeyye 2. Lakki
121	Eeyye yoo jete gaffii 122'f, Sa'atii meqaa sirra ture?	1. Sa'a 12 gadii 2. Sa'a 12-24:00 3. Sa'a 24:00 ol
122	Yeroo mucaa isa gara dhumaaf ulfaa turtetti, tajaajila hordoffii ulfaa taasistee beektaa?	1. Eeyye 2. Lakki
123	Gaaffii 125'f eeyye yoo ta'e, hanga gaafa deessutti yeroo meeqa hordoffii ulfaa taasifte?	1. Yeroo tokko 2. Yeroo lama 3. Yeroo sadii 4. Yeroo afurii fi isaa ol
124	Mucaa kee isa dhumaa eessatti deesse?	1. Manatti 2. Mana yaalaatti Karaa gara mana yaala iiratti

125	Gaaffii 129'f Mana yaalaatti yoo ta'e, mana yaalatti da'uu maalif filatte?	<ol style="list-style-type: none"> 1. Ciniinsuun waan narakkiseef /narra tureef 2. Tajaajilli da'umsaa tola waan ta'ef 3. Manni yaalaana dhihoo waan ta'ef 4. Tajaajila irra fooyya'aa waanan barbaadeef 5. Abbaan waraa/maatiin waan naaf eeyyameef 6. Raakkoo irraa waan nabaraaruuf 7. Mana yaalatti akkan dahu ogeessi waan natti himeef 8. Yeroo darbe manatti dahee rakkoon waan naquunnameef kan biraa ibsaa _____
126	Gaaffii 129'f Daa'ima kee isa dhuma manatti deesse yo ta'e, manatti da'uu maalif filatte? (deebii lamaa ol deebisuun nidanda'ama)	<ol style="list-style-type: none"> 1. ciniinsuun salphaa waan turef 2. Rakkoo geejjibaa/ambulansiin dhabe 3. Mana yaalaatti da'uun waan barbaachisu natti hin fakkaanne 4. Manni yaalaa cufaa ture 5. Tajaajilli mana yaalaa gahumsa hin qabu 6. Dubartiin tajaajila kennitu waan hin jirreef 7. Abbaa warraa/maatiin waan nadhorkaniif 8. Waan hin baratamneef 9. Ulfi nagaa ta'uu waan natti himamaeef 10. Yaala baqaqsanii-hodhuu waanan sodaadhuf 11. Manatti dahee rakkoon waan na hin quunnamneef 12. Qarshii waan hin qabneffii 13. Manni yaalaana fagoo waan ta'ef Kan biraa (ibsaa) _____
Kutta 3ffaa Gaffilee Dhabatta Fayyaa Wajiin Walgabatee		
127	Dhaabbatni fayyaa naannoo keessan jira? (fkn:Buufata fayyaa, Hospitaala)	10. Eeyye 2. Lakki
128	Wa'ee Iddoon turtii hadholii dhaahumsa duraa dhagesse beekt'aa?	1. Eeyye 2. Lakki
129	Iddoon turtii hadholii dhaahumsa duraa jira?	1. Eeyye 2. Lakki
130	Yoo 'Eeyyee' ta'e gaffiin 129, Iddoon turtii haadhoolii dahumsa duraa yoo jiraate itti fayyadamtee jirtaa?	1. Eeyye 2. Lakki 3. Giddu dhan dheserra
131	Mana yaalaa yeroo da'umsaaf deemtan dhihoo dha?	1. Eeyye 2. Lakki
132	Mana yaalaa sinitti dhihoo jiru bira gahuuf tilmaamaan sa'aa hagam sin fudhata?	Lukaan/ Miilaan deemsa sa'aa _____
Kutta 4 ffaa: - Haalota Nam-tokkeen wal-qabatan PERSONAL RELATED FACTORS		
Gaaffilee Hubannoo fi Beekumsaan wal-qabatan Knowledge Questions		
133	Tajaajilli dahumsaa ogeessota fayyaa ga'umsa qabaniin mana yaalaatti akka kennamu dhageessee beektaa?	1. Eeyye 2. Lakki
134	Eeyyee yoo ta'e, odeeffannoo waa'ee tajaajilichaa eessaa argattu ture?	1. Ogeessota ekisteenshinii fayyaa 2. Mana yaalaa 3. Sab-quunnamtii/miidiyaa 4. Maatii fi hiriyyaa 5. Tokko-shanee

		6. Kan biraa (caqasaa)_____
135	Haati tokko ulfooftee yoo xiqqate yeroo meeqa hordoffii ulfaa gochuu qabdii?	1. Yeroo tokko 2. Yeroo lama 3. Yeroo sadii 4. Yeroo afurii fi isaa ol
136	Tajaajilli laboraatoorii dubartii ulfaa fi abbaa manaa ishheetiif yeroo hordoffii ulfaa kennaman maalfaadha?	1. Lakkoofsa seelota dhiiga diimaa/Hgb 2. Qorannoo HIV/AIDS 3. Qorannoo Chabxoo 4. Gartuu dhiigaa (blood group) 5. Qorannoo Busaa 6. Qorannoo finchanii 7. Qorannoo dhibee sukkaaraa (FBS/RBS) 8. Qorannoo bobbaa/boolii guddaa Kan biraa (caqasaa)_____
137	Hadholii ulfaatiif yeroo ciniinsuu fi dahumsaa tajajilla maalfaaatu kenema?	1. Dhiibbaa dhiigaa bikkuu/Blood pressure 2. Dhahnnaa onneelakkahuu/Pulse rate 3. Hargansuu lakkaahuu/Respiratory rate 4. Qorannoo dhiigaa HIV/AIDS 5. Dhikkifata onnee daa'ima dahumsa dura 6. Hamma seelota dhiiga diimaa qorachhuu/Hgb 7. Qorrannoo dhibee sukkaaraa (FBS/RBS) 8. Qorichaan ciniinsuu calqabsiisuu 9. Gartuu dhiigaa (blood group) 10. Gummaacha dhiigaa kennuu/blood transfussion 11. Ultraasaawundiidhaan ulfa ilaalamuu Kan biro (caqasaa)_____
138	Mallattoolee balaafamoo yeroo ulfaa mul'achu danda'an maalfaa akka ta'e caqasii. danger signs of pregnancy	1. Dhiiga dahumsa dura dhangala'u 2. Bishaan mataa ciniinsuu dura dhangala'uu 3. Mataa dhukkubbii hamaa 4. Ijatti maruu/Blurred vision 5. Qaama ho'isuu 6. Garaa muraa 7. Kan biraa (caqasaa)_____ -
139	Rakkoowwan balaafamoo ulfaa fi dahumsaan wal-qabatan hamma beektan caqasaa.	1. Dhiiguu/haemorrhage 2. Dhibee baakteeriyaa/infection 3. Seeraan ala ulfa baasuu/unsafe abortion 4. Ciniinsuu dheraa/prolonged labour 5. Dhibee dhiibbaa dhiigaa/eclampsia 6. Hir'in dhiigaa/Anaemia 7. Dhohuu gadameessaa/ruptured uteru Kan biraa (caqasaa)_____
140	Iddoo turtii hadholii ulfaa dahumsa dura tajajilli kenemmu maalfaa akka ta'e caqasaa.	1. Gargaarsa dahumsa duraa fi boodaa/ANC and PNC 2. Qorannoo Doktoraa/Physician exams 3. Qorannoo laaboraatoorii/Laboratory tests 4. Wal'aansa ogeessaa sa'a 24 guutuu/24 hrs nursing care 5. Wal'aansa dhibeelee garaagaraa/Treatment of illness 6. Dahumsa rakkoo malee/Uncomplicated delivery 7. Hubannoo fayaarratti/Education 8. Karoorra maatii/Family planning 9. Kunuunsaa fi harma hoosisuu daa'immanii 10. Haala nyaataa/Nutrition 11. Leenjii tooftaa fayyaa/Skills training 12. Soorataa fi qulqullina uffataa/Food & laundry 13. Kunuunsa ijoollee/Child care

	Stoovii/gaazii/ibsaaelektrikaaStove(gas/kerosene/electric)	1	0
	Motorsaaaykiliimotorcycle	1	0
	Gaarii fardaaCart/Gari	1	0
	Sa'aatii girgiddaaWatch(hand /wall)	1	0
	Mobaayilii Mobile phone	1	0
	'Soofaa'Sofa	1	0
	Firaashii spoonjiiSpring mattress	1	0
	Firaashii cidii Foam/sponge mattress	1	0
	Genereetarii generator	1	0
	Tiraaktara QonnaaTractor	1	0
154.	Manni kun bineelda manaa armaan gadii qabaa?	1.eyyee 0.hinqabu	Meeqa?
	Sangaaoxen	1.eyyee 0.hinqabu	
	Sa'acows	1.eyyee 0.hinqabu	
	Farad/gaangee	1.eyyee 0.hinqabu	
	Hoolaa/ reetii	1.eyyee 0.hinqabu	
	Reetii	1.eyyee 0.hinqabu	
	Harree	1.eyyee 0.hinqabu	
155.	Maatiin keessan bishaan dhugaatii eessaa argataa?	1. bishaan boollaa itti ijaarame 2. bishaan boollaa itti hin ijaaramin 3. burqituu itti ijaarame 4. burqituu itti hin ijaaramin 5. Bishaan Biirii 6. bishaan bollaa paampii kan uummataa 6. Bishaan lagaa yaa'u 7. Ujummoo/sarara bishaanii dallaa keessaa 8. Ujummoo/sarara bishaanii dallaan alaa Kan biro,ibsi _____	
156	Maatiin keessan mana fincaanii akkamiitti fayyadama?	1. Boolla qotamaatti 2. Boolla fincaanii dahannaa qabu 3. Boolla fincaanii dahannaa hin qabne 4. Mana fincaanii sadarkaa isaa eeggate 5. Dirree,ykn bakkee irratti Kan biraa,ibsi _____	
157	Mana fincaanii kana maatiin kan biraa isin waliin nifayyadama?	1. Eeyyee 0/ Lakki	
158	Yoo deebiin 179 eeyyee ta'e Baayyinni Abbaa warraa isin waliin itti fayyadamanii meeqa?	Baayyina abbaa warraa _____	
159	Hundeen lafa mana kanaa maalii?	1. Biyyoo/ lafa 2. Dikee /compostii 3. Muka 4. Simintoo Kan biro _____	

160	Ijoon (Uwwisi) mana kanaa maali? Ilaalii/daawwadhuu mirkaneessi.	1. Uwwisa hin qabu 2. Cita ykn baala 3. Sibiila qorqorroo Kan biraa_____
161	Duppon ykn Gidgidnaan mana kanaa maal irraa tolfame? Ilaalii/daawwadhuu mirkaneessi.	1. Natural walls 2. Keenyan hin qabu 3. Mukaafi biyoo ykn Dhoqqee 4. Suphee ykn shakilaa duudaa hin ta'in 5. Bilookeetii ykn Shakilaa duudaa 6. Muka ykn xawulaa hin dulloomne (yeroo birraaf kan fayyadu) Kan biraa_____
162	Manni keessan kun kutaa meeqa qaba?	Baayyina kutaa_____
163	Maatii keessan lafaqotisaa kaan qabu jira?	1. Eeyye 2. hinjiru
164	Maatii keessan lafaqotisaa hagam qaba?	Safartuu naannoo(hektaara) _____ Hin beeku
165	Maatii keessan keessaa namni accountii baankii ykn baankii qusanoo fayyadamu jiraa? Does any member of this household have a bank or microfinance saving account?	1. Eeyye 2. hinjiru

HIRMAANNAA KEESSANIIF GALATOOMAA!

Annex 5 Field Guide For Focus Group Discussions (FGDs)

Open ended questionnaires for FGDs

Name of Facilitator Name of Note taker

Date..... Place of discussion

Time discussion started..... Time ended.....

Number of Participant Women.....men.....

Occupation of participants, Farmers.....Merchants.....daily laborer.....

Governmental employer.....House wife.....

Age of participants, 15-25 years.....26-36 years.....37-47 years> 48years.....

Introduce moderators, not takers, participants and introduce the objective of the discussion

and topics.

- 1) In what conditions do mothers in your kebele give birth? (delivery place and attendant)
- 2) How do culture and tradition affect mother's choice of delivery place?
- 3) How do you feel about the delivery service in health institution?
- 4) What difficulties may a pregnant mother face to reach and deliver in health institution?
- 5) What do the family and neighbors suggest on place of delivery?
- 6) What should be improved for mothers to deliver in health institution?
- 7) What is the attitude of the community towards health institution and how do you influence their choice of delivery place? (for community leader & health extension worker)
- 8) Why use maternity waiting home? (Information, availability, decision making power of women, transportation, quality of service)
- 9) Why not use maternity waiting home? (Information, availability, decision making power of women, transportation, quality of service)
10. How do you evaluate the quality of the services you had in the health facility? (probes: the availability of infrastructure; the accessibility for essential obstetric care; the referral system for emergency obstetric care; the competency of the attendant; the availability of the attendants; the suitability of delivery room, beds, sheets; the emotional support provided during delivery; the cost of service; if any.....?)